THE IMPACT OF SHARED VISION ON LEADERSHIP, ENGAGEMENT, ORGANIZATIONAL CITIZENSHIP AND COACHING

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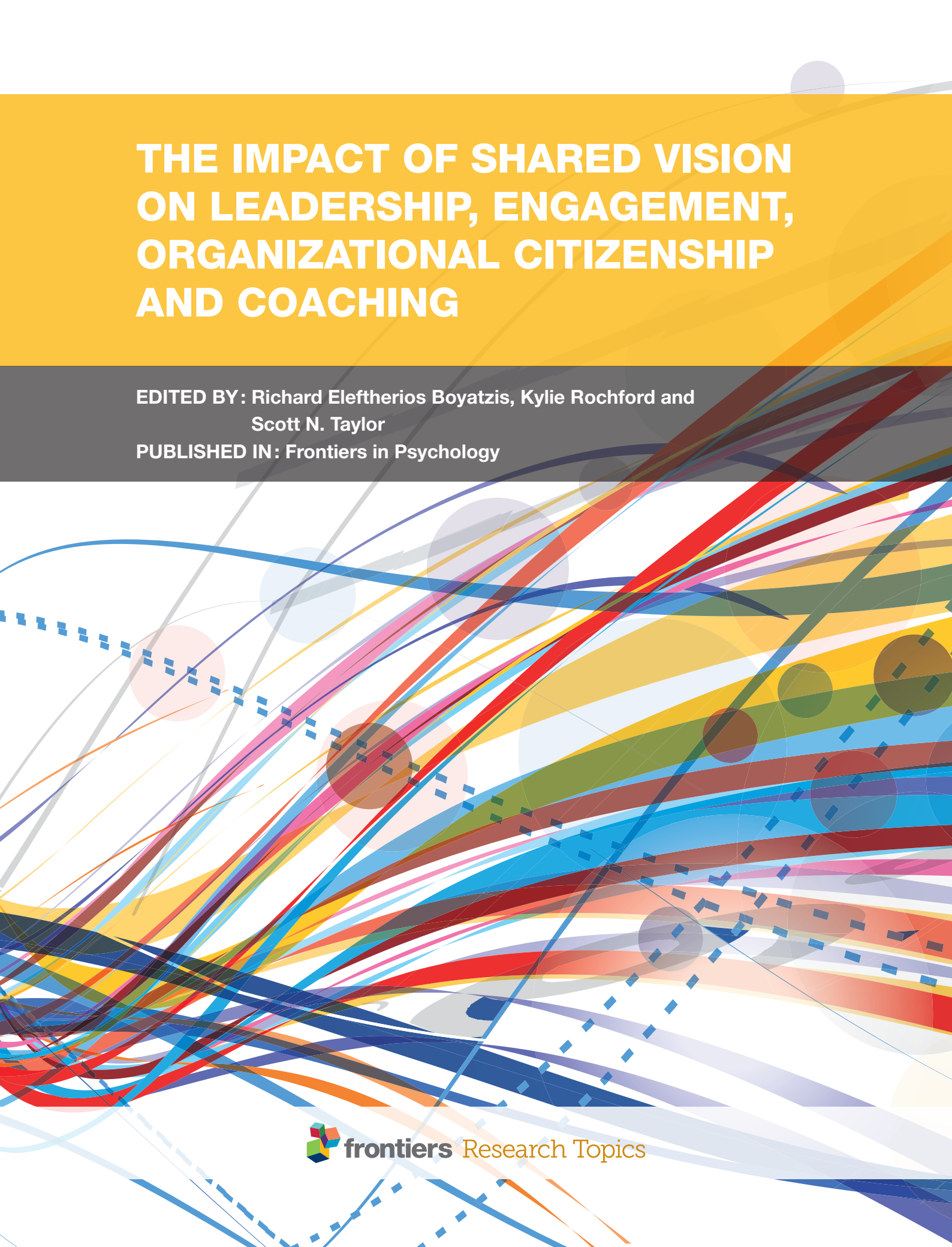
PUBLISHED IN: Frontiers in Psychology



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ISSN 1664-8714
ISBN 978-2-88919-671-5
DOI 10.3389/978-2-88919-671-5

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THE IMPACT OF SHARED VISION ON LEADERSHIP, ENGAGEMENT, ORGANIZATIONAL CITIZENSHIP AND COACHING

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According to management and psychology courses, as well as legions of consultants in organizational psychology, shared vision in dyads, teams and organizations can fill us with hope and inspire new possibilities, or delude us into following false prophets. However, few research studies have empirically examined the impact of shared vision on key organizational outcomes such as leadership effectiveness, employee engagement, organizational citizenship, coaching and organizational change. As a result, the field of organizational psychology has not yet established a causal pattern of whether, if, and how shared vision helps dyads, teams and organizations function more effectively.

The lack of empirical work around shared vision is surprising given its long-standing history in the literature. Bennis and Nanus (1982) showed that distinctive leaders managed attention through vision. The practitioner literature has long proclaimed that vision is a key to change, while Conger and Kanungo (1998) discussed its link to charismatic leadership. Around the same time, positive psychology appeared in the forms of Appreciative Inquiry (Cooperrider, Sorensen, Whitney, & Yaeger, 2000) and Positive Organizational Scholarship (Cameron, Dutton, & Quinn, 2003). In this context, a shared vision or dream became a legitimate antecedent to sustainable change. But again, empirical measurement has been elusive.

More recently, shared vision has been the focus of a number of dissertations and quantitative studies building on Intentional Change Theory (ICT) (Boyatzis, 2008) at dyad, team and organization levels of social systems. These studies are beginning to lay the foundations for a systematic body of empirical knowledge about the role of shared vision in an organizational context. For example, we now know that shared vision can activate neural networks that arouse endocrine systems and allow a person to consider the possibilities of a better future (Jack, Boyatzis, Leckie, Passarelli & Khawaja, 2013). Additionally, Boyatzis & Akrivou (2006) have discussed the role of a shared vision as the result of a well-developed set of factors that produce a desired image of the future.

Outside of the organizational context, positive visioning has been known to help guide future behavior in sports psychology (Loehr & Schwartz, 2003), medical treatment (Roffe, Schmidt, & Ernst, 2005), musical performance (Meister, Krings, Foltys, Boroojerdi, Muller, Topper, & Thron, 2004), and academic performance (Curry, Snyder, Cook, Ruby, & Rehm, 1997).

This Research Topic for Frontiers in Psychology is a collection of 14 original papers examining the role of vision and shared vision on a wide variety of desired dependent variables from leadership effectiveness and executive performance to organizational engagement, citizenship and corporate social responsibility, and how to develop it through coaching.

Citation: Boyatzis, R. E., Rochford, K., Taylor, S. N., eds. (2015). The Impact of Shared Vision on Leadership, Engagement, Organizational Citizenship and Coaching. Lausanne: Frontiers Media. doi: 10.3389/978-2-88919-671-5

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frontiers in Psychology

HYPOTHESIS AND THEORY
published: 21 May 2015
doi: 10.3389/fpsyg.2015.00670

The role of the positive emotional attractor in vision and shared vision: toward effective leadership, relationships, and engagement

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Personal and shared vision have a long history in management and organizational practices yet only recently have we begun to build a systematic body of empirical knowledge about the role of personal and shared vision in organizations. As the introductory paper for this special topic in *Frontiers in Psychology*, we present a theoretical argument as to the existence and critical role of two states in which a person, dyad, team, or organization may find themselves when engaging in the creation of a personal or shared vision: the positive emotional attractor (PEA) and the negative emotional attractor (NEA). These two primary states are strange attractors, each characterized by three dimensions: (1) positive versus negative emotional arousal; (2) endocrine arousal of the parasympathetic nervous system versus sympathetic nervous system; and (3) neurological activation of the default mode network versus the task positive network. We argue that arousing the PEA is critical when creating or affirming a personal vision (i.e., sense of one's purpose and ideal self). We begin our paper by reviewing the underpinnings of our PEA–NEA theory, briefly review each of the papers in this special issue, and conclude by discussing the practical implications of the theory.

Keywords: positive emotional attractor, vision, shared vision, leadership, engagement, organizational citizenship

OPEN ACCESS

Edited by:
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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *22 November 2014*
Accepted: *07 May 2015*
Published: *21 May 2015*

Citation:
Boyatzis RE, Rochford K and Taylor SN (2015) The role of the positive emotional attractor in vision and shared vision: toward effective leadership, relationships, and engagement. Front. Psychol. 6:670. doi: 10.3389/fpsyg.2015.00670

Introduction

For many years practitioners and academics alike have argued that the creation of a vision, be it at the individual, team, or organizational level, motivates people to action and inspires them to reach beyond their current state. Oddly, empirical evidence pertaining to the antecedents and consequences of vision remains fragmented and scarce. There is not an agreed upon definition of the concept of vision (Kantabutra and Avery, 2002), nor do we understand the underlying mechanisms that influence how a person, team, or organization arrives at an effective vision. This special edition of *Frontiers in Psychology* addresses the importance and impact of personal and shared vision.

As an introduction to the papers in this special issue, we present a series of theoretical propositions regarding the existence and critical role of two psycho-physiological states which we believe are intricately involved in the creation and realization of a personal vision or shared vision: the Positive Emotional Attractor (PEA) and the Negative Emotional Attractor (NEA). Using complexity theory, we argue that these two states are strange attractors, each characterized by three dimensions: (1) positive versus negative emotional arousal, (2) hormonal arousal; and (3) neurological activation (Boyatzis, 2008). To our knowledge, our PEA–NEA theory is one

of the first theories that brings together and integrates early work on emotion and the self with recent advances in physiological measurement and neurological activity. Additionally, this is one of the first papers that addresses the underlying mechanism of the visioning process and sheds light on how elements of the process of arriving at a vision consequently impact the content of the vision that is developed – which we know from existing research, impacts the effectiveness of that vision (Kantabutra and Avery, 2010).

In this paper we make three key arguments: (1) a personal vision based on an ideal self is required if the vision is to lead to sustained and desired change; (2) in order to create a personal vision based on an ideal self, or among others, a shared vision, a person must be in the PEA; and (3) while the NEA is required to move a person from vision to action, a person must spend significantly more time in the PEA in order to achieve sustained desired change. We begin by examining the theory of regulatory focus to build an argument as to why the content of a vision and process of visioning are critical components of arriving at an effective vision. We then integrate literature from the fields of emotion, psychology, physiology, and neuroscience to introduce two theoretical constructs: the PEA and NEA. Following this, we link the PEA and NEA to personal and shared vision and explain why the PEA is necessary in order to formulate an engaging vision that will motivate sustained and desired change. Finally, we address the role of the NEA and the necessary balance between the PEA and NEA that is required to move a person closer to their vision. After presenting our propositions, we provide a brief introduction to the papers included in this special issue. We conclude with a discussion of the practical implications of PEA–NEA theory and directions for future research.

Vision and Positive and Negative Attractors

Contents and Process of Vision

Whether at the individual, team, or organizational level, visions, and shared visions are generally developed to create motivation to move from a current state to a desired end state. Regulatory focus theory proposes two different ways in which a person may approach an ideal state: a "promotion focus" and a "prevention focus" (Higgins, 1997). Higgins (1997, p. 1282) argues that when faced with a discrepancy between a current state and an ideal state, an individual with a promotion focus will be motivated to approach the desired end state based on concerns with "advancement, growth, and accomplishment." Conversely, a person with a prevention focus will be motivated to approach the desired end state based on concerns with "protection, safety, and responsibility" and avoid risks and danger. Individuals with a promotion focus experience pleasure and pain as a result of the presence or absence of positive outcomes while individuals with a prevention focus experience pleasure and pain as a result of the presence or absence of negative outcomes.

Higgins proposed three variables that are responsible for the regulatory state a person experiences. A promotion focus is aroused by a focus on nurturance needs, strong ideals, and "gain/no-gain" situations. Conversely, focusing on security needs, strong "oughts" and "non-loss/loss" situations arouse a prevention focus. Based on this, visions that are founded on nurturance needs, strong ideals, and "gain/no-gain" situations will elicit a promotion focus while visions founded on security needs, strong "ought's," and "non-loss/loss" situations will elicit a prevention focus. Thus, the basis of a vision becomes a critical variable in influencing the regulatory state that will drive the individual toward their vision. In the following section we distinguish between the *ideal self* and the *ought self* and argue that for a vision to lead to sustained and desired change it must elicit a promotion focus, and thus be based on an ideal self rather than an ought self.

The development of alternate future scenarios, also called "prospection" (Gilbert and Wilson, 2007), is a cognitive process with profound emotional features that enables us to transcend behaviorism and cognitive determinism (Seligman et al., 2013). Gilbert and Wilson (2007, p. 1351) defined prospection as, "...our ability to 'pre-experience' the future by simulating it in our minds." Current research on prospection includes neurological and simulation studies as well as forecasting, and highlights the distinction between 'goal directedness' and 'purpose and dreaming' (Gilbert and Wilson, 2007; Seligman et al., 2013). The former is aiming for a target and the latter is aspirational and significantly less specific. In this paper, we focus on the purpose and dreaming aspect of prospection as the critical ingredient in developing a personal or shared vision.

At the center of the concept of vision is that the desired images of the future, or a hoped for future, helps create, or remind people about their sense of purpose. Deeper than goals or strategy, vision can provide a sense of mission. This sense of purpose has been shown to help with mortality (Hill and Turiano, 2014) and increased career commitment over time (Dobrow Riza and Heller, 2015). One of the papers in this Special Issue (Buse and Bilimoria, 2014) shows that sense of purpose as part of a female engineer's personal vision, or ideal self, significantly predicts career engagement and career commitment in STEM fields (i.e., science, technology, engineering, and math careers).

Leadership can help others find direction and purpose through vision. A leader emphasizing vision elicits more adaptability and openness in those within the organization (Griffin et al., 2010). For example, aspiring to help others and promote health can be an inspiring vision for hospitals. Carton et al. (2014) showed that invoking a desired image in the future and selected values inherent in that image was the most motivating and predictive of organizational performance. This stands in contrast to a statement by some hospitals that their desire is to provide the best health care, which is more of a goal than a vision, or they skip that entirely and focus on budgets and showing financial sustainability. The latter communicates to patients and their families, doctors, nurses, and staff and potential donors that their real intent is to make money. While fiscal responsibility and financial survival is a necessity, it is limiting and does not appear to generate the kind of excitement derived from inspiring vision statements (Carton et al., 2014).

The Contents of Visions: Ideal Self Versus Ought Self

Within the broader psychological literature, the ideal self could be considered as a subset of possible selves (Markus and Nurius, 1986, 1987; Martinez, unpublished dissertation proposal), which are described as self-schemas derived from representations of future selves that capture the cognitive components of a person's "hopes, fears, goals, and threats" (Markus and Nurius, 1986, p. 955). However, in contrast to the possible self, the ideal self discussed in this paper and in a number of papers in this *Special Issue* is not concerned with negative possible selves, but rather a version of a future self that is consistent with our core values, aspirational and also inspirational. Additionally, the focus is on the 'ideal' rather than the 'probable.' In this regard, the ideal self as we see it is perhaps most consistent with the early work of Levinson (1978) who conceptualized 'the Dream' as an imagined self that represents a variety of conscious and unconscious desired states, aspirations, and values. One major theoretical distinction between PEA/NEA and promotion/prevention focus is that we do not consider "goals" a part of the PEA state. This rationale will be explained later. In that sense, Higgins' promotion focus is more concentrated on goals and, in his words, "ambitions" rather than the dream and aspirations of the PEA. It is also important to note the ideal self in this paper is distinct and in contrast to Rogers (1951) ideal self that is defined as "how I *should* be" [emphasis added]. How a person believes that they should be is closer to our conceptualization of the ought self discussed below.

Distinguishing between Ideal and Ought Self

Boyatzis and Akrivou (2006) define the ideal self as a psychological component of the self that is partially conscious and partially unconscious and is both privately conceptualized and socially influenced. The ideal self is comprised of three main components: (1) an image of a desired future that is (2) emotionally fuelled by hope, and (3) reflects a person's core identity.

The manifestation of the ideal self is a personal vision that articulates a person's "dreams, aspirations, and fantasies" (Boyatzis and Akrivou, 2006, p. 626). In contrast to the general possible self that is, by definition, purely cognitive, we consider emotion as a part of each of the components of the ideal self. We believe that the deep and fundamental alignment of the ideal self with a person's core identity, values, goals, and aspirations enables the arousal of hope and efficacy, without which positive emotion would not be manifested and, as will be discussed later, a person would not be in the PEA.

In contrast to the ideal self, the ought self is someone else's desire or interpretation of what a person's ideal self should be (Boyatzis and Akrivou, 2006). While it is possible that a person's ought self and ideal self are not in conflict, our experience suggests that this is a rare occurrence. Boyatzis and Akrivou (2006, p. 628) warn that working toward an ought self will lead to feelings of betrayal, frustration, and anger as a result of realizing that the person had wasted time and energy "in pursuit of dreams and expectations that they were never passionate about". One caveat to this point is in the case that the ought self is fully internalized and integrated into the ideal self. In this case a person is able to have fully accepted an ought self "by bringing them into harmony or coherence with other aspects of their values and identity" (Deci and Ryan, 2000, p 236). In this case, it is likely that an external influence is internalized so deeply that over time it actually changes a person's core identity (e.g., certain religious movements). As a person's core identity changes, the ought self aligns with the ideal, reconciling any conflict between the two. While we believe that this situation is a rare occurrence, it highlights the intricate relationship between ideal and ought selves and the difficulty that many people experience when trying to separate the two.

In line with regulatory focus theory, we believe that developing a personal vision based on an ideal self results in a promotion focus, thus individuals are motivated to approach situations that are congruent with their personal vision and avoid those that are not (Higgins, 1997). The ideal self is concerned with growth, ideals, hope, congruence in harmony with one's values – the three variables that Higgins' attributes to a promotion focus, with the exception of goals and ambition. In contrast, personal visions that are based on an individual's ought self are based on security needs and non-loss situations; such visions are consistent with a prevention focus. There is some empirical evidence that supports our claim. Specifically, Higgins et al. (1994) found that a person's concern with approach is greater for the ideal than the ought self-regulation, while a concern with avoidance was greater for ought than the ideal self-regulation.

Although the versions of the self used by Higgins et al. (1994) are not entirely consistent with the ideal self proposed in this paper, the underlying principle remains the same. Further support for our claim can be found in a recent dissertation study (Passarelli, unpublished doctoral dissertation) that found participants that were coached around the PEA (which we later argue is an essential antecedent of an ideal self vision) demonstrated an 'attentive-interested' emotional state that is consistent with an approach motivation. In contrast, those coaching around the NEA (which we later argue is a likely consequence of an ought self vision) demonstrated an 'attentive-alert' state that was indicative of the vigilant avoidance state of a prevention orientation.

The relevance of the prevention and promotion focus to this paper is that we believe that in order for a vision to be effective – that is lead to sustained and desired change – it must be based on an ideal self rather than an ought self. We believe that this requires a promotion focus for two key reasons. First, while a prevention focus might spur a person to action to achieve short-term outcomes, any behavioral change approached from a loss/non-loss situation is unlikely to be maintained in the long term. Ironically, change actually requires a willingness to 'lose' a current state in order to move to a new, desired state. This point reflects the famous quote from Jim Collins: "Good is the enemy of great" (Collins, 2001, p. 1). In other words, if we approach change with a prevention focus, at best we will maintain the 'good' but we will not move beyond it. As discussed above, a vision based on an ought self elicits a prevention focus based on a loss/non-loss framing. This type of vision will not allow a person or organization to move to a new desired state. Rather, in order

for a vision to be effective, the vision must be based on a gain/no-gain framing characteristic of a promotion focus and the ideal self.

Second, a key enabler of the motivation gained from the ideal self is efficacy and hope (Boyatzis and Akrivou, 2006). Efficacy is derived from the fundamental alignment of the person's core identity with their ideal self and manifest vision. This could also be termed 'internalization' of the vision in a cognitive and affective manner. This core and fundamental alignment does not occur when a vision is based on an ought self, as the ought self is reflective of someone else's perception of your identity and values rather than your actual identity and values. Without the fundamental motivational drivers of efficacy and hope, a vision is unlikely to lead to sustained and desired change. In sum, we propose the following.

Proposition 1: Visions must be based on an ideal self rather than an ought self in order to produce sustained and desired change.

Overview of the Positive and Negative Emotional Attractors

The PEA and NEA are two distinct psycho-physiological states comprised of distinct emotional, psychological, physiological, and neurological characteristics that create "a force around one's thinking, feeling, and behaviors" (Passarelli, unpublished doctoral dissertation, p. 20). A summary of the characteristics associated with each state is provided in **Table 1** below. The relationship between these neural networks with the other components of the PEA–NEA are not likely to be linear or a simple correspondence. However, there is a growing body of evidence that shows that PEA experiences activate a distinct neural network called the default mode network (DMN), while NEA experiences suppress the DMN (Jack et al., 2012; see also Passarelli, 2015; this issue). The DMN is a neural network that primarily includes simultaneous activation of the prefrontal cortex (MPFC), the medial parietal cortex (MPC), posterior cingulate cortex (PCC), and the right temparo-parietal junction (rTPJ; Jack et al., 2012). We will discuss the DMN in more detail later.

The physiological distinctions listed in **Table 1** have yet to be validated, although initial studies strongly suggest that physiological activation is an important part of the PEA (Passarelli, unpublished doctoral dissertation) specifically, and more generally, positive affect (see Table 1 in Heaphy and Dutton, 2008 for a review). The neurological distinctions shown in **Table 1** have been validated in two fMRI studies (Jack et al., 2013; Passarelli et al., 2014), as have the emotional distinctions (see Howard, 2015; Passarelli, 2015). The cognitive distinctions listed in **Table 1**, with the exception of the memory and field of vision were validated by Passarelli et al. (2014). The relationship distinctions listed in **Table 1** were validated in Boyatzis et al. (2012) in a study of neural activations from follower-leader relationships. We acknowledge that these initial validation efforts are just the beginning of an ongoing validation and replication process, however, **Table 1** offers a set of underlying theoretical distinctions that can continue to be tested.

Boyatzis (2008) argued that the PEA and NEA are strange attractors (Lorenz, 1963; Erdi, 2008). As strange attractors, the PEA and NEA allow for multiple trajectories of behavior and emotions within each state, respectively, however, once in either the PEA or NEA, a person will generally return to a similar, although not identical, state as they started (Manson, 2001). This idea is similar to Fredrickson's broaden and build theory of emotions, which posits that positive emotions are self-reinforcing due to the psychological and physiological resources that are created when positive emotions are experienced.

In other words, PEA and NEA are self-regulating states; therefore, once a person is in either a PEA state or a NEA state, the person will remain in that state until a tipping point provokes a shift to the alternate state (Boyatzis, 2008). Self-regulating systems are inherently homeostatic, therefore unless the system is perfectly efficient (which humans are not; Ferber, 1999), deterioration will occur over time. We know that negative emotions are stronger than positive emotions (Baumeister et al., 2001); as a result, it seems fair to assume that unless the PEA state

TABLE 1 | Characteristics of positive and negative emotional attractors (PEAs and NEAs) (adapted from Boyatzis, 2013 and Passarelli, unpublished doctoral dissertation).

	Positive emotional attractor (PEA)	Negative emotional attractor (NEA)
Physiological	Greater parasympathetic influence	Greater sympathetic influence
	Release of oxytocin and vasopressin associated with social bonding	Release of epinephrine and norepinephrine to mobilize defenses; release of cortisol
	Decreased blood pressure	Increases pulse, blood pressure, and rate of breathing
	Higher heart rate variability	Lower heart rate variability
Neurological	Default mode network (DMN) neurogenesis	Task positive network (TPN) Inhibited neurogenesis
Emotional	Positive affect: hope, joy, amusement, elation	Negative affect: defensiveness, guilt, shame, fear, anxiety
Cognitive	Enhanced working memory and perceptual openness	Decreased executive functioning; Limited field vision/perception
	Global attention	Local attention
	Promotion focus	Prevention focus
Relationships	Learning orientation Resonant (in tune with each other)	Performance orientation Dissonant (out of sync or distant)

is actively maintained over time, we will eventually move toward the NEA even without a salient tipping point.

Tipping points may be reached due to an emotionally salient event or a high dosage of less salient events. For example, a person who is in the NEA may move to the PEA as a result of a particularly joyful event such as the birth of a child. Alternatively, a person may experience a number of positive events over a longer period of time that gradually reduces the intensity of the NEA, which consequently allows the person to move to the PEA. This point becomes relevant later in our paper when we argue that in order to create a vision that will invoke sustained and desirable change, a person must be in the PEA, and the process of creating this vision creates a dosage effect that can move a person from the NEA to the PEA.

Positive Emotional Attractor

First and foremost, the PEA is characterized by varying degrees of positive emotions. Emotions may be defined as "multicomponent response tendencies that unfold over relatively short time spans... [resulting in a] cascade of response tendencies manifest across loosely coupled component systems, such as subjective experience, facial expression, cognitive processing, and physiological changes" (Fredrickson, 2001, p. 218; for a discussion of the nuances of emotion and affect, see Fredrickson, 2001). Positive emotion, therefore, refers to discrete emotions that we use to describe or express our response to a pleasant experience or object. Examples of positive emotions include joy, interest, amusement, and love (Fredrickson, 2001).

The benefits of positive emotions have been a focus in behavioral and social science research over the past decade, particularly since the explosion of the positive psychology and positive organizational scholarship movements. Attributes of positive emotion that appear to be particularly relevant to the process of articulating an effective vision include higher levels of optimism about the future (Bower and Forgas, 2001), greater perceptual openness (Fredrickson and Branigan, 2005; Talarico et al., 2009), and openness to behavior change (Janig and Habler, 1999). Additionally, positive emotional states increase the likelihood of altruistic, helpful, cooperative, and conciliatory behavior (Insel, 1997; Barsade and Gibson, 2007) and improved decision making (Chuang and Lin, 2007).

While positive emotion is a necessary component of the PEA, positive emotion alone will not induce a PEA state. A person's positive emotion must also be accompanied by the arousal of the parasympathetic nervous system (PNS) and activation of the DMN. The PNS is a subset of the autonomic nervous system that supports our 'rest and digest' functions, immune system, cardiovascular health, and the neuroendocrine system (Uchino et al., 1996). The PNS also supports social engagement. Arousal of the PNS arouses the vagus nerve, and consequently, triggers the release of a number of hormones including oxytocin in women and vasopression in men (Insel, 1997; Schulkin, 1999; Kemp and Guastella, 2011). It is the release of these hormones that is largely responsible for the health benefits commonly associated with positive emotions including general wellbeing (Heaphy and Dutton, 2008), improved immune system functioning (Mahony et al., 2002), faster physical recovery following surgery (Carver and Scheier, 1993), lower risk of angina and heart attacks (Kubzansky et al., 2001), and lower risk of depression (Davis et al., 1998).

Finally, in conjunction with positive emotion and arousal of the PNSs, emerging evidence from the cognitive neuroscience domain suggests that the PEA is also associated with the DMN. Specifically, two fMRI studies that examined the neurological activation during coaching interactions showed significant activation of areas of the DMN when participants were coached around the PEA rather than the NEA (Jack et al., 2013). A separate study that asked participants to recall memories of resonant (PEA) leaders revealed consistent findings – recalling memories of resonant leaders activated the parts of the DMN, while recalling memories of dissonant leaders activated the task positive network (TPN; Boyatzis et al., 2012).

The DMN has been associated with similar benefits as positive emotions and, more specifically, the PEA, including higher creativity and openness to new ideas (Raichle et al., 2001; Andrews-Hanna et al., 2010; Mars et al., 2012); emotional self-awareness (Ochsner et al., 2005; Schilbach et al., 2008), and social cognition (Schilbach et al., 2008; Jack et al., 2012; Mars et al., 2012).

Activation of the DMN may be directly linked to arousal of the PNS through the ventral medial prefrontal cortex (VMPFC, Eisenberger and Cole, 2012). The relationship, as mentioned earlier, is not linear and the time to activate or arouse neural systems versus hormonal systems varies. In addition, causality is likely both directions. In a follow-up, replication study of Jack et al. (2012), the VMPFC was significantly activated in a random effects analysis by two or three PEA sessions in contrast to one or no PEA coaching session (Jack, personal communication, March 3rd 2014).

In sum, the PEA is a psycho-physiological strange attractor that is derived from unique combinations of positive affect, PNS arousal, and activation of parts of the default mode network (DMN). The positive benefits of the PEA are realized as a result of the relatively stable nature of the strange attractor that explains the self-reinforcing nature of the PEA. Once the PEA has been activated, it acts as a positive force and guide on our subsequent thoughts and behavior (Boyatzis et al., 2013, p. 162).

Negative Emotional Attractor

In stark contrast to the PEA, the NEA is characterized first and foremost by negative emotions such as fear, anxiety, sadness, anger, disgust, and despair (Levenson, 1992; Fredrickson, 2001). It is generally accepted across a broad range of literature that negative emotions are stronger than positive emotions – that is, negative events produce "larger, more consistent, more multifaceted, or more lasting effects than positive events" (Baumeister et al., 2001, p. 325). Baumeister et al. (2001) argue that this is a necessary function of human beings as negative emotions allow humans to be highly adaptable and thus, facilitate human survival. As Boyatzis (2013, p.141) points out, "without surviving, there can be no thriving."

As with the PEA, while negative emotion is a necessary component of the NEA, alone it is not sufficient to constitute

the NEA state. In conjunction with negative emotion, the NEA is also characterized by arousal of the sympathetic nervous system (SNS). The SNS is associated with the human stress response and supports defensive strategies in response to experience of negative emotions. The immobilization functions of the SNS have been found to suppress our ability to engage in effective communication due to limiting facial expression, eye gaze, hand gesture, and listening abilities (Porges, 2003). In contrast to the positive health benefits associated with positive emotions and PNS arousal, prolonged periods of negative emotion and SNS arousal can be harmful to our health and wellbeing (McEwen, 1998).

The SNS is aroused when we feel that we are in physical danger, when we feel something is important, something is uncertain, or we are being evaluated (Segerstrom and Miller, 2004). Importantly, these events do not actually need to occur to arouse the SNS; humans can arouse the SNS merely by anticipating one of these conditions, e.g., anticipating the possibility of being evaluated by someone else (Sapolsky, 2004; Segerstrom and Miller, 2004). With this in mind, the process of creating a vision based with an ought self (security needs, strong ought's, and loss/non-loss situations) almost certainly arouses the SNS.

The final layer of the NEA is the neurological activation of areas associated with the TPN. The TPN is primarily comprised of parts of the dorsal attention system (Fox et al., 2005), the frontoparietal control network (Vincent et al., 2008), and the ventral attention network (Fox et al., 2006; Kubit and Jack, 2013). The TPN is activated by tasks requiring focused attention, working memory, logical reasoning, mathematical reasoning, and causal/mechanical reasoning (Shulman et al., 1997; Duncan and Owen, 2000; Fox et al., 2005; Owen et al., 2005; Van Overwalle, 2011). Using the TPN enables us to make decisions, solve problems and focus – functions that appear critical in threat situations associated with the SNS and NEA.

The relationship between the SNS and the TPN appears to be less clear cut than that between the PNS and the DMN. While there appear to be few instances (if any) when a person would be in the SNS and the DMN, we do believe it is possible to experience positive emotions and PNS arousal associated with tasks that require the TPN, e.g., data analysis, solving equations, etc. While the relationship between the NEA and TPN has not yet been systematically tested, there is a growing body of evidence that these two constructs are tightly coupled (Matthews et al., 2004). For example, negative emotions have been found to enhance memory accuracy (Kensinger, 2007) – a task associated with the TPN. Negative emotions have been linked to paying greater attention to detail and focusing on the task at hand (Luce et al., 1997) – also functions of the TPN.

In sum, the NEA is a psycho-physiological strange attractor that is derived from unique combinations of negative affect, SNS arousal, and activation of parts of the TPN. While the NEA offers some benefits, it elicits a prevention focus and narrows our range of attention. Given this, we propose the following:

Proposition 2: The NEA is detrimental to developing a vision based on the ideal self.

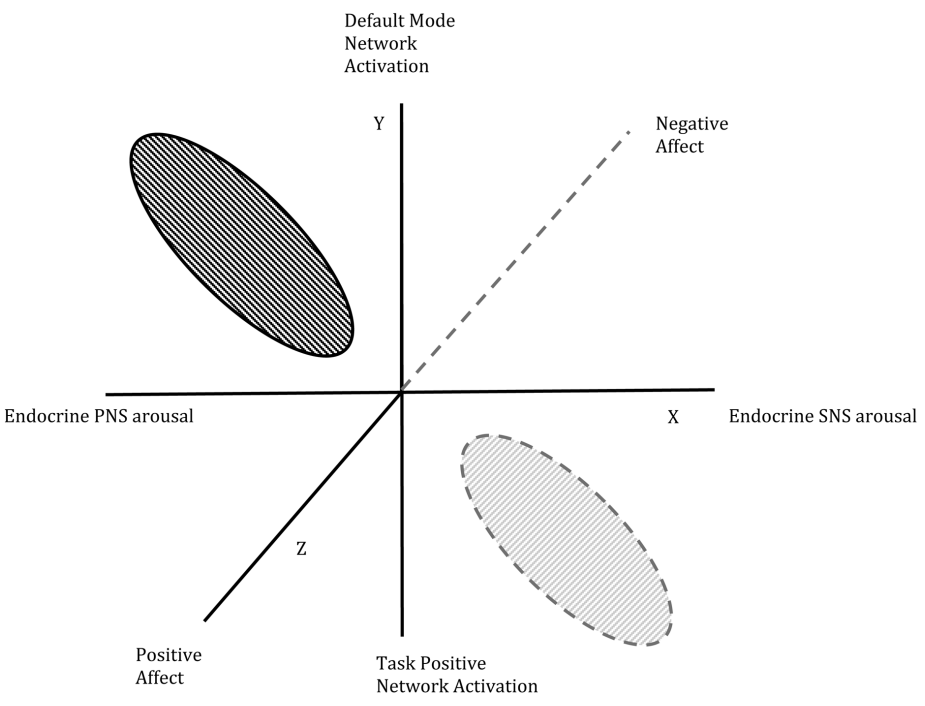

FIGURE 1 | Graphical representation of the positive emotional attractors (PEAs) and negative emotional attractors (NEAs) in intentional change theory.

PEA–NEA in Three Dimensions

The relationship between the three dimensions that characterize the PEA and NEA states is visually depicted in **Figure 1**. This figure extends the work published by Boyatzis (2013) by re-conceptualizing the three dimensions to include neurological activation. In this reworked model, the Z-axis represents the intensity of negative to positive emotion; the Y-axis represents the activation of the TPN versus the DMN; and the X-axis represents the arousal of the PNS versus the SNS. One point of clarification is necessary regarding the depiction of positive to negative affective. While some scholars claim that positive and negative affect are two separate dimensions (Cacioppo and Berntson, 1994); other contend that positive and negative emotions can be treated as polar opposites. For example, the Circumplex Model of Emotions (Posner et al., 2005) claims emotions consist of arousal and valence. Arousal represents the vertical axis and valence represents the horizontal axis, with the center of the circumplex representing neutral valence and medium levels of arousal. Similarly, the evaluative space mode of emotions (ESMs), a counter proposal to the circumplex model, also contends "that positivity and negativity have antagonistic effects. Positivity fosters approach; negativity fosters avoidance. . .. Though positivity and negativity may often be characterized by reciprocal activation, they may also be characterized by uncoupled activation, coactivation, or coinhibition." (Larsen et al., 2001, p. 686). The same authors went on to summarize, "most of our data are consistent with the circumplex prediction that polar opposite emotions are mutually exclusive." (Larsen et al., 2001, p. 693).

In critiquing the affective literature, Russell and Carroll (1999) argued that an orthogonal dimension of degree of "activation" was needed in affective models. This claim was further supported by Posner et al., (2005) with the development of the Circumplex Model of Emotions and was also the same position taken by Gottman et al. (2002) in the creation of a mathematical model of strange attractors describing the emotional states of married couples. In the model depicted in **Figure 1**, the intensity or activation of affective arousal appears as an expression within the positive versus negative emotional arousal, endocrine, and neurological axes with low levels of arousal closer to the origin and high levels of arousal far from the origin.

These three dimensions differ from the other two models using strange attractors to depict emotional states (i.e., the Fredrickson and Gottman models). Using a concept from complexity theory, strange attractors were defined by Ed Lorenz in 1963 as something that pulls other things, in our case people's behavior, attitudes, and feelings toward and around them, pulling them into the center. In contrast, a limit point cycle attractor pulls all in its presence into a vortex and a center (Casti, 1994). In this PEA/NEA model, once caught in the pull of an attractor, a person's mood, state, feelings, thoughts, and behavior cycle within a self-perpetuating loop. It takes a tipping point to move the state into the pull of the other attractor. The axes of the model explain how an experience would have to change to cause a phase transition (also from complexity theory) and therefore create a tipping point in the person's or the social group's state.

The Fredrickson and Losada (2005) model uses team advocacy versus inquiry and self versus other as the two other axes. Meanwhile, the Gottman et al. (2002) model uses positive and negative affect and intensity of affective expression as two dimensions, but had congruence of influence styles of the husband and wife as the third dimension. Beyond their formulae, Gottman et al. (2002) did report that prediction of marital processes and outcomes was based on a balance of three "spaces" which included a physiological response of each of the members of the couple.

The tipping point between these two states, the PEA and NEA, occurs when affect is balanced between positive and negative and SNS to PNS arousal and activation of TPN to DMN are close to neutral. Intensity on all three axes must be lowered because at high intensity conditions or higher salience, perceptions will be flooded and it becomes difficult for an alternative to be seen, experienced, or even considered.

These differences in our model are particularly important in leadership and organizational settings. The physiological axis we propose helps to predict what conditions will enable or allow a person to be adaptive and open to others. Whether this involves customers, clients, patients, or students, being open to hearing their concerns and desires is essential for an effective sales or helping process. For those in management or leadership positions, this dimension helps us to understand why focusing on problems or tasks can seem to concentrate people's attention, but may be doing it in a manner that arouses an NEA state and, therefore, closes a person emotionally, perceptually, and cognitively to alternatives. Such a result is often the opposite effect desired by the leader.

Further, since both NEA and PEA states are needed (the former for surviving and the latter for thriving), a model which helps a leader understand how to create conditions for a possible tipping point, and/or invoke one, is vital to handling complex challenges in competitive markets. During times of crisis or conflict with threatening potential consequences, awareness of the PEA and NEA states, the tipping points, and how to navigate among them can guide a leader to addressing challenges but doing so in a manner that is motivating and engaging for those around him or her.

Role of the Positive Emotional Attractor in Visioning

In summarizing the discussion above, we believe that in order for a person, team, or organization to discover or articulate a vision based on the ideal self, they must be in the PEA. Discovering an ideal self requires efficacy, hope, and openness (Boyatzis and Akrivou, 2006). It requires people to dream, imagine future selves, and to be excited about these images. When in a NEA state, we cannot access these emotions firstly because the NEA is characterized by negative emotions and the SNS and, secondly, because the NEA includes activation of the TPN, which narrows our focus and limits our ability to think beyond our current situation.

Due to the self-reinforcing nature of strange attractors, we believe that as a person, team, or organization moves closer toward articulating an ideal self vision, the intensity of the PEA

(positive emotion, PNS arousal, and DMN activation) increases (see also Fredrickson, 2001, 2004). While we might occasionally switch to the NEA during the early stages of articulating an ideal self based vision, in order to arrive at an ideal self that resonates with the person, team, or organization, the PEA must be the dominant state.

It is possible that a person perceives or believes that he or she has a vision for a desired state in the future that emerges from the NEA. We contend that such a supposed vision is emanating from an ought self, not an ideal self, and carries with it emotional obligations that are stressful to the person, invokes more SNS (and therefore triggers the NEA,) and further decreases openness to new ideas or the emerging of alternative elements of a desired state. The person's vision, in this situation, is limited and could even be said to be constrained with a prevention focus and desire to avoid aspects of a state. On the other hand, being in the PEA state allows a person to be more open to new ideas and scan the environment for different, unexpected cues and information. This means that being in the PEA can allow a person to consider a vision, and in coordination with others a shared vision.

The literature on goal orientation suggests that a focus on specific goals may arouse the NEA and block openness to new ideas. A performance goal orientation with an emphasis on specific targets has been shown to invoke avoidance goal orientation and lower performance (VandeWalle et al., 1999). In contrast, a learning goal orientation, which is about novelty, experimentation, and learning, has been shown to enhance performance (VandeWalle et al., 1999). This could be a result of arousing the NEA with a performance goal orientation versus the PEA with a learning goal orientation. The possibility of context being a factor resulted in a comprehensive study showing that a performance goal orientation and specific goals enhanced performance when the tasks were routine but not when learning or adaptation was needed (Seijts et al., 2004). Tracking students in a statistics course over a semester revealed that time pressure aroused negative emotions and reduced the drive to mastery and eventual performance (Beck and Schmidt, 2013). Howard (2015, in this special topic) showed that the portion of a coaching session with mid-career dentists (average age 49) devoted to planning what the person would do differentially in the coming year and setting goals resulted in a dramatic reduction in positive affect and an increase in negative affect in the coaching conversations, regardless of whether the overall coaching condition was more PEA or NEA oriented. Similarly, Fisher et al. (2013) showed that people with dispositional performance goal orientation responded to an increase in task importance with greater negative and weaker positive emotions.

Proposition 3: In order to create a vision based on an ideal self a person must be in the PEA.

Balancing the PEA with the NEA

While we believe that effective visions are created and pursued when primarily in the PEA, the NEA also plays an important role, particularly in moving a person from vision to action in the later stages of the visioning process. The NEA plays three key roles in visioning: (1) it activates the organism; (2) it provides a balance for the negative effects of excessive optimism; and (3) it encourages people to stretch and/or develop themselves (Norem, 2001). The key variable of interest here is the balance between the PEA and NEA. As discussed earlier, we know that negative emotions are stronger than positive emotions (see Baumeister et al., 2001 for a thorough review); thus, the impact of NEA experiences are stronger than PEA experiences. What we are less certain about is how much stronger negative emotions are than positive emotions. A number of positivity ratios can be found in the literature including Gottman's (1994) 5:1; Fredrickson and Losada's (2005) 3:1, however, a recent critique of Fredrickson and Losada's ratio (Brown et al., 2013) has raised a fresh debate as to the relative strength of these two affective states (see also Fredrickson, 2013). However, regardless of the exact ratio, we know that for benefits of the PEA to manifest, a person, team, or organization must spend significantly more time in the PEA than the NEA. Conversely, the benefits (and costs) of the NEA can be realized in a relatively short time span (e.g., Cameron, 2008).

Higgins early work on regulatory focus suggests that it is possible for people to experience negative emotions but maintain their promotion focus. Specifically, dejection-related negative emotions such as disappointment, dissatisfaction and sadness can be experienced as a result of the absence of positive outcomes even when a person has a promotion focus. Thus, it follows that NEA experiences characterized by dejection-related emotions can be beneficial to the creation and realization of an ideal-self vision, however, only when appropriately balanced with the PEA. In contrast to dejection-related emotions, agitation-related emotions such as fear, threat, and restlessness move a person from a promotion focus to a prevention focus. We believe that these types of NEA experiences are not only not beneficial to creating and pursuing an ideal self vision, but also actively prevent a person, team, or organization from doing so.

In sum, developing an ideal-self based vision requires a person, team, or organization to be in the PEA. The NEA also plays an important role in enacting and pursing a vision. However, due to the relative strength of negative emotions over positive emotions, in order to successfully develop and pursue an ideal self based vision, a person team, or organization must spend significantly more time in the PEA than the NEA. Additionally, time spent in the NEA should be characterized by negative emotions that allow the individual to remain in a promotion-focused regulatory state.

Proposition 4: Both PEA and NEA are required in order for an ideal self based vision to lead to sustained desired change; however, a person must spend significantly more time in the PEA than in the NEA.

Discussion

In the previous sections, we developed the rationale as to how a personal vision is based on a person's ideal self and is necessary to lead to sustained, desired change. The requirement of a person being in the PEA to contemplate and frame a personal vision was explained, as well as how discussing one's aspirations, hopes, and

a vision can tip a person into the PEA state. We also explained why the NEA state is required for action, but to sustain any effort at change, a person must likely venture into the PEA more frequently than the NEA and spend more time in the PEA state. At the individual level, the ideal self is often compromised and suppressed by a person's ought self or multiple ought selves.

Further, we explained how the PEA and NEA states are a result of three dimensions: positive versus negative affect, physiological arousal in terms of hormonal arousal and activation of specific neural networks. Through the dynamics of emotional contagion, we now describe how one person's vision can become a shared vision among two or more people.

Emotional Contagion and Developing Shared Vision

There appear to be multiple mechanisms by which one person's dreams, emotions and PEA/NEA mood state could jump to another person, and quite literally infect them. Beginning with the neuroscience perspective, mirror neuron networks allow us to mimic the actions of others (Iacoboni, 2009), leading to a convergence of emotional states. The causal path implies that once we act in a certain way, we tend to feel the emotions of the original actor. Social or behavioral contagion may be slower but has an important effect on others nonetheless, as shown by Fowler and Christakis (2008, 2010) in epidemiologically studying the spread of new or changed behavior among social networks. Most psychologists would conclude that such contagion is caused by verbal and non-verbal imitation processes driven by social comparison processes or role modeling effects (Elfenbein, 2014).

Neuroscience would suggest that direct brain-to-brain communications is not only possible but likely and faster than the path through mirror neuron networks (Lewis et al., 2000; Decety and Batson, 2007). As Decety and Michalska (2010) showed, the brain has at least two different neural circuits that can involve empathy (i.e., perceiving the feelings or emotions of another). In this research, one version of empathy is embedded in the prefrontal cortex and overlaps with a number of regions of the brain in the TPN. The other version of empathy appears embedded in parts of the DMN, which they refer to as a hemodynamic, sympathetic network. The former allows empathy through self-reference, and the latter allows empathy that seems focused on the other person.

As a result of a series of neurological studies of charismatic leaders with vision, Waldman et al. (2014) have articulated a causal path that creates the "shared" vision. They claim that emotional equanimity and empathy lead to a balancing of positive and negative visionary communication, which in turn causes reflective and mirrored contagion among a pair or group of people (Waldman et al., 2014). Hazy and Boyatzis (2015) presented a mathematical model predicting that emotional contagion of PEA states, both neurologically and through mirroring and mimicry, would lead to creation of proto-organizing forces of people with similar valences. Regardless of the specific mechanism, the contagion appears to occur and be a force for change and adaptation in relationships or a force that dampens inhibition and retreat from desired change.

Relationships Matter

Because of the dynamics of emotional contagion, the quality of relationships matter in determining effective leadership, engagement, and organizational citizenship. While the debate continues as to whether transformational leadership is sufficient for effective organizational performance, it appears that the quality of perceived relationship between the leader and followers mediates follower performance and citizenship (Wang et al., 2005).

In the papers in this special topic, properties of relationships that appear to be important in this causal sequence are the degree of shared vision, shared compassion and shared positive mood. Of those, shared vision consistently is the strongest indicator of a high quality relationship. The observation from these studies speaks to the transformative nature of special relationships. The shared vision in these relationships, we believe, engaged, or amplified the PEA state and the resulting openness to new ideas, people, and moral concerns.

Too Much Vision and PEA

The effects of too much NEA are evident in experienced stress, health disorders, and public health problems (e.g., obesity, sleep deprivation, etc.). The result is a relative lack of openness to new ideas in organizations and a lack of innovation and adaptability. Too much NEA brings leaders into dissonance and disrupts relationships. It also results in the few number of ineffective leaders (Goleman et al., 2002) and decreased engagement of people in their work organizations. Even observing someone else's anger, which will cause emotional contagion of NEA, reduces a person's ability to be creative in problem solving (Miron-Spektor et al., 2011). The antidote is to encourage people to spend more time in the PEA. But we contend that it may be more important to help people experience multiple moments of PEA each day rather than attempting to spend prolonged periods of time in the PEA.

Research highlights the dangers of too much PEA (Boyatzis, 2013). Competition neglect, not paying attention to competitor's innovations or progress, can be a serious consequence to spending too much time in the PEA (Camerer and Lovallo, 1999). If a strong shared vision becomes coupled with a shared belief in elitism or exceptionalism, it may lead to an overconfidence bias (Camerer and Lovallo, 1999). In an analogous manner, people high in optimism appear to make poor investment decisions by ignoring bad news and not selling stocks at a better time (Gibson and Sanbonmatsu, 2004).

Contributions and Findings from Papers in this Special Topic

The papers in this special topic address many of the ideas presented in this paper. In health care, Quinn (2015, this issue) shows that physician leadership, as measured through organizational citizenship behavior, was predicted by emotional and social competencies, but it was mediated by the degree of PEA in terms of perceived shared vision and compassion in their relationships to others in the hospital. Meanwhile, Howard (2015, this issue) reveals that coaching mid-career dentists to the PEA engages significantly more positive affect than coaching to the NEA. Dyck (unpublished doctoral dissertation) reported that

PEA behavior as coded from videos of interaction of medical students with standardized patients predicted the standardized patient's scores of the medical student's performance, which, by the way, was negatively affected by MCAT scores. Khawaja (2010) tested a variety of factors thought to be related to doctor-patient relationships in the medical literature. He reported that treatment adherence for Type II diabetics was predicted by many of these variables, but they were fully or partially mediated by the patient's perception of the degree of shared vision with the doctor.

In family businesses, shared vision makes a difference in many aspects of leadership and performance. Overbeke et al. (2015, this issue) reports that daughter succession in family businesses, even in the presence of sexist family beliefs, is predicted by two factors: the daughter's efficacy and the existence of a shared vision between the daughter and her father. Neff (2015, this issue) shows how shared vision is the strongest of five factors predicting financial performance of family businesses and their relative performance compared to competitors over 5 years. Miller (2014, this issue) expands on these two studies and shows that leadership development of the next generation in family businesses and shows that shared vision is a major factor in family business climate, which predicts leadership development.

In management, Thornton (2015, this issue) shows that shared vision as a component of perceived PEA mediated all individual variables, including conscientiousness and efficacy in predicting each of four types of corporate social responsibility: economic, discretionary, legal, and ethical. Clayton (2015, this issue) shows that successful mergers and acquisitions, as predicted by degree of championing behavior, is driven by two factors: autonomous motivation and perceived shared vision. Perceived shared vision was the strongest predictor of autonomous motivation as well. Additionally, Babu (2015, this issue) compared superior performing community college presidents with average performers and found passion and vision to be differentiators.

In organizations that others see as having a strong vision and higher purpose, Berg (2015, this issue) reports that high performing executives appear to think about their work and vision (i.e., purpose) in two distinct ways. Some see it in terms of goals and instrumental activities that will speed or enhance goal attainment. Others see a bigger picture, one that seems to transcend even the company, to a greater good for society. Meanwhile, Babu (2015, this issue) showed how more effective community college Presidents talked a lot about the vision and larger purpose than less effective community college Presidents. Hartz (unpublished doctoral dissertation) shows that the manager or leader's degree of communicating a shared vision effects the engagement of their subordinates in manufacturing companies. Shared vision was a major factor in university investment committees' commitment to learning and effectiveness of their knowledge management (Lord, 2015, this issue).

In the technical occupation realm, Buse and Bilimoria (2014, this issue) show that vision, hope, and a sense of purpose are key drivers in women being engaged and committed to technical careers. Meanwhile, Pittenger (2015, this issue) shows that emotional and social intelligence competencies predict organizational citizenship of IT managers, but it is fully mediated by the degree of shared vision and other elements of the PEA perceived in their relationships. Mahon et al. (2014, this issue) show, in technical knowledge worker teams, shared vision is an important antecedent of organizational engagement, enhanced by the emotional intelligence (as rated by others) of the technical works.

In coaching with the PEA focusing on personal vision, Passarelli (2015, this issue) shows that it is effective, even 30 min of it, in activating regions of the brain in the DMN, as contrasted to 30 min of NEA coaching focusing on obligations and commitments. She also discusses mental contrasting and why vision can sometimes not be sufficient for sustained action toward that vision. Finally, although not in this issue, we also learned that the quality of a relationship (i.e., perceived shared vision, compassion and positive mood – the PEA) between bank executives and an executive coach enhances the association of emotional and social intelligence on bank executives' leader effectiveness, in terms of performance and engagement (Van Oosten, unpublished Ph.D. dissertation).

Implications and Future Research

This paper offers three key practical implications. First, if a person, a team, or an organization are going to invest in creating a vision, they should make sure it is based on an ideal self rather than an ought self. This would require dialog among a wide spectrum of stakeholders and people within the organization, especially among those representing diversity in all differences. This means, the person, team, or organization must have a clear and shared understanding of what they value.

Second, we recommend getting oneself, a team, or organization in the PEA before working on the vision. Arousing the appropriate neural and hormonal states is important so that emotional contagion can help spread the PEA state and also to build a stock of PEA in order to buffer the NEA that may occur later in the visioning process as a person moves from vision to action. Examples of how to arouse the PEA include discussing the purpose of the organization, shared dreams or prospection of what one might become in the future, as well as discussing PEA components, like core values. Additionally, at the individual level, gratitude exercises are a powerful and fast way to evoke positive emotion and arouse the PEA.

Third, the axes of the PEA and NEA model may not be orthogonal. They may be oblique which could be clarified by research in the coexistence of the dimensions. At the same time, research is needed to determine the nature of when (or in terms of the three dimensions, where) tipping points may occur between the two attractors or states.

Finally, we emphasize the need to be cognizant of the balance between the PEA and NEA. Dreaming and visioning are of little long-term benefit to a person, team, or organization if the process does not eventually lead to action. While the PEA should dominate the early stages of vision development, the NEA will be required in the later stages. Leaders must be aware of the stronger effects of the NEA. Arousal of the NEA should be both less frequent and less intense that PEA arousal to maintain an effective balance between these two states.

The collection of articles in this *Special Issue* will invoke many ideas for future research studies. These willbe explored in the various papers, however, here are a number of studies we believe need to be done to continue this line of inquiry. The impact of having a personal vision on an individual, psychologically, physiologically, behaviorally, and in terms of their key relationships should be studied. The same is true for shared vision on the people in the dyads, teams, organizations, communities, or countries. The specific processes that lead to creation and sustaining of a "shared" vision should be studied.

At some point, it would be useful to establish whether being in a PEA state enables a person to articulate a vision (or collectively a shared vision), or having a vision/shared vision enables the PEA state, or both. If both causalities occur, then the differential antecedents and consequences should be examined. Although not related to PEA and NEA, specific research needs to help establish the relationships between the neural TPN and SNS, as well as neural DMN and PNS. Emotional contagion is a key process in experiencing and sustaining a shared vision. The specific causal processes should be examined.

Beyond LMX studies of leadership effectiveness, engagement and citizenship should include quality of one's (or the collective's) relationships, or relational climate as a mediator or moderator. Doing so will reveal processes not considered prior to these studies. Such research would help invoke questions about whether there are other characteristics of effective relationships beyond shared vision, compassion, and positive mood. Given the eruption of controversy about the Fredrickson and Losada (2005) positivity ratio but the validity of the Gottman et al. (2002) and other selected studies, the dosage of PEA should be examined. We need to understand what a desirable ratio would yield the appropriate balance for people and collectives, and how that ratio might vary in various situations and relationships. Of course, a theme throughout all of this work is a focus on the PEA. That said, we need to better understand the role of NEA in our survival and how and when being defensive may be helpful.

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in PSYCHOLOGY

ORIGINAL RESEARCH ARTICLE
published: 04 December 2014
doi: 10.3389/fpsyg.2014.01335

Next-generation leadership development in family businesses: the critical roles of shared vision and family climate

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The multigenerational survival rate for family-owned businesses is not good. Lack of a shared vision for the family enterprise and weak next-generation leadership are often cited as two of the leading reasons for the failure of family firms to successfully transition from one generation of family ownership to the next. The climate of the business-owning family has also been suggested as important to the performance of the family enterprise. Despite these commonly held tenets, there is a lack of rigorous quantitative research that explores the relationships among these three factors. To address this gap, a quantitative study of 100 next-generation family firm leaders and 350 family and non-family leaders and employees with whom they work was conducted. The results demonstrate that a shared vision for the family business has a strong effect on the leadership effectiveness of next-generation family leaders and a moderate effect on the degree to which they are positively engaged with their work. The findings also show that two dimensions of family climate significantly influence the likelihood that a shared vision for the family firm has been created. Open communication in the family is positively related to the presence of a shared vision for the business. Intergenerational authority, which refers to a senior generation that exercises unquestioned authority and sets the rules, is negatively related to the presence of a shared vision. Surprisingly, a third dimension of family climate, cognitive cohesion, which includes shared values in the family, had no relationship with the degree to which there was a shared vision for the family business. The implications for family business owners is that they would be wise to spend as much time on fostering a positive family climate characterized by open communication as they do on creating and executing a successful business strategy if their goal is to pass the business from one generation of family owners to the next.

Keywords: family business, family climate, intergenerational authority, leadership effectiveness, next-generation leader, open communication, shared vision, work engagement

INTRODUCTION

Family businesses constitute between 80 and 98% of all businesses in the world's free economies, generate 49% of the GDP in the U.S. and more than 75% in most other countries. They employ 80% of the U.S. workforce and more than 75% of the working population globally, and created 86% of all new jobs in the U.S. over the past decade. Despite their importance, only 30% of family businesses survive from the first to the second generation of family ownership, only 12% survive from the second generation to the third, and only 4% survive from the third generation to the fourth (Poza, 2013).

A survey of family business owners conducted by Ward (1997) found that lack of a shared vision for the family firm and weak next-generation leadership were two of the top three threats to long-term family firm success. While shared vision is important to the vitality of any business, it is of critical importance to family enterprises as commitment of family owners to the vision for the business is necessary to ensure long-term survival (Carlock and Ward, 2001; Ward, 2004; Poza, 2013). Well prepared next-generation family leaders who are committed to the vision of the family firm and engaged with their work are critical to smooth leadership successions (Handler, 1992, 1994; Morris et al., 1997; Sharma and Irving, 2005). Research has also shown that the climate of a business-owning family plays an important role in determining the culture and performance of family firms (Dyer, 1986; Björnberg and Nicholson, 2007) and the likelihood of successful transitions from one generation to the next (Morris et al., 1997).

This study explores the relationships among shared vision, family climate, and next-generation leadership effectiveness and engagement with their work in the family firm. There is a lack of empirical quantitative research to help us understand if these factors that are so often linked with family business success and longevity are actually related to each other. This paper seeks to address that gap in the literature, although it makes no attempt to demonstrate their relationship with long-term family

firm success, a task that would be more adequately addressed by a longitudinal study. Three overarching questions motivate the research. Does family climate affect the development of a shared vision for the family enterprise? Does shared vision predict the effectiveness of next-generation family firm leaders? Is a shared vision related to the degree to which next-generation family leaders are positively engaged with their work in the family business?

A quantitative study informed by leadership and family systems theories was designed to answer these questions. The sample for the study included 100 next-generation family leaders of privately-owned family businesses and 350 family and non-family members of their firms familiar with their leadership behaviors. The results supported hypothesized relationships between two dimensions of family climate and shared vision, but contradicted the expected outcome for a third. Shared vision turned out to be a strong predictor of next-generation leadership effectiveness, with a smaller but still significant impact on the degree to which next-generation family leaders were engaged with their work. While the survey design and correlational method employed for the study cannot provide enough evidence to support a definitive conclusion because the underlying mechanism is not known, the results support the idea that shared vision serves as a mediator through which family climate influences next-generation leadership effectiveness and engagement with work.

The paper is organized as follows. First, a brief review of key theories that informed the development of hypotheses and a conceptual structural equation model is provided. A detailed description of the research methods and results of data analysis follow. The paper concludes with a discussion that includes interpretations of results, implications for family business practice, suggestions for future research, and limitations of the study.

LEADERSHIP EFFECTIVENESS

Leadership is a complex and multi-dimensional concept. In his meta-analysis of leadership studies, Wren (2006) identified no less than 53 approaches to leadership research, all with their own nuanced definitions of effective leadership. Emotional and social intelligence, full-range leadership, authentic leadership, and leader-member exchange are several of the leading contemporary theories of leadership.

Emotional and social intelligence refers to leadership behaviors that reflect self-awareness, self-management, social awareness, and relationship management (Goleman et al., 2002). Studies have shown that as much as 90% of a leader's effectiveness is determined by his/her emotional and social intelligence (Cherniss and Adler, 2000).

Full-range leadership theory includes transformational, transactional, and laissez-faire leadership (Bass, 1985; Antonakis et al., 2003). Transformational leadership inspires followers through charisma; a strong commitment to values, beliefs, and mission; the ability to communicate an inspirational vision of the future; intellectual stimulation; and individualized attention to the interests and needs of followers. Transactional leadership motivates follower compliance through promises, praise, and/or rewards; and corrects non-compliance with negative feedback, reproof, threats, and/or disciplinary actions (Bass and Steidlmeier, 1999). Laissez-faire leadership refers to a leader's "active" choice to avoid responsibility, decision-making, and the exercise of authority (Antonakis et al., 2003). While situational in nature, transformational leadership has been found to be generally more effective than transactional leadership, with laissez-faire leadership the least effective of the three (Antonakis et al., 2003).

Bass and Steidlmeier (1999) add a moral dimension to full-range leadership characteristics in defining "authentic leadership," which seeks to differentiate charismatic leaders who produce positive results for the organizations they lead from those who use the same characteristics to manipulate followers for their own selfish ambitions. Avolio et al. (2009) provide a more comprehensive definition of authentic leadership that includes objectively reviewing relevant data and considering multiple perspectives before making a decision, self-regulated behavior guided by an internal moral compass, relational transparency characterized by open communication of one's true thoughts; internal control of inappropriate expressions of emotion; and self-awareness. Research has demonstrated that leaders who exhibit authentic leadership behavior are perceived as more effective than those who do not (Avolio and Gardner, 2005).

The leader-member exchange (LMX) theory of leadership takes a relationship-based approach in defining leadership. While the other leadership theories outlined above focus exclusively on leaders, LMX theory also considers followers and the nature of the relationships between leaders and followers. The central concept in LMX is that effective leadership processes are the result of mature relationships between leaders and followers who partner to pursue common goals (Graen and Uhl-Bien, 1995).

While a comprehensive definition of leadership remains elusive, the major leadership theories suggest that true leadership talent involves the ability to persuade followers to suspend their purely selfish interests to support and work toward a common good (Hogan and Kaiser, 2005). Boyatzis and McKee (2005) refer to leaders with that kind of talent as resonant leaders, those who have demonstrated that they are able to blend financial, human, intellectual, environmental, and social capital to create positive results and competitive advantage for their organizations.

The literature demonstrates that effective leadership is central to the success of any business, family-controlled or not. In his study of the highly successful turnaround companies featured in *Good to Great*, Collins (2001) discovered that those companies selected a new CEO first, then adopted a winning strategy developed and executed by that CEO and his/her team, rather than the other way around. Collins refers to these highly effective leaders as "Level 5" leaders, who in addition to exhibiting the resonant leadership characteristics identified by Boyatzis and McKee (2005), were modest, humble, and phenomenally persistent. Noted family business expert Ward (1997) emphasizes how important effective leadership is to the sustainable growth of a family enterprise, which often determines a family firm's ability to survive through multiple generations of family ownership. Leadership effectiveness is one of two dependent variables in the study's conceptual model, and the one of primary interest.

ENGAGEMENT WITH WORK

Work engagement is the positive opposite of burnout and has been identified in studies on positive psychology as a central element of well-being at work (Seppälä et al., 2009). It can be described as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli et al., 2002). Next-generation leaders who are more committed to the business, a key to its long-term survival and success (Miller and Breton-Miller, 2006), are more likely to demonstrate behavior above and beyond what is required by their job description (Dawson et al., 2013), demonstrating a high level of engagement with their work in the family firm. This study explores the effect of shared vision on next-generation engagement with work, our second dependent variable.

SHARED VISION

Leadership and family business literature suggests that a true shared vision drives strategy, gives meaning to work, and creates commitment at all levels of an organization (Boyatzis and McKee, 2005; Boyatzis, 2006). It is particularly important in family businesses as without shared vision commitment to continued ownership wanes (Ward, 1988, 2004, 2011; Davis et al., 1997; Poza, 2013). The ability to articulate and inspire commitment to a shared vision is often cited as a key characteristic of effective leaders (Bass, 1985; Goleman et al., 2002; Boyatzis and McKee, 2005; Boyatzis, 2008; Boyatzis and Soler, 2012).

In an earlier quantitative study (Miller, 2014; "Developing next-generation leadership talent in family businesses: Family climate matters"), the author was surprised to find no significant relationship between overall family business climate and next-generation leadership effectiveness. In that study, business climate was assessed using three scales developed by Boyatzis and Akrivou (2006); Boyatzis (2008, 2013) that measure vision, compassion, and overall positive mood. This study is designed to tease out the specific effect of shared vision, excluding the compassion and overall positive mood dimensions of business climate. The following hypotheses follow from the literature's assertions that shared vision is a characteristic of effective leaders and that it gives meaning to one's work:

H1: Having a shared vision for the family business predicts the leadership effectiveness of next-generation family leaders.

H2: Having a shared vision for the family business has a positive effect on the degree to which next-generation family leaders are engaged with their work in the family firm.

FAMILY CLIMATE

Family climate has a strong effect on family business culture and performance (Björnberg and Nicholson, 2007), and is what makes family-owned businesses different from public and non-family privately owned firms. Björnberg and Nicholson (2007) identify three broad categories that define family climate, each of which have two dimensions: (a) family intergenerational style, (b) family cohesion, and (c) family process.

Family intergenerational style refers to the degree of authority exercised by the senior generation and to how much time and attention they devote to the younger generation. In a family business context, it refers to the intergenerational style of all senior family members who exercise authority in the family firm, which may include family members other than parents. An intergenerational style that is over-controlling and oppressive may meet with resistance and rebellion from younger family members (Walsh, 2003) creating conflict that inhibits the development of a shared vision for the family business and the next generation's ability to differentiate themselves and develop leadership skills (Kerr, 1988). On the other hand, an intergenerational style that involves paying adequate attention to the developmental needs of the younger generation fosters healthy family functioning (Björnberg and Nicholson, 2007).

Family cohesion is comprised of cognitive and emotional cohesion. Cognitive cohesion refers to the degree to which family members share worldviews, norms, and values. Cognitive cohesion influences the leadership culture of the family firm and can be used to create competitive advantage through what Habbershon and Williams (1999) identify as the "familiness" of a family enterprise. Emotional cohesion refers to the emotional bonds among family members. Emotional cohesion contributes to positive family relationships, but too much emotional cohesion can become dysfunctional, leading to a family system that is rigid and enmeshed (Beavers and Voeller, 1983). Lack of sufficient cognitive or emotional cohesion often leads to destructive conflicts that put the functioning of the family and the business at risk.

Family process refers to the degree of open communication and adaptability in the family system. Open communication is viewed by family business researchers as a central characteristic of well-functioning family and family business systems (Davis et al., 1997; Ward, 2004; Poza, 2013). Adaptability is critical to the family's ability to make strategic shifts in the business in response to changes in the external environment (Walsh, 2003). Research on conflict style in family firms demonstrates the importance of how families face challenges when working and living together, particularly when those challenges create strain on family relationships (Danes et al., 2000). A family's "conflict style" is influenced by how its members communicate and its receptivity and adaptability to change (Björnberg and Nicholson, 2007).

Björnberg and Nicholson's (2007) components of family climate interact to influence how well the family system functions. Three of the six dimensions; cognitive cohesion, intergenerational authority, and open communication seem most likely to influence the family's ability to develop a shared vision for the family business.

The family business literature is consistent in suggesting a strong link between shared family values and a vision for the family business (Davis et al., 1997; Ward, 1997, 2004, 2011; Poza, 2013). As cognitive cohesion is defined by the degree to which family members share values and norms, it is hypothesized that:

H3: Cognitive cohesion has a positive effect on the degree to which there is a shared vision for the family business.

Senior generation leaders who exercise unquestioned authority create a negative climate that can wreak havoc in an organization (Kets de Vries, 1985), derail the succession process

(Morris et al., 1997; Breton-Miller et al., 2004), and make it more difficult to create commitment to the future direction of the business (Kets de Vries, 1994; Björnberg and Nicholson, 2007). In addition, previous research has found that intergenerational authority is orthogonal to the other two family climate scales used in this study (Björnberg and Nicholson, 2007). Consequently, it is hypothesized that:

H4: Intergenerational authority has a negative effect on the degree to which there is a shared vision for the family business.

Family business scholars are consistent in maintaining that open and transparent communication is an essential element of a well-functioning family business system (Davis et al., 1997; Ward, 2004; Poza, 2013). Open and respectful communication builds trust and facilitates decision making, so it is logical to hypothesize that:

H5: Open communication has a positive effect on the degree to which there is a shared vision for the family business.

The study's theoretical framework and hypothesized relationships are depicted in the conceptual model shown in **Figure 1**.

METHODS

MULTI-RATER CROSS SECTIONAL DESIGN

A quantitative survey was designed to capture the perceptions of a cross section of family and non-family members in each family business that participated in the study. Next-generation family business leaders were defined as leaders at any management level who are members of any generation of the business-owning family other than the generation that founded the business. Each next-generation leader who participated filled out a survey and asked three to seven people familiar with his/her leadership practices to fill out a similar survey.

Next-generation leaders in each firm answered questions about the climate of the business-owning family, the degree to which there is a shared vision for the future of the family business, and the nature of their engagement with their work in the family firm. Other family members and non-family members working in the family firm (the "multi-raters") answered the same set of questions about shared vision and rated the next-generation leader's leadership effectiveness. Multi-raters who were members of the business-owning family also responded to the set of questions about family climate.

The multi-rater, 360° feature is a key element of the study design as it increases the accuracy of results and avoids common method bias. Multi-rater perceptions were used to measure the leadership effectiveness of the next-generation leaders in the study, as self-ratings are often unreliable and inflated (Taylor, 2014). In addition, using different sources to assess key measures is the best *ex ante* procedure to avoid potential common method variance (Podsakoff et al., 2003).

MEASUREMENT DEVELOPMENT

Scales used to measure each construct in the model and their sources are described below. Five-point Likert-type scales were used as recent research indicates that five-point scales yield higher quality results than seven- or eleven-point scales for agree-disagree rating scales (Revilla et al., 2014). A complete list of survey items is included in the **Appendix**.

FAMILY CLIMATE

Family climate, the nature of family relationships and whole family functioning, was measured using 24 items from three of the Family Climate Scales (Björnberg and Nicholson, 2007). These scales were chosen as they are specifically designed to measure family climate in a family business context. Three dimensions of family climate were measured: (1) Open communication, the degree to which the family openly and frankly communicates; including listening, showing interest in each other's opinions, and dealing forthrightly with issues of concern; (2) Cognitive cohesion, the degree to which family members share norms and values, including attitudes, interests, and beliefs; and (3) Intergenerational authority, the degree to which the senior generation sets the parameters of family conduct, including exercising power, setting the rules, and allowing the younger generation to participate in decision making. In their creation of the scales

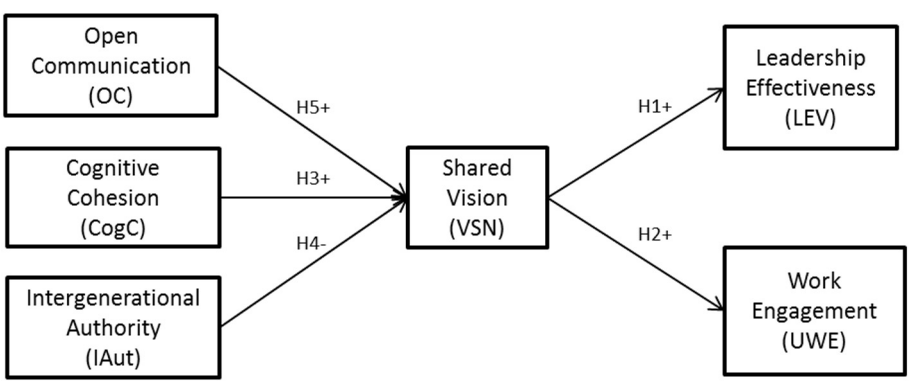

FIGURE 1 | Conceptual Model.

Björnberg and Nicholson (2007) achieved Cronbach's alphas of 0.85 for open communication, 0.90 for cognitive cohesion, and 0.75 for intergenerational authority. A combined version of the scales was used in Björnberg and Nicholson's (2012) study of next generation emotional ownership in the family firm and achieved a Cronbach's alpha of 0.85. Family climate items were measured with a five-point Likert-type scale ranging from "strongly disagree" to "strongly agree."

FAMILY BUSINESS SHARED VISION

Family business shared vision was measured using eight items from the Positive and Negative Emotional Attractor (PNEA) scale (Boyatzis, 2006, 2008, 2013). Vision is defined as the degree to which management has articulated a clear, inspiring vision for the future of the business that builds on the organization's strengths. The PNEA scale is a relatively new measure that has been used in a number of doctoral dissertations. The shared vision scale achieved Cronbach's alphas of 0.93, 0.91, and 0.86 respectively in three recent doctoral qualifying papers at the Weatherhead School of Management, Case Western Reserve University (Clayton, 2009; Mahon, 2011; Neff, 2011) PNEA items were measured on a five-point Likert-type scale ranging from "strongly disagree" to "strongly agree."

LEADERSHIP EFFECTIVENESS

Leadership effectiveness, the extent to which the next-generation leader is perceived to be effective, was measured using five items from the Leadership Effectiveness scale (Denison et al., 1995): (1) Performance standards; (2) Comparison to peers; (3) Performance as a role model; (4) Overall leadership success; and (5) Overall effectiveness as a leader. The scale achieved an alpha of 0.83 in Denison et al. (1995) article on behavioral complexity in managerial leadership. Leadership effectiveness items were measured using a five-point scale with different labeling for the extremes of each item measure.

WORK ENGAGEMENT

Work engagement, a positive, fulfilling, work-related state of mind that is the positive opposite of burnout, was measured using the nine-item version of the Utrecht Work Engagement Scale (Schaufeli and Bakker, 2003). The Utrecht Work Engagement Scale measures three dimensions of work engagement: (1) Vigor, the degree to which the next-generation leader invests energy, effort, and persistence in their work; (2) Dedication, the extent to which the next-generation leader experiences a sense of significance, enthusiasm, inspiration, pride, and challenge in their work; and (3) Absorption, the degree to which the next-generation leader fully concentrates on and becomes deeply engrossed in their work. In an analysis of the construct validity of the nine-item Utrecht Work Engagement Scale using data from five studies (Seppälä et al., 2009), Cronbach's alphas ranged from 0.81 to 0.85 for vigor, 0.83 to 0.87 for dedication, and 0.75 to 0.83 for absorption. Work engagement items were measured using a five-point Likert-type scale ranging from "never" to "consistently."

PRE-TESTING, DATA COLLECTION, AND SAMPLE

Survey questions were pre-tested using a Q-sort following guidelines suggested by Thomas and Watson (2002). The Q-sort was followed by two pilot tests of the online questionnaire.

Data was collected over a 4-month period from mid-September 2013 to mid- January 2014. Participants were recruited through the primary researcher's personal network of privately-owned family business owners and consultants, university-based family business centers, business trade organizations, and businesses which provide services to family firms.

Approximately 9537 email invitations generated responses from 866 participants for a response rate of 9.1%. Unfinished and incomplete surveys were removed from the database resulting in 567 usable surveys. Because multiple multi-raters were required for each next-generation leader included in the analysis, the data base was further reduced to a matched set of 100 next-generation family leaders and 350 multi-raters for an average of 3.5 multi-raters per next-generation leader. Respondent characteristics are shown in **Table 1** and family business characteristics are shown in **Table 2**.

DATA SCREENING

Total missing data was only 0.1%. Missing values were completely at random and were imputed using the MCMC method in IBM SPSS 22.0.0.0. Several variables exhibited negative skewness and/or kurtosis. Because multivariate analysis assumes normality of data, skewed variables were transformed by squaring or cubing which cured both skewness and kurtosis issues (Hair et al., 2010). All relationships in the model exhibited homoscedasticity and linearity.

MEASUREMENT MODEL ANALYSIS

Covariance-based structural equation modeling (CB-SEM) was used to analyze the data. CB-SEM is a widely accepted and powerful regression-based technique for testing causal models with multiple constructs. This method was particularly well suited for this study because it allows modeling of abstract concepts reflective of many indicators (observed variables) such as the six constructs and 34 indicators in the conceptual model. In addition, CB-SEM enables the estimation of causal networks including direct and indirect effects simultaneously (Lowry and Gaskin, 2014), a feature that proved to be important in demonstrating the indirect effects of two of our family climate scales on next-generation leadership effectiveness and engagement with work. IBM AMOS 22.0.0, the most current version of the software at the time of the study, was used to create the measurement model and assess relationships among the constructs.

An exploratory factor analysis (EFA) was conducted first and resulted in a six-factor solution. All indicators loaded cleanly on their respective factors, with values exceeding the 0.50 threshold recommended by Hair et al. (2010) as necessary for practical significance and indicator reliability. The EFA was followed by a confirmatory factor analysis (CFA), which demonstrated good model fit. CMIN/DF was 1.31, less than the maximum threshold of 3.0 recommended by Carmines and McIver (1981).

Table 1 | Respondent characteristics.

	Matched sample			
	NGLs		MRs	
	Number	Percent (%)	Number	Percent (%)
Sample size (n)	100		350	
GENDER				
Male	81	81	259	74
Female	19	19	88	25
Missing	0	0	3	1
AGE				
18–25	1	1	11	3
26–35	28	28	55	16
36–45	23	23	84	24
46–55	31	31	97	28
56–65	17	17	84	24
66+	0	0	16	5
Missing	0	0	3	1
GENERATION				
G1	0	0		
G2	41	41		
G3	32	32		
G4	17	17		
G5+	8	8		
Missing	2	2		
EDUCATION				
Less than high school	0	0	0	0
High school/GED	2	2	27	8
Some college	6	6	53	15
2-year college degree	2	2	28	8
4-year college degree	58	58	154	44
Master's degree	27	27	77	22
Doctoral degree (PhD, EdD)	2	2	0	0
Professional degree (JD, MD)	3	3	11	3
Missing	0	0	0	0
POSITION IN FAMILY BUSINESS				
CEO	51	51	17	5
Other senior-level management	34	34	190	54
Middle-level management	10	10	86	25
Entry-level management	5	5	16	5
Non-management position	0	0	39	11
Missing	0	0	2	1
FAMILY MEMBERSHIP				
Family member			61	17
Non-family member			288	82
Missing			1	0
NGL RELATIONSHIP				
Immediate supervisor			22	6
Senior leader			36	10
Direct report			144	41
Other follower			45	13
Peer			44	13
Other relationship			51	15
Missing			8	2

Table 2 | Family business characteristics.

Family business characteristics	Matched sample	
Sample Size (n)	100	
REVENUE		
Under $25 million	29	29%
$25–$50 million	9	9%
$51–$100 million	15	15%
$101–$250 million	26	26%
$251–$500 million	9	9%
$500 million+	11	11%
Missing	1	1%
OWNERSHIP		
Privately owned	99	99%
Public, but family controlled	0	0%
Public	0	0%
Other form of ownership	1	1%
Missing	0	0%

CFI was 0.93, RMSEA was 0.06, and PCLOSE was 0.22, all of which exceed the standards recommended by Hair et al. (2010) for a model with a sample size less than 250 and more than 30 variables. See **Table 3** for complete measurement model results.

Composite reliability and Cronbach's alpha were above the recommended threshold of 0.70 for each of the latent constructs in the model, demonstrating their reliability. Average variance extracted (AVE), which demonstrates convergent validity, was above the recommended threshold of 0.50 (Hair et al., 2010) for all constructs. Tests recommended by Fornell and Larcker (1981) were used to demonstrate the discriminant validly of the constructs. Average variance extracted for each construct was greater than its maximum shared variance (MSV) with any other construct. Discriminant validity was further demonstrated by comparing the square root of AVE for each construct with its highest correlation with any other construct as shown in the correlations matrix in **Table 4**. In all cases, the square roots of the AVEs were higher than their correlations with any other construct.

RESULTS

COLLINEARITY ASSESSMENT OF PREDICTOR VARIABLES

Before testing for the significance of path coefficients in the model, the predicator variables were tested for collinearity. Collinearity among predictor variables inflates the standard errors of estimates rendering statistical tests and punctual estimates meaningless. Tolerance and its inverse, the variance inflation factor (VIF), measure collinearity. Tolerance is simply the amount of variance in an independent variable that is not explained by the other independent predictor variables. Tolerance values below 0.20 and VIF values above 5 indicate potential collinearity problems (Hair et al., 2013). IBM SPSS Statistics was used to perform a collinearity analysis on the predictor variables in the model, all of which demonstrated tolerance and VIF values well within acceptable limits (see **Table 5**).

Table 3 | Measurement model results.

Constructs/Items	Mean	Std. Dev.	Std. regression weights*	Cronbach's Alpha	Composite reliability	Average variance extracted	Maximum shared variance
Criteria**			>0.50	>0.70	>0.70	>0.50	<AVE
Cognitive cohesion	14.91	4.17		0.86	0.86	0.56	0.50
cog_1_sq	13.13	5.19	0.64				
cog_3_sq	14.49	4.59	0.76				
cog_4_sq	14.34	5.11	0.85				
cog_5_sq	15.69	5.46	0.78				
cog_8_sq	16.91	5.69	0.70				
Intergenerational authority	2.59	0.77		0.82	0.83	0.63	0.22
iaut_3	2.64	0.84	0.70				
iaut_4	2.84	0.97	0.75				
iaut_7	2.30	0.88	0.92				
Leadership effectiveness	14.42	3.58		0.90	0.95	0.80	0.28
lev_1_sq	17.07	4.61	0.90				
lev_2	4.05	0.62	0.85				
lev_3_sq	17.27	5.08	0.89				
lev_4_sq	16.93	4.45	0.90				
lev_5_sq	16.81	4.63	0.94				
Open communication	9.42	2.99		0.81	0.89	0.54	0.50
oc_1	3.56	1.05	0.68				
oc_2_sq	14.84	6.35	0.60				
oc_3	3.33	1.00	0.61				
oc_4_sq	13.23	5.81	0.69				
oc_6_sq	14.11	5.10	0.85				
oc_7_sq	13.38	5.65	0.88				
oc_8	3.50	0.78	0.77				
Work engagement	4.16	0.58		0.88	0.88	0.50	0.13
uwe_1	3.73	0.76	0.74				
uwe_2	3.96	0.78	0.71				
uwe_3	4.33	0.73	0.84				
uwe_4	4.25	0.81	0.79				
uwe_5	4.32	0.78	0.67				
uwe_6	4.35	0.69	0.53				
uwe_8	4.21	0.78	0.65				
Vision	4.06	0.42		0.92	0.92	0.63	0.28
vsn_1	4.10	0.50	0.76				
vsn_2	4.16	0.45	0.75				
vsn_3	4.21	0.48	0.58				
vsn_4	4.03	0.51	0.87				
vsn_6	4.06	0.52	0.88				
vsn_7	3.95	0.58	0.90				
vsn_8	3.90	0.46	0.78				
MODEL FIT							
Statistic		**Threshold**		**Results**		**References**	
Chi square				657.82			
Degrees of freedom				504			
CMIN/DF		<3.0		1.31		Carmines and McIver, 1981	
CFI		>0.92		0.93		Hair et al., 2010	
RMSEA		<0.07		0.06		Hair et al., 2010	
PCLOSE		>0.05		0.22		Hair et al., 2010	

*$p < 0.001$ for all standardized regression weights; **Hair et al. (2010).*

COEFFICIENTS OF DETERMINATION

Coefficients of determination (R^2) values for each of the three endogenous latent constructs in the model are shown in the final model in **Figure 2**. R^2 values measure the amount of variance in the construct explained by the exogenous variables in the model. R^2 was 0.34 for vision, 0.29 for next-generation leadership effectiveness, and 0.13 for next-generation work engagement. While there are no universal standards for acceptable R^2 values, these values of are practical significance for the purposes of this study (Hair et al., 2013).

SIGNIFICANCE OF PATH COEFFICIENTS

The size and significance of the path coefficients of hypothesized relationships in the structural equation model were determined by calculating estimates in AMOS. Results are summarized in **Table 6** and discussed for each hypothesized relationship below.

Table 4 | Correlations matrix.

	UWE	OC	IAut	VSN	LEV	CogC
UWE	0.71					
OC	0.33	0.73				
IAut	−0.36	−0.28	0.79			
VSN	0.34	0.33	−0.47	0.80		
LEV	0.31	0.30	−0.30	0.53	0.89	
CogC	0.14	0.71	0.00	0.07	0.16	0.75

Square root of AVEs on the diagonals. UWE, engagement with work; OC, open communication; IAut, intergenerational authority; VSN, shared vision; LEV, leadership effectiveness; CogC, cognitive cohesion.

Table 5 | Collinearity assessment.

Variable	Tolerance	VIF
Cognitive cohesion	0.61	1.64
Intergenerational authority	0.76	1.31
Open communication	0.54	1.85
Shared vision	0.74	1.36

EFFECT SIZE f^2

An additional step in evaluating the predictive power of a structural equation model is to calculate the relative contribution of each exogenous variable in the model to the coefficient of determination (R^2 value) of the endogenous variable it predicts. The formula for calculating f^2 values is as follows:

$$f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}},$$

where R^2 included and R^2 excluded are the R^2 values of an endogenous latent variable when a selected exogenous latent variable is included in or excluded from the model (Hair et al., 2013). Cohen (1988) suggests that f^2 values of 0.02, 0.15, and 0.35 respectively, represent small, medium, and large effects. Results of tests for f^2 effect sizes are displayed in **Table 7** and discussed for each hypothesized relationship below.

RESULTS OF HYPOTHESIS TESTING

H1: Having a shared vision for the family business predicts the leadership effectiveness of next-generation family leaders. As expected, shared vision for the family business strongly predicted the leadership effectiveness of the next-generational family leaders in our study (0.53, $p < 0.001$), supporting H1. The f^2 effect (0.41) was large, demonstrating the importance of shared vision in determining the variance in next-generation leadership effectiveness in the model. As 51% of the next-generation leaders in our study were CEOs and another 34% held other senior leadership positions, this result underscores the degree to which the ability to articulate and communicate a shared organizational vision is associated with the perceived leadership effectiveness of senior leaders. What is particularly important in this study is the indirect influence of family climate on next-generation leader

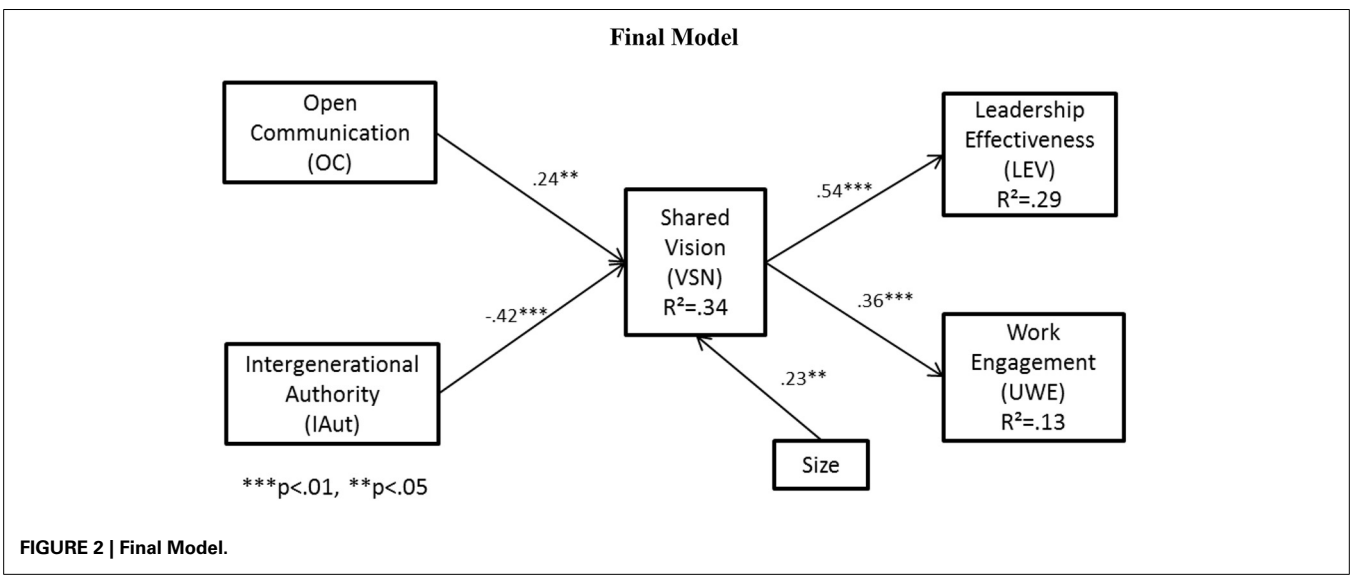

FIGURE 2 | Final Model.

effectiveness through shared vision, examined in greater detail in the Discussion section of the paper.

H2: Having a shared vision for the family business has a positive effect on the degree to which next-generation family leaders are engaged with their work in the family firm. H2 was also supported as shared vision demonstrated a meaningful effect (0.36, $p < 0.01$) on the degree to which next-generation leaders reported positive engagement with their work. The f^2 effect (0.15) was medium. This result demonstrates that having a shared vision for the family business contributes to the sense of fulfillment, energy, and enthusiasm experienced by the next-generation leaders in our study.

H3: Cognitive cohesion has a positive effect on the degree to which there is a shared vision for the family business. The big surprise in the results was that cognitive cohesion had no effect (−0.20, $p > 0.10$) on the degree to which the family firms in our study had shared visions. This result contradicts the link between shared family values and a shared vision for the family business almost universally suggested in the family business literature. Because no effect was an unexpected result, the statistical power of the model for shared vision was calculated and found to be 0.99, well above the recommended minimum threshold of 0.80 (Ellis, 2010), thus providing confidence in the result. Possible explanations for this unexpected finding are advanced in the Discussion section below.

H4: Intergenerational authority has a negative effect on the degree to which there is a shared vision for the family business. H4 was supported as intergenerational authority had a substantial negative effect (−0.37, $p < 0.01$) on the degree to which the family firms in the study had shared visions. The f^2 effect (0.24) was medium. This finding is of particular importance as it suggests that entrepreneurs who have employed an authoritarian, take-charge leadership style in overcoming the challenges of founding and growing a successful business may find that the same leadership behaviors work against them in preparing the business and the family for a smooth transition to the next generation.

H5: Open communication has a positive effect on the degree to which there is a shared vision for the family business. H5 was also supported as open communication demonstrated a significant positive effect (0.40, $p < 0.05$) on shared vision. The f^2 effect (0.06) was small, which is meaningful although not as strong as expected. The results suggest that open and transparent communication in the family facilitates the development and adoption of a shared vision for the family firm, confirming what is often suggested by family business experts as a fundamental characteristic of family firms that survive through multiple generations of family ownership.

A summary of hypothesis test results is provided in **Table 8**. The structural equation model was trimmed of the insignificant effect of cognitive cohesion on shared vision following hypothesis testing to produce the final model shown in **Figure 2**. Final path coefficient estimates and significance levels are shown in **Figure 2** and **Table 9**.

TOTAL EFFECTS

The total effects (direct and indirect) of exogenous variables on endogenous variables provide the greatest insight (Hair et al., 2013). The structural equation model test results demonstrated that there were significant positive indirect effects of open communication on next-generation leadership effectiveness (0.13, $p < 0.05$) and engagement with work (0.09, $p < 0.05$)

Table 6 | Significance testing results of structural equation model path coefficients.

Path	Standardized coefficient	Standard error	Critical ratio	*p*-value
CogC -> VSN	−0.20	0.02	−1.27	0.203
IAut -> VSN	−0.37	0.05	−3.26	0.001
OC -> VSN	0.40	0.11	2.34	0.019
VSN -> LEV	0.53	1.14	5.06	***
VSN -> UWE	0.36	0.17	3.19	0.001
Size -> VSN	0.24	0.02	2.66	0.008

****p < 0.001. UWE, engagement with work; OC, open communication; IAut, intergenerational authority; VSN, shared vision; LEV, leadership effectiveness; CogC, cognitive cohesion.*

Table 7 | f^2 Effects.

Path	Standardized coefficient	f^2 Effect value	f^2 Effect size*
IAut -> VSN	−0.42	0.24	Medium
OC -> VSN	0.24	0.06	Small
VSN -> LEV	0.54	0.41	Large
VSN -> UWE	0.36	0.15	Medium

**(Cohen, 1988), UWE, engagement with work; OC, open communication; IAut, intergenerational authority; VSN, shared vision; LEV, leadership effectiveness.*

Table 8 | Summary of hypothesis test results.

Hypothesis	Coefficient	Support for hypothesis
H1: Having a shared vision for the family business predicts the leadership effectiveness of next-generation family leaders.	0.53***	Yes
H2: Having a shared vision for the family business has a positive effect on the degree to which next-generation family leaders are engaged with their work in the family firm.	0.36***	Yes
H3: Cognitive cohesion has a positive effect on the degree to which there is a shared vision for the family business.	−0.20 (ns)	No
H4: Intergenerational authority has a negative effect on the degree to which there is a shared vision for the family business.	−0.37***	Yes
H5: Open communication has a positive effect on the degree to which there is a shared vision for the family business.	0.40***	Yes

****p < 0.01, ns, non-significant.*

Table 9 | Significance testing results of structural equation model total effects.

Path	Standardized coefficient	*p*-value
IAut -> LEV	−0.22	0.004
IAut -> UWE	−0.15	0.006
IAut -> VSN	−0.42	0.004
OC -> LEV	0.13	0.033
OC -> UWE	0.09	0.037
OC -> VSN	0.24	0.033
Size -> LEV	0.12	0.008
Size -> UWE	0.08	0.012
Size -> VSN	0.23	0.008
VSN -> LEV	0.54	0.004
VSN -> UWE	0.36	0.007

UWE, engagement with work; OC, open communication; IAut, intergenerational authority; VSN, shared vision; LEV, leadership effectiveness.

through the mediating variable shared vision. There were also indirect negative effects of intergenerational authority on leadership effectiveness (-0.22, $p < 0.01$) and engagement with work (-0.15, $p < 0.01$), also through shared vision. These are two of the more important findings in the study as they demonstrate that family climate has meaningful effects on two of the variables most closely associated with multi-generational family business success, shared vision and capable next-generation leadership. Total effects for all significant relationships in the model are reported in **Table 9**.

CONTROLS

Size of family business, as measured by revenue, and age of next-generation leader were included as controls. Size was significantly related to shared vision (0.23, $p < 0.01$) but not with any of the other variables in the model. Age had no significant relationships with any of the variables in the model.

DISCUSSION

The study explored the relationships among shared vision, family climate, and next-generation leadership effectiveness and engagement with work; key factors associated with the multi-generational success of family-owned enterprises. Interpretations of the major findings, including implications for practice, suggestions for future research, and limitations of the study follow.

SHARED VISION PREDICTS NEXT-GENERATION LEADERSHIP EFFECTIVENESS

The results demonstrate that the presence of a shared vision for the family business strongly predicts the effectiveness of next-generation family leaders. There are two important implications of this finding. As most of the next-generation leaders in the study were CEOs or other members of senior management, it suggests that next-generation family leaders who are skilled at creating and articulating a shared vision for the family firm are more likely to be perceived as effective leaders by family and non-family members working in the business. It also suggests that business-owning families who take the time to do the hard work of creating a shared vision for the family business increase the chances of developing next-generation family leaders who exhibit effective leadership behaviors. It is reasonable to infer that if senior generation family members model cooperative behavior in creating a shared vision for the family business, next-generation family members are more likely to value and learn that skill, which in turn affects their own leadership behavior and effectiveness. So it turns out that two of the top three factors associated with family business longevity (Ward, 1997) are strongly related and can be simultaneously addressed by creating a shared vision for the family business.

This finding provides some insight into the surprising results of an earlier study that showed no effect of a comprehensive measure of business climate that included shared vision, compassion, and overall positive mood on next-generation leadership effectiveness (Miller, 2014). That more comprehensive measure has been shown to be related to leadership effectiveness in other contexts (Boyatzis and McKee, 2005). Perhaps in a family business, the presence of compassion and overall positive mood in the business are attributed to the business-owning family or founder of the family business, rather than next-generation leaders. While the results of this study partially resolve the conundrum of the earlier finding, further exploration in future studies of family businesses and their leaders is warranted.

SHARED VISION POSITIVELY AFFECTS NEXT-GENERATION LEADER ENGAGEMENT WITH WORK

Although not as strong as the relationship with leadership effectiveness, shared vision also had a meaningful effect on the degree to which next-generation leaders reported themselves to be fulfilled and energized by their work in the family firm. This was the expected result as leadership literature is consistent in its assertion that shared vision creates commitment and provides meaning and purpose to one's work in an organization (Kantabutra, 1992; Boyatzis and McKee, 2005; O'Connell et al., 2011). It may be even more important in a family business context as socio-emotional goals are often more important than financial goals (Gómez-Mejía et al., 2007).

This suggests that business-owning families would be wise to create a clear vision for the business that is meaningful to next-generation family leaders if they want to encourage them to pursue careers in the family enterprise. It further suggests that next-generation family leaders have some control over their own destiny in the family firm. If they work with other family members to create a shared vision for the business that is also personally inspiring, they are more likely to experience a fulfilling career. On the other hand, if this is not possible, they may find a career outside of the family firm to be more rewarding.

FAMILY CLIMATE AFFECTS SHARED VISION FOR THE FAMILY BUSINESS

While shared vision has been shown to be important to organizational outcomes in other contexts, this study makes an important contribution to the literature by demonstrating how the climate of the business-owning family affects the degree to which a shared vision is present in a family-owned enterprise, and as a result, the

leadership effectiveness and work engagement of next-generation family leaders. The effects of open communication, intergenerational authority, and cognitive cohesion, three dimensions of family climate hypothesized to be important to the presence of a shared vision were examined.

Open communication is often viewed as the sine qua non of effective family businesses (Davis et al., 1997; Ward, 2004; Carlock and Ward, 2010). This study confirmed its importance in creating a shared vision for the family firm. That is hardly surprising as it is difficult to imagine how a business-owning family could create a shared vision without communicating. Nonetheless, the history of family business is punctuated by highly publicized examples of family firm blow-ups characterized by poor communication among family members (Poza, 2013). This study provides insight into how that can happen, by demonstrating the strong negative effect of intergenerational authority on shared vision. A senior generation that exercises unquestioned authority and makes all the rules puts the firm at significant risk by diminishing the chances that family owners will be able to create a vision for the business to which all are committed. This is quite important as the fiercely independent authoritative leadership style that is common among many entrepreneurs (De Vries, 1977; Kets de Vries, 1985) and may have helped them overcome the enormous challenges of founding or growing a successful business may work against them in preparing the family firm for transition to future generations of family ownership.

The results also show that the positive effect of open communication and negative effect of intergenerational authority extend to next-generation family leaders. Open communication indirectly affects next-generation leader effectiveness (0.13, $p < 0.05$) and engagement with work (0.09, $p < 0.05$) through its effect on vision. Intergenerational authority indirectly affects next-generation leadership effectiveness (-0.22, $p < 0.01$) and engagement with work (-0.15, $p < 0.01$) through its effect on vision. So the nature of the family climate has meaningful effects on both vision and next-generation family leadership, two of the most important predictors of multi-generational family business success.

The surprise in the findings was that there was no effect of cognitive cohesion on shared vision. The family business literature is virtually universal in asserting that shared values among family members (Davis et al., 1997; Ward, 2004, 2011; Carlock and Ward, 2010; Boyatzis and Soler, 2012; Poza, 2013), a strong indicator of cognitive cohesion in the study (0.70, $p < 0.001$), are important to creating a vision for the family firm. One interpretation of this result is that it may be possible for family members to have different personal values and views on issues but still be able to coalesce around a shared vision for the family business. Because open communication had a positive effect on shared vision, perhaps family owners can set aside personal differences to create a shared vision for the family firm if they have effective ways of communicating. Another plausible explanation is that the family members in our study do not view the family business as the vehicle through which personal or family values should be expressed, choosing instead to view family and business as separate domains.

It is also possible that emotional cohesion in the family, which was not included as a construct in the study, is more important than cognitive cohesion in developing a shared vision for the family business. Murray (2002) points out that the marriage of the rational and the emotional is a unique characteristic of family businesses. In their work on family climate, Björnberg Nicholson assert that "emotional ownership" is important to the development of a shared vision for the family business (Björnberg and Nicholson, 2012) and to the commitment of next-generation family members to the family enterprise. While this study's finding of a lack of effect of cognitive cohesion on shared vision is important, additional research to test the effects of cognitive as well as emotional cohesion on shared vision in family firms is suggested.

What seems clear for practitioners is that creating processes like regular family meetings to facilitate open communication among family members may enhance the chances of multi-generational survival for family firms through positive effects on shared vision and next-generation leadership. The message for the successful senior-generation family entrepreneur is that learning and practicing communication skills with family members may make it more likely that the business they have worked so hard to create will continue to prosper beyond their own tenure as leader.

THE SIZE OF THE FAMILY BUSINESS IS RELATED TO THE PRESENCE OF A SHARED VISION

Although included as a control variable, size of the family business turned out to have a meaningful relationship with the presence of a shared vision (0.23, $p < 0.01$). It may be that larger family firms simply have more structures and processes in place to create and communicate a clear vision and strategy for the business. However, the more important implication is that family firms that develop a shared vision are more likely to grow, thus providing support for the widely held tenet that shared vision is important to long-term family business success.

LIMITATIONS

Next-generation leaders represented in the study were self-selected since they voluntarily responded to email invitations to participate, thus they did not comprise a strictly random sample. This introduces the threat of external validity, the ability to generalize results across all family businesses (Shadish et al., 2002), so the results should be viewed with the possibility of that limitation in mind. Next-generation leaders also nominated their own multi-raters introducing the possibility of social desirability in multi-rater responses, a potential threat to construct validity, the ability to generalize causes and effects (Shadish et al., 2002), although this is a risk inherent to most 360° leadership surveys. Nonetheless, there was sufficient variation in multi-rater evaluations to provide confidence in the reliability of our results. As with most studies of this nature, the constructs were measured at a specific point in time. Concepts like shared vision and leadership effectiveness develop over time, so theoretically a longitudinal study would be ideal. However, there is enough variation in the age of the next-generation leaders who participated and in the generational stage of ownership of their family firms to provide confidence in the reliability of the findings.

CONCLUSION

The study demonstrates that a shared vision for the family business strongly predicts the leadership effectiveness of next-generation family leaders and affects the degree to which they are positively engaged with their work in the family firm. The findings also show that the climate of the business-owning family significantly influences the creation of a shared vision for the family firm, and as a result, the development of next-generation leadership talent. Thus, three of the factors most closely associated with multigenerational family business longevity are meaningfully related. The implications for family business owners is that they would be wise to spend as much time fostering a positive family climate as they do on creating a successful business strategy if their goal is to pass the business from one generation of family owners to the next.

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 21 September 2014; accepted: 03 November 2014; published online: 04 December 2014.

*Citation: Miller SP (2014) Next-generation leadership development in family businesses: the critical roles of shared vision and family climate. Front. Psychol. **5**:1335. doi: 10.3389/fpsyg.2014.01335*

This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology.

APPENDIX

SURVEY ITEMS

Item code	
	FAMILY CLIMATE—OPEN COMMUNICATION
oc_1	People don't openly express their opinions (RC)
oc_2	We keep our views pretty much to ourselves (RC)
oc_3	We are polite rather than honest in how we communicate with each other (RC)
oc_4	We regularly talk about things that concern us
oc_5	People are not interested in each other's opinions (RC)
oc_6	We take time to listen to each other
oc_7	We bring issues out in the open, good or bad
oc_8	We are frank with each other
	FAMILY CLIMATE—COGNITIVE COHESION
cogc_1	We have similar views on things
cogc_2	We tend to have widely differing views on most social issues (RC)
cogc_3	We have shared interests and tastes
cogc_4	Our attitudes and beliefs are pretty similar
cogc_5	We do not have much in common (RC)
cogc_6	We think alike
cogc_7	We have radically different perspectives on things (RC)
cogc_8	Our values are very similar
	FAMILY CLIMATE—INTERGENERATIONAL AUTHORITY
iaut_1	The younger generations try to conform with what older generation would want
iaut_2	The wishes of the older generation are obeyed
iaut_3	The authority of the older generation is not questioned
iaut_4	Family members of the older generation set the rules
iaut_5	We make decisions with every person having an equal say, regardless of seniority (RC)
iaut_6	Older and younger members have equal amounts of power (RC)
iaut_7	The word of the older generation is law
iaut_8	Younger generation is encouraged to freely challenge opinions of older generation (RC)
	FAMILY BUSINESS VISION
vsn_1	Management emphasizes a vision for the future
vsn_2	We often discuss possibilities for the future
vsn_3	Our future as an organization will be better than our past
vsn_4	I feel inspired by our vision and mission
vsn_5	We are encouraged by management to and build on our strengths
vsn_6	Our work is focused on our vision or mission
vsn_7	Our purpose as an organization is clear in our vision or mission
vsn_8	Management emphasizes our current strengths
	LEADERSHIP EFFECTIVENESS
lev_1	Meets leadership performance standards
lev_2	Comparison to leadership peers
lev_3	Performance as a role model
lev_4	Overall leadership success
lev_5	Overall effectiveness as a leader
	UTRECHT WORK ENGAGEMENT
uwe_1	At my work, I feel that I am bursting with energy
uwe_2	At my job, I feel strong and vigorous
uwe_3	I am enthusiastic about my job
uwe_4	My job inspires me
uwe_5	When I get up in the morning, I feel like going to work
uwe_6	I feel happy when I am working intensely
uwe_7	I am proud of the work that I do
uwe_8	I am immersed in my work
uwe_9	I get carried away when I'm working

frontiers in Psychology

ORIGINAL RESEARCH
published: 29 May 2015
doi: 10.3389/fpsyg.2015.00625

Shared vision between fathers and daughters in family businesses: the determining factor that transforms daughters into successors

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Family businesses are critical to the United States economy, employing 63% of the workforce and generating 57% of GDP (University of Vermont, 2014). Family business continuity, however, remains elusive as approximately 70% of family businesses do not survive the second generation (Poza, 2013). In order to augment our understanding of how next generation leaders are chosen in family businesses, we examine daughter succession. Using a sample of pairs of family business fathers and daughters and drawing on an earlier study of the dearth of successor daughters in family businesses (Overbeke et al., 2013), we reveal that shared vision between fathers and daughters is central to daughter succession. Self-efficacy and gender norms influence shared vision and when fathers and daughters share a vision for the future of the company, daughters are likely to be transformed into successors.

Keywords: vision, family business, succession, gender, daughters, women, career choice

OPEN ACCESS

Edited by:
Scott N. Taylor, Babson College, USA

Reviewed by:
Vanessa Urch Druskat, University of New Hampshire, USA
Craig Seal, California State University, San Bernardino, USA

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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *10 December 2014*
Accepted: *27 April 2015*
Published: *29 May 2015*

Citation:
Overbeke KK, Bilimoria D and Somers T (2015) Shared vision between fathers and daughters in family businesses: the determining factor that transforms daughters into successors. Front. Psychol. 6:625. doi: 10.3389/fpsyg.2015.00625

Introduction

The ability to transfer tacit and explicit knowledge throughout a successor's childhood has been recognized as a competitive advantage to family businesses (Cabrera-Suarez et al., 2001; Poza et al., 2004). Statistics revealing the dearth of daughter successors, however, suggest that daughters are either unexposed to this knowledge or their knowledge is underutilized. In 1994, only two percent of CEOs in family businesses were female including women who replaced their husbands due to death or illness and women who started their own businesses. While the number of daughters that head family businesses increased in the last decade, reaching 9.5% in 2005 (Vera and Dean, 2005), it remains surprisingly low.

The limited research on daughter succession examines the experience of daughters in family business leadership positions providing evidence of the value daughters bring to the firm (Dumas, 1989, 1990, 1992; Curimbaba, 2002; Vera and Dean, 2005; Lozano et al., 2011), gender barriers that prevent daughters from advancing their efforts in the firm (Barnes, 1988; Dumas, 1989, 1990, 1992; Hollander and Bukowitz, 1990; Iannarelli, 1992; Curimbaba, 2002; Haberman and Danes, 2007; Barrett and Moores, 2009; Jimenez, 2009; Lozano et al., 2011; Overbeke et al., 2013), and the unique benefits daughters derive from working in the firm (Cole, 1997; Vera and Dean, 2005; Haberman and Danes, 2007; Jimenez, 2009; Lozano et al., 2011). These studies amplify our understanding of successor daughters, but they also raise questions about why so few daughters reach leadership levels and the factors that enable the exceptions to become

successors. This is important because the dearth of daughter successors suggests a lack of diversity in the highest levels of family business hierarchies where diversity can be a source of competitive advantage (Bilimoria et al., 2014). The historically poor rate of family business sustainability argues for an investigation into how next generation leaders are chosen and why so few daughters become successors. A meager 30% of family businesses survive from the first generation to the second (Poza, 2013). The other 70% either fail or are sold (Stalk and Foley, 2012). More daughter successors may enhance the odds of family business continuity.

The purpose of the present study is to examine drivers and barriers to daughter succession. We extend the results of our previous qualitative study of the dearth of daughter successors in family businesses (Overbeke et al., 2013) which found that gender norms, or prevailing expectations of men and women in society, blind daughters to possibilities of succession, resulting in a small supply of interested and qualified daughters who can successfully assume leadership roles. This earlier study proposed that daughters who become successors are differentiated by their confidence in their business skills, perceptions of support from influential family members, and personal visions (Boyatzis and Akrivou, 2006) that embrace family business leadership. Building on these findings, we test an empirical model based on gender norms, self-efficacy, and vision that predicts daughter succession in family owned businesses. Using a field survey of pairs of family business fathers and daughters, we examined the mediating role of vision between beliefs about daughters' efficacy as leaders of family businesses, daughters' and fathers' gender role orientations, daughters' and fathers' perceptions of sexism in society, and the outcome variable, daughter succession or intention to be a successor.

Theory and Hypotheses

In the first hypothesized model shown in **Figure 1A**, we propose that self-efficacy, sexism, and expressive and instrumental gender role orientations, are contributors to daughter succession through the mediator, Daughter Succession Vision. Since fathers are typically gatekeepers to succession, we further compare fathers' perceptions of daughters as family business leaders or successors. Accordingly, in **Figure 1B**, we hypothesize that perceived daughter efficacy (fathers' perceptions of daughters' efficacy), sexism, and expressive and instrumental gender role orientations influence perceived daughter vision (fathers' perceptions of daughters' succession vision, i.e., mediator), which in turn influences the outcome of the vision (i.e., dependent variable–daughter succession). Next, we discuss the key constructs and develop our hypotheses.

The Roles of Self–efficacy and Perceived Daughter Efficacy

Social cognitive theory proposes that personal evaluative processes are the foundations of human agency. Unless people believe they can achieve desired goals, they have little incentive to exert necessary effort or persevere in the face of difficulties (Bandura, 2001). Efficacy beliefs influence aspirations, choices, vulnerability to stress and depression, and performance accomplishments (Fernandez-Ballesteros et al., 2002).

According to social cognitive theory, self-efficacy refers to a self-evaluative process that links reasoning to conduct (Bandura, 2001). It is a judgment of capabilities to execute activities required to meet desired goals. In the present study, self-efficacy refers to a daughter's self-reported evaluation of her ability to achieve success as a leader in the family business. It is domain specific (Bandura, 2006a,b) since a general sense of self-efficacy may have little or no relevance to functioning in the family business (DeNoble et al., 2007). For example, a daughter may have strong beliefs in her ability to achieve in school, sports, or social causes, but may not believe she can lead the family business.

Similarly, fathers' judgments of daughters' efficacy may inform choices and link reasoning to conduct. As leaders of the family business and selectors of successors, fathers' assessments of daughters' capabilities to execute tasks to achieve desired goals may influence fathers' decisions to appoint daughters as successors. The construct, "perceived daughter efficacy," in our model reflects fathers' self-reported perceptions of daughters' efficacy as leaders of family businesses.

We examine the effects of self-efficacy and perceived daughter efficacy in two ways. First, we assess levels of beliefs about daughters' capabilities to lead the family business. In both models, strong beliefs about daughters' capabilities to lead the family business will influence daughters' dreams or vision for the future of the business and succession outcome, or daughters' ascendency to the position of successor. Secondly, we examine the variability in beliefs about daughters' capabilities between members of each daughter/father pair. We hypothesize that the closer the beliefs of the members of the family business pair, the stronger the predictability of the outcome. If fathers and daughters agree that daughters would not be efficacious leaders of the business, daughters will not likely develop a view for the company's future or achieve successor status. Contrastingly, if fathers and daughters agree that daughters have the ability to lead the company profitably, it is likely daughters will develop dreams or visions for the future of the company and succession.

We predict that a comparison between fathers' and daughters' perceptions of daughters' efficacy will differ. Previous studies on daughters in family businesses have suggested that daughters are usually invisible to fathers as potential leaders in family businesses (Curimbaba, 2002; Jimenez, 2009). Gender biases are noted to contribute to invisibility (Hollander and Bukowitz, 1990; Dumas, 1992; Lozano et al., 2011; Overbeke et al., 2013). Therefore, it is likely that more daughters will perceive they have successor efficacy than will their fathers.

We hypothesize:

Hypothesis 1a. Daughters' self-efficacy is positively associated with Daughter Succession Vision in family businesses.

Hypothesis 1b. Fathers' perceptions of daughters' efficacy is positively associated with Perceived Daughter Vision in family businesses.

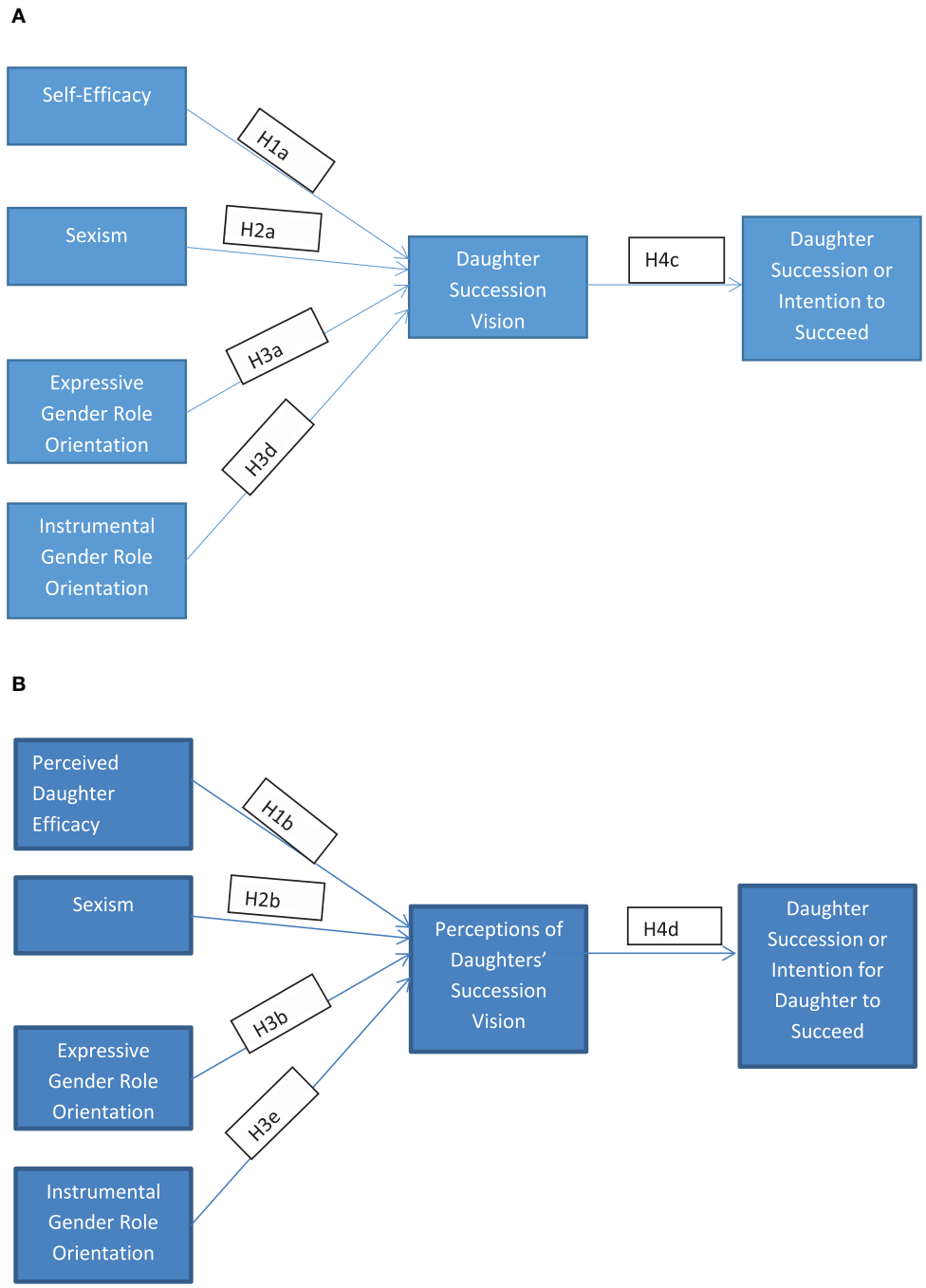

FIGURE 1 | Hypothesized models (A,B). (A) Hypothesized daughter model. **(B)** Hypothesized fathers' model.

Hypothesis 1c. Fathers and daughters beliefs about daughters' efficacy are significantly different, with daughters believing they have stronger levels of efficacy.

The Role of Sexism

Sexism refers to discriminatory practices against women, including overt and nuanced or subtle forms of sexism (Benokraitis and Feagin, 1986; Benokraitis, 1997; Jandeska and Kraimer, 2005). Overt sexism, or acts such as sexual harassment that can be documented or easily distinguished, have become less socially acceptable. Yet, women continue to experience gender based discriminatory behaviors and practices. Sexism may, therefore, be subtle or clandestine (Benokraitis and Feagin, 1986; Benokraitis, 1997; Swim and Cohen, 1997) which are not as detectable, but powerful. These acts of sexism are embedded in cultural and societal norms and permeate multiple levels of

society, including individual, organizational, institutional, and cultural. Covert sexism influences education, politics, religion, law, and other environmental factors (Benokraitis, 1997) that may influence daughter succession.

While both overt and covert sexism may be experienced by daughters of family businessmen, this research project focuses on subtle or covert sexism. Covert sexism is perhaps more ubiquitous and less understood in the context of daughters and succession. Many fathers and daughters may not be aware of embedded norms and how they may restrict a vision for the future of the family business with daughters at the helm. Benokraitis (1997) theorized that there are nine forms of subtle sexism: condescending chivalry, supportive discouragement, friendly harassment, subjective identification, radiant devaluation, liberated sexism, benevolent exploitation, considerate domination, and collegial exclusion. The names of these categories are oxymorons, meant to highlight the mixed messages they send and to emphasize the seemingly supportive behavior that has pernicious consequences (Benokraitis, 1997).

Three illustrations help explain how subtle sexism is exercised and its impact on family businesses. Examples of supportive discouragement, liberated sexism, and collegial exclusion show contradicting messages delivered through socially accepted actions. These mechanisms may discourage daughters from becoming successors. Supportive discouragement refers to a form of subtle sex discrimination where women are encouraged to succeed, in general, but numerous obstacles are placed in their path, intended to limit or derail their progress. Benokraitis offers the example of a college that offered a part-time program for people with no formal qualifications who wish to enter or reenter the workforce. Most participants were women with young children and required child care while in class or studying. The college also had a department dedicated to training child care workers and the two departments appeared to be a natural match. Students learning to be childcare workers could benefit from providing child care for the part-time mothers. However, despite the availability of a volunteer or low cost staff, the college refused to offer child care for the part-time students. In addition, the college housed the part-time program in the worst building on campus, thus appearing to offer women an opportunity but discouraging them with inadequate support.

Similarly, parents may use verbal persuasion to instill a sense of competency in their daughters. Daughters may be told they may aspire to anything, yet a structure of opportunities leading to succession typically excludes daughters (Iannarelli, 1992; Curimbaba, 2002). They are not encouraged to follow an educational curriculum preparing them for business and daughters who enter the family business are often not included in important decision-making or discussions (Barnes, 1988; Hollander and Bukowitz, 1990; Dumas, 1992). Furthermore, female management styles that differ from males often cause fathers to conclude that daughters are ineffective leaders (Dumas, 1992). The more collaborative and caring style of women managers are often misconstrued as uncompetitive and damaging to business. Thus, daughters are verbally, but not materially supported.

Liberated sexism refers to a process where equality is presumed, but in practice, men's freedom increases while women's workload increases. The best example is that of employed mothers of pre-school aged children. Most spend an average of 24 h or more per week on child care activities than their husbands (Benokraitis, 1997). These "liberated" women therefore have two jobs—one in the home and one outside the home. Successor daughters may also be expected to be the primary caretaker of her children while working outside the home. Additionally, liberated sexism has a unique twist in family businesses. Fathers represent both the company and family; consequently, they often expect devotion to the firm and simultaneously ask, "When are you going to give me a grandchild?" (Cole, 1997: 16).

Collegial exclusion refers to a form of subtle sexism where women are made to feel invisible or unimportant through physical, social, or professional isolation. Many women in non-traditional jobs find themselves being ignored, without role models, or excluded from discussions and social activities. Benokraitis (1997) relays an anecdote about a female college president meeting with other college presidents. As the only female among them, she found her suggestions and insights were ignored. However, when the same suggestions were later offered by a male colleague, they were acknowledged. Collegial exclusion has unique implications for family businesses because grooming of successors often begins at an early age (Dumas, 1992) where explicit and tacit knowledge are transferred from predecessor to successor through activities and conversation (Cabrera-Suarez et al., 2001). Daughters usually do not expect to become successors (Jimenez, 2009) and do not share in the grooming process. Collegial exclusion thus begins at an early age in family businesses.

Benokraitis began researching subtle sexism in the 1990s, but there is evidence of the persistence of this practice into the 21st century. The discrepancy between the number of highly trained professional women and the number of women in the highest executive ranks offers evidence of subtle sexism (Jandeska and Kraimer, 2005). Women are hired into management positions with ostensibly the same opportunities as their male colleagues to advance in an organization. Unofficial institutions such as the "masculine code of conduct" and "old boys networks" create an exclusionary culture that prevents access to information and opportunities for dialog. This is a form of collegial exclusion that causes women to become demoralized and less committed to an organization (Jandeska and Kraimer, 2005).

Daughters of family businessmen may also experience an opportunity gap created by an exclusionary climate toward women. The impact of this form of subtle sexism may be stronger because of the juxtaposition of the family and business. If found in the home, family, and business, it is unlikely daughters would have an interest in the business. They would be discouraged from developing a view of the future for the business, a dream that would precede leadership action. It follows that fathers who are not perceptive of subtle forms of sexism will not recognize these obstructions to daughters' succession. Sexism is therefore an attenuating variable with a restricting impact on vision and succession. We posit:

Hypothesis 2a. Daughters' beliefs that sexism is strong in American society has a strong impact on whether or not daughters form a Daughter Succession Vision.
Hypothesis 2b. When fathers' subtle or covert sexist beliefs and attitudes increase, the likelihood they perceive daughters have a succession vision decreases.
Hypothesis 2c. Daughters believe there is more sexism in society than do fathers.

The Role of Gender Role Orientation

Gender role orientation refers to beliefs about the proper roles for men and women at work and in the home (Judge and Livingston, 2008). Early theorists believed that gender was inborn, (Spence and Buckner, 2000) and characterized men as "instrumental" and women as "expressive." Instrumentality meant that men are predisposed to "get things done" and are, therefore, more qualified for managing economic and political institutions. Conversely, expressiveness represents caring, nurturing, and other qualities that are better suited for domestic responsibilities (Whitley, 1983; Spence and Buckner, 2000; Judge and Livingston, 2008; Mueller and Dato-On, 2008). Implicit in Expressive Gender Role Orientation is the subordination of women and their need for protection (Spence and Buckner, 2000; Mueller and Dato-On, 2008).

Early theories of gender role orientation were based on the assumption that "masculinity and femininity are opposite poles of a single dimension." That is, one must have either a masculine or a feminine sex-role orientation, "because these role orientations are mutually exclusive and incompatible" (Whitley, 1983: 766). This unidimensional understanding of gender role orientation was challenged in 1973 by Constantinople who developed a framework positing male and female sex roles as independent constructs (Mueller and Dato-On, 2008). This conceptualization led to non-traditional perspectives of gender as socially constructed rather than biologically determined sex roles (Mueller and Dato-On, 2008).

More recent theorists have built on Constantinople's conceptualization, proposing that gender role orientation is determined by individual attitudes, values, and self-concepts. Consequently, expressiveness may manifest in males and instrumentality may be exhibited by females (Spence and Buckner, 2000; Judge and Livingston, 2008; Mueller and Dato-On, 2008). In the present study, gender role orientation is seen as the operationalization of how strongly daughters are seen as expressive or instrumental and how that influences the selection and self-selection of a successor. Hackett and Betz's work (1981) established a link between gender beliefs and career choices. We measure the extent to which fathers' and daughters' beliefs about appropriate occupations for daughters are driven by beliefs about appropriate roles for men and women.

Several recent studies suggest that the social environment in the United States has become more egalitarian (Spence, 1993; Mueller and Dato-On, 2008), but signs of traditional views of the division of labor among men and women endure (Jandeska and Kraimer, 2005). Most prominent among these signs is a persistent gender wage gap which can be linked to gender role orientation (Judge and Livingston, 2008). In a longitudinal study, Judge and Livingston found a strong positive correlation between traditional gender role orientation and earnings for men and a slightly negative correlation with earnings for women. Similar to Hackett and Betz's (1981) findings, Judge and Livingston (2008) explain that gender role socialization leads individuals to find jobs dominated by their own gender. They argue that women with more traditional gender role orientations experience cognitive dissonance or discomfort when working in jobs usually held by men.

As a predictor of succession in family businesses, gender role orientation evaluates socialization factors, cultural conditioning, and cognitive perceptions of gender appropriate occupations. The more traditional a daughter's gender role orientation, the less likely she will become a successor. The more traditional a father's gender role orientation, the less likely he will appoint her successor. Finally, if the father and daughter have significantly different gender role orientations, and the father's is more traditional, the daughter will not likely be a successor. We therefore hypothesize:

Hypothesis 3a. There is a negative association between Expressive Gender Role Orientation and Daughter Succession Vision as perceived by daughters.
Hypothesis 3b. There is a negative association between Expressive Gender Role Orientation- and Daughter Succession Vision as perceived by fathers.
Hypothesis 3c. Fathers' and daughters' perceptions of daughters' Expressive Gender Role Orientation are significantly different, with daughters believing they have lower levels of expressiveness.
Hypothesis 3d. There is a positive association between Instrumental Gender Role Orientation and Daughter Succession Vision as perceived by daughters.
Hypothesis 3e. There is a positive association between Instrumental Gender Role Orientation and Daughter Succession Vision as perceived by fathers.
Hypothesis 3f. Fathers' and daughters' beliefs about daughters' Instrumental Gender Role Orientation are significantly different, with daughters believing they have higher levels of Instrumental Gender Role Orientation.

Daughter Succession Vision

Drawing on Intentional Change Theory's (ICT) conceptualization of personal vision (Boyatzis, 2006), Daughter Succession Vision represents a view of desired leadership needed to achieve a desired future of the family business. At an individual level it is an aggregated image including an assessment of the Ideal Leader compared to the Real Leader. At the collective level it is a shared vision (Boyatzis and Akrivou, 2006) of hopes and dreams for the future of the family business between fathers and daughters.

In ICT, personal vision is a consequence of the Ideal Self. The Ideal Self "is an evolving, motivational core within the self, focusing a person's desires and hope, aspirations and dreams, purpose and calling" (Boyatzis, 2006: 625). It leads to a manifestation of an image of what kind of person one wishes to be, or a personal vision (Boyatzis and Akrivou, 2006). In comparison, the Real Self in ICT is an examination of one's

current self, the person that others see along with an internal assessment of personal beliefs and emotions. It includes an exploration of questions such as, "Who am I?" (Boyatzis, 2006) "How am I fitting into this setting? How am I doing in the view of others? Am I part of this group or organization or family?" (Boyatzis, 2006: 15).

The "Ideal Leader" relates to summary judgments of qualities necessary for a leader of the family business. Like the Ideal Self, the Ideal Leader encompasses a focus on hope, dreams and aspirations, and purpose and calling within the family business. Just as the "Real Self" is an assessment of the person that others see, the "Real Leader" is an assessment of the person that others see in the context of leadership in the family business.

A comparison of the Ideal Leader with the Real Leader allows an evaluation of a successor candidate's fit with the image of the ideal leader. In this study, the daughter represents the "Real Leader" and is compared with her own appraisal of the Ideal Leader. Additionally, the father compares the Real Leader, or the daughter, with his image of the Ideal Leader and this leads to a vision of a successor.

The Real Leader is supported by two dimensions, motivation and readiness. Similar to the construct of intention (Ajzen and Driver, 1991), these components suggest action. Motivation represents the desire to advance the effort required to become a successor. For example, if a daughter is not highly motivated to be a successor, she will not pursue this position, despite other factors. Hence, motivation is considered when constructing an image of a successor and is a criterion when selecting a successor. Likewise, readiness suggests actions taken to prepare for succession. As an indicator of a Real Leader, it implies the amount of effort already extended toward succession. Examples include reading books, taking business courses, or participating in the family business while growing up.

In the present study, Daughter Succession Vision will be assessed individually and comparatively on two levels. First, the father and daughter's individual visions will be determined. What qualities does the father think are necessary in a successor in order to achieve his view of the future of the family business? How does his daughter compare with his vision of a successor? How does the daughter perceive these same issues? Secondly, how do fathers' and daughters' visions compare with each other? How does the father's vision of his daughter as a successor compare with the daughter's assessment of herself as a successor?

In sum, Daughter Succession Vision is a complex variable that collects and disseminates information. Daughter Succession Vision accumulates various factors into a comprehensive variable, a desired future. This predicts the outcome through an interactive process between the Ideal Leader and Real Leader. The level of strength with which the daughter fits the image of the Ideal Leader determines the likelihood the father will choose his daughter to become a successor and the likelihood the daughter self-selects as a successor. Differences between levels of strength may reveal gender biases. Fathers may be blind to daughters' visions because they do not perceive their daughters to be capable of leading family businesses. We therefore propose:

Hypothesis 4. Daughters' "Daughter Succession Visions" are stronger than fathers perceive.

Mediation Effects

Daughter Succession Vision/Perceptions of Daughters' Succession Vision are positioned as mediators in our models. As described by Mathieu and Taylor (2006), mediators "elucidate the underlying mechanisms linking antecedents and their consequences" (p. 1031). Thus, mediators are not merely linking variables but provide theoretical understanding of the connection between independent and dependent variables. As mediators, Daughter Succession Vision/Perceptions of Daughters' Succession Vision are expected to reduce the direct effects of the independent variables on the dependent variable. Self-Efficacy/Perceived Daughter Efficacy, beliefs about sexism, and gender role orientations, are predicted to have direct relationships with succession outcome. The aggregated effects of these variables, however, may be explained by Daughter Succession Vision/Perceptions of Daughters' Succession Vision. For example, a father may believe his daughter can execute functions leading to a successful business. Hence, a direct relationship may exist between Successor Efficacy/Perceived Daughter Efficacy and Daughter Succession. Yet, this father may also believe it is inappropriate for women to manage a business. Daughter Succession is therefore explained by the father's perceptions or assumptions about whether their daughter has a vision for the future of the family business.

Hypothesis 4a. Daughter Succession Vision mediates the effects of daughters' assessments of: (1) Self-Efficacy, (2) Sexism, (3) Expressive Gender Role Orientation, and (4) Instrumental Gender Role Orientation, on Daughter Succession.

Hypothesis 4b. Perceptions of Daughters' Succession Vision mediates the effects of fathers' assessments of: (1) Perceived Daughter Efficacy, (2) Sexism, (3) Expressive Gender Role Orientation, and (4) Instrumental Gender Role Orientation, on Daughter Succession.

Hypothesis 4c. The stronger Daughter's Succession Visions, the more likely daughters will associate with Daughter Succession.

Hypothesis 4d. Fathers who perceive daughters have strong Daughter Succession Visions will positively associate daughters with Daughter Succession.

Methods

Research Setting and Sampling Procedures

The target population for this study was pairs of fathers and daughters where fathers owned a family business and daughters were over the age of 18. A family business was defined as a business where the families have control over the business' strategic direction and there is some family participation in the business (Astrachan and Shanker, 2003). Eight associations with family business memberships ranging from 15 to 17,000 were contacted. These associations were selected based on the size and diversity of its business population. Three associations agreed to participate in the collection of data: (1) a branch of the Cleveland

Ohio Chamber of Commerce; (2) a university based family business organization; and (3) a national professional association.

In addition, the difficult nature of data collection for this project finally required a convenience sample including a "snowball" method of collection. In total, researchers sent a mass email with links to the surveys to 228 individuals, including 133 fathers and 95 daughters. Initial emails were followed by reminders until 50 pairs responded. Each father/daughter pair were asked to choose a unique identifying name so that their surveys could be paired and they could retain anonymity. A summary of completed demographic questions may be seen in **Table 1**.

TABLE 1 | Demographic profiles of respondents and organizations.

Daughters and succession	Number	Percent
Daughters currently working in family business	23	46
Daughters currently in successor positions	7	14
Daughters with high intentions of succession	10	20
Daughters with low intentions of succession	18	36
Daughters undecided	15	30
INDUSTRIES		
Service	15	30
Wholesale	2	4
Manufacturing	1	2
Unreported	32	64
GROSS REVENUES		
Less than $100,000	2	4
$100,000–499,999	8	16
$500,000–999,999	1	2
$1,000,0000–4,999,999	18	36
$5,000,000–9,999,999	5	10
$10,000,000–49,999,999	8	16
$50,000,000–99,999,999	2	4
Over $100,000,000	6	12
GENERATION CURRENTLY OPERATING BUSINESS		
1st	24	48
2nd	16	32
3rd	8	16
4th	1	2
More than 4th	1	2
AGE-FATHERS		
50–53	8	16
54–58	15	30
59–61	10	20
62–64	8	16
65–67	6	12
No response	3	6
AGE-DAUGHTERS		
19–28	26	52
29–38	18	36
39–48	2	4
49–53	0	
54–58	4	8

Data Collection

The survey instrument was pre-tested by two-panels for face validity and appropriate interpretation of questions. The panels were composed of academic researchers, fathers owning family businesses whose daughters were too young to participate, and daughters of family businessmen who did not qualify to participate in the study (i.e., daughters whose fathers were deceased). Those participating in the pre-tests examined question structure and order, item consistency, and clarity of construct dimensions. Critical review resulted in some revisions and further honing of the survey instrument so that questions were less ambiguous and response choices made sense (Dooley and Lindner, 2003). Verbal labels, clarifying the meaning of scale points (Krosnick, 1999) were also examined for clarity.

Measurement

Two surveys, with separate links, were hosted by an online survey company. The focal object of both surveys was the daughter. Fathers were asked to evaluate their daughters and daughters were asked to evaluate themselves. Fathers' and daughters' surveys were identical except for necessary word changes to direct respondents' attention to the daughter.

Previously validated scales, chosen for their theoretical and empirical properties, were used to measure constructs. Some scales were modified to contextualize the items to reflect assessments within a family business. For example, the "New General Self-Efficacy Scale" (Chen et al., 2001) was used to measure daughters' self-efficacy and fathers' perceptions of daughters' efficacy. **Table 2** shows the first item in the original scale and how it was adapted or contextualized to fit daughters' and fathers' surveys:

All measurements, with the exception of the dependent variable, Succession, were based on a 5-point Likert scale with 1 = strongly disagree and 5 = strongly agree. Details about all scales employed are provided in Appendix A.

Dependent Variable

The dependent variable, daughter succession, was defined broadly in order to include both daughters who were on a path toward succession and daughters who were already in an executive leadership position. This study measures fathers' and daughters' perceptions of the desired qualities of family business successors, how well daughters match those qualities, and the influence of gender bias on these perceptions. Unfortunately, the sample size of daughter successors was so small it was necessary to combine it with daughters intending to become successors. Using this definition of daughter succession, the dependent variable, Daughter Succession, was calculated by adding the codes assigned to two scales. Intention was measured with a 5-point Likert scale and the Daughter Succession scale was measured by assigning codes to the daughter's reported position title within the family business. The codes assigned to daughter's position title are reported in **Table 3**.

Items measuring Intention are described in Appendix A. The highest possible score combining rank and intention was 12. We considered scores higher than half of 12 to be indicators of succession or future succession.

TABLE 2 | Example of contextualized self-efficacy scale item.

New general self-efficacy scale (Chen et al., 2001)	Present daughter survey	Present father survey
1. I will be able to achieve most of the goals that I have set for myself	1. I will be able to achieve most of the goals that I set for myself as an executive in my family's business.	1. My daughter will be able to achieve most of the goals that she sets for herself as an executive in our family business.

TABLE 3 | Codes assigned to daughter's current position title.

Rank	Position title
7	CEO
	COO
	President
6	Vice-president
5	Director
4	Manager
3	Technical
	Sales person
	Coordinator
2	Administrative
1	Not in the family business

Gender Role Orientation

A modified version (Valian, 1998) of the Personal Attributes Questionnaire (PAQ) (Spence and Helmreich, 1978; Spence and Buckner, 2000) was used to measure gender role orientation. Currently, there are several scales available to measure gender role attitudes. The PAQ has been noted for containing the least social desirability bias (Whitley, 1983). The PAQ is widely used for measuring instrumental and expressive personality traits that are stereotypically associated with men and women (Fernandez et al., 2007). The scale consists of 24 items measured on a five point Likert scale. There are two dimensions in this scale, each consisting of eight items: (1) instrumental ($\alpha = 0.77$) and, (2) expressive ($\alpha = 0.51$). The remaining eight items are "fillers" for reducing bias (Spence, 1993: 628).

Sexism

The Modern Sexism Scale (Swim and Cohen, 1997) was used to assess fathers' and daughters' perceptions of discriminatory practices against women in American society. This scale consists of eight items measured on a 5-point Likert scale and measures both overt and subtle forms of sexism (Benokraitis and Feagin, 1986).

Self-efficacy/Perceived Daughter Efficacy

"The General Self-Efficacy Scale," ($\alpha = 0.81$; Chen et al., 2001) employs eight items measuring perceptions of skills and abilities to successfully perform tasks in a variety of settings. This scale was contextualized to assess a daughter's self-efficacy and her father's perception of collective efficacy. Thus, the father's scale measures his perceptions of the efficacy of the business organization with his daughter at the helm.

Daughter Succession Vision

"The Personal Vision" scale, taken from the PNEA Survey ($\alpha = 0.92$; Boyatzis and Oliver, unpublished) consists of eight items based on a 5-point Likert scale. The scale measures the extent to which a daughter and her father view the daughter as a successor in the family business.

Intention

This construct was measured using a four item scale adapted from Lin (2007). The scale was adapted to a 5-point Likert scale from a 7-point Likert scale.

Method of Analysis

The research model was tested using Partial Least Squares (PLS-Graph, v3.0, Build 1060, Chin and Frye, 1998). The hypothesized relationships among constructs were analyzed using the partial least squares (PLS) approach for structural equation modeling (SEM). The decision to use PLS, rather than a covariance-based SEM (supported by such tools as LISREL and AMOS), was based primarily on the goal and nature of the study. The study's aim was to understand how well the model predicts daughter's succession, rather than to explain covariance of all measures. The study is based on a concept that has not been explored and is little understood. The nature of modeling succession lends itself to an exploratory data analysis approach. Prediction—rather than explanation—orientation of the study, as well as the lack of a strong theory, makes PLS a very suitable parameter estimation methodology (Chin, 1998; Haenlein and Kaplan, 2004).

Prior to hypotheses testing, data were screened for missing cases and checked for regression assumptions of homoscedasticity, multicollinearity, and linearity. The correlation matrix, means, and standard deviations are presented in **Table 4**.

Common Method Bias (CMB)

The data collection instrument for this study was a self-report survey. Such a format often lends itself to method bias. We tested for method bias by examining correlations among latent variables (see **Table 1**). All correlation values are far below the suggested maximum threshold of 0.90 (Pavlou et al., 2007). Next, we conducted a Harman's single factor test wherein all variables are loaded onto one factor while conducting a principal components factor analysis. According to this test, if one factor emerges explaining over 50% of the model, CMV is determined to be present (Podsakoff et al., 2003). Results indicated one factor explaining 24.7% of the model, suggesting that CMV is present, but not strong enough to produce a significant bias.

Psychometric properties of the EFA model were examined for construct reliability and convergent validity. Exploratory

Factor Analysis (EFA) was conducted in SPSS using Principal Axis Factoring and Promax rotation. The reliability of the scale items was assessed for internal consistency using Cronbach's alpha. The initial 42 items yielded a five factor solution and items loaded as hypothesized, explaining 59% of the variance in the model. Items with low loadings or cross loadings were removed. After several iterations, a trimmed model presented 34 items explaining 54% of the model variance. The constructs' Cronbach's alpha measurement exceeded 0.75, indicating internal consistency among survey responses.

Next, the factorial validity of the measured constructs was evaluated with a confirmatory factor analysis model. We examined factor loadings, composite reliability (CR), and average variance extracted (AVE) measures. Both CR ($0 \leq CR \leq 1$) and AVE ($0 \leq AVE \leq 1$) are commonly used metrics of convergent validity (Hair et al., 2010). Both CR and AVE metrics exceeded the acceptable thresholds of 0.7 and 0.5, respectively (Hair et al., 2010), providing evidence of construct reliability and convergent validity. Further, the analysis assessed discriminant validity using AVE and inter-factor correlations in combination. Discriminant validity can be established if a latent variable's AVE is larger than the common variances (Chin, 1998; Pavlou et al., 2007; Götz et al., 2010). Following this guidance, **Table 4** presents the square root of AVE for each construct on the diagonal (in bold) to compare against the correlations among the constructs captured in the off-diagonal elements of the matrix. **Table 5** shows that all constructs demonstrate both CR and discriminant validity.

Analysis and Findings

Testing of the structural model was conducted in two stages. First, path relationships were tested using a bootstrapping procedure in PLS. Secondly, a matched pair *T*-Test was conducted in SPSS in a post hoc analysis, to determine significant differences between fathers' and daughters' responses across all scale items. The hypothesized structural model was examined in PLS using two separate data sets, one reflecting fathers' responses and the other composed of daughters' responses. Two models were created, as the data suggested different findings for the father and daughter groups. We will first present findings from the path analyses between independent variables and the mediator. An examination of mediated relationships will follow. Finally, we present a comparative analysis between fathers' and daughters' responses.

TABLE 5 | Factor loadings and measurement properties of construct.

Construct/Item	Loading	*t*-value	Composite reliability
INSTRUMENTAL GENDER ROLE ORIENTATION			
Q1_7	0.61	5.23	0.863
Q1_10	0.75	10.27	
Q1_11	0.76	7.73	
Q1_12	0.74	5.49	
Q1_15	0.86	23.36	
EXPRESSIVE GENDER ROLE ORIENTATION			
Q1_4	0.73	4.59	0.881
Q1_5	0.53	2.63	
Q1_6	0.91	6.79	
Q1_8	0.84	5.56	
Q1_13	0.74	4.61	
Q1_14	0.68	3.61	
SELF-EFFICACY/PERCEIVED DAUGHTER EFFICACY			
Q2_1	0.83	22.02	0.948
Q2_2	0.86	29.77	
Q2_3	0.85	28.91	
Q2_4	0.85	20.25	
Q2_5	0.87	30.89	
Q2_6	0.88	29.49	
Q2_7	0.72	10.99	
Q2_8	0.81	15.76	
SEXISM			
Q10_2	0.87	8.16	0.90
Q10_3	0.58	3.29	
Q10_6	0.80	5.38	
Q10_7	0.81	6.60	
DAUGHTER SUCCESSOR VISION/PERCEPTIONS OF DAUGHTER SUCCESSION VISION			
Q3_1	0.80	20.70	0.92
Q3_2	0.84	29.72	
Q3_3	0.79	18.78	
Q3_4	0.74	9.31	
Q3_5	0.84	23.80	
Q3_6	0.84	25.33	

TABLE 4 | Descriptive statistics and construct correlations.

	Mean	S.D.	IGRO	EGRO	SEFF	VIS	INT	SX	DS
IGRO	3.74	0.72	**0.75**						
EGRO	4.1017	0.65	0.200*	**0.75**					
SEFF	4.12	0.68	0.671**	0.274**	**0.84**				
VIS	3.32	0.84	0.317**	0.143	0.511**	**0.81**			
INT	3.01	1.21	0.125	−0.097	0.228*	0.606**	**0.92**		
SX	2.61	0.73	0.140	−0.022	0.097	0.188	0.216*	**0.77**	
DS	5.25	2.64	0.143	−0.135	0.201*	0.529**	0.856**	0.147	**n/a**

**Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).*

Regression weights and corresponding significance levels for each hypothesized construct relationship in the father's model indicated two paths between independent variables and the mediator were significant and two paths were not as posited. The supported hypotheses in the fathers' model were:

Hypothesis 1b. Fathers' perceptions of daughters' successor efficacy is positively associated with Daughter Succession Vision in family businesses.
Hypothesis 2b. When fathers' beliefs about women in society reflect subtle or covert sexist attitudes, they will not perceive that daughters have a Daughter Succession Vision.

Rejected hypotheses in the fathers' model were:

Hypothesis 3b. There is a negative association between Expressive Gender Role Orientation and Perceptions of Daughters' Succession Vision.
Hypothesis 3e. There is a positive association between Instrumental Gender Role Orientation and Perceptions of Daughters' Succession Vision.

In the Daughter's model two paths between independent variables and the mediator were significant and two paths were not as predicted. The supported hypotheses in the daughters' model were:

Hypothesis 1a. Daughters' perceptions of self- efficacy are positively associated with Daughter Succession Vision in family businesses.

Hypothesis 2a. A belief that sexism is strong in American society has a strong impact on whether or not daughters form a Daughter Succession Vision.

The rejected hypotheses in the daughters' model were:

Hypothesis 3a. There is a negative association between Expressive Gender Role Orientation and Daughter Succession Vision as perceived by daughters.
Hypothesis 3d. There is a positive association between Instrumental Gender Role Orientation and Daughter Succession Vision as perceived by daughters.

Table 6 summarizes the hypotheses, showing coefficients and significance levels for proposed relationships between Independent Variables and the Mediator, and the relationship between the Mediator and the Dependent Variable. For clarity, estimates and significance levels of mediated relationships are reported in a separate table.

Mediation Analysis

While mediator variables explain the nature of a relationship between two variables (X→M→Y), a relationship between X→Y must be established before a predictor and criterion may be evaluated for mediation (Mathieu and Taylor, 2006). The X→Y precondition is examined in **Table 7**.

The precondition tests showed a significant relationship between Sexism and Daughter Succession in the daughters' model. It also revealed a significant relationship between

TABLE 6 | Summary of hypothesis testing.

Hypothesis	Path/Respondent [Daughter (D)or Father (F)]	Hypothesized model coefficient	*t*-value	Hypothesis supported
H1a	Successor efficacy→Vision-D	0.387	2.33	yes
H1b	Successor efficacy→Vision-F	0.435	2.09	yes
H2a	Expressive gender role orientation→Vision D	0.073	0.78	no
H2b	Expressive gender role orientation→Vision F	0.045	0.43	no
H2d	Instrumental gender role orientation→Vision D	0.080	0.60	no
H2e	Instrumental gender role orientation→Vision F	−0.025	0.16	no
H3a	Sexism→Vision D	0.377	3.40	yes
H3b	Sexism→Vision F	0.218	1.94	yes
H4c	Vision→Succession or intention to succeed-D	0.542	6.00	yes
H4d	Vision→Succession or intention to succeed-F	0.598	6.45	yes

D = Daughters; F = Fathers.

TABLE 7 | Mediation preconditions.

Mediation	Daughters				Mediation	Fathers			
X→Y	Coefficient	*t*-value	St. error	Sig.	X→Y	Coefficient	*t*-value	St. error	Sig
EGRO→DV	−0.1210	0.9501	0.1274	no	EGRO→DV	−0.2560	2.1170	0.1209	Yes*
IGRO→DV	0.0600	0.4907	0.1223	no	IGRO→DV	−0.1530	1.1804	0.1296	no
SEFF→DV	0.2380	1.4966	0.1590	no	SEFF→DV	0.130	1.0690	0.1244	no
SX→DV	0.2520	2.2505	0.1120	Yes*	SX→DV	0.0430	0.4168	0.1032	No

*EGRO, Expressive Gender Role Orientation; IGRO, Instrumental Gender Role Orientation; SEFF, Successor Efficacy; SX, Sexism. *Significant at 0.05 level.*

TABLE 8 | Mediation-daughters.

Path	Coefficient	*T*-value	Standard error	Significance
Sexism→Vision	0.3190	2.4790	0.1287	yes
Vision→Succession	0.4860	4.2413	0.1146	yes
Sexism→Succession	0.1230	1.2017	0.1024	no

TABLE 9 | Mediation-fathers.

Path	Coefficient	*T*-value	Standard error	Significance
Expressive gender role orientation→Vision	−0.0070	0.0705	0.0993	no
Vision→Succession	0.6350	6.0041	0.1058	yes
Sexism→Succession	−0.2560	2.1170	0.1209	yes

Expressive Gender Role Orientation (EGRO) and Daughter Succession in the fathers' model. Other variables were not significantly related to the DV. These tests suggest that further mediation testing may indicate mediation, partial mediation, and unanticipated effects such as direct or indirect effects.

Full and partial mediation results are presented in **Tables 8**, **9**.

Tables 8, **9** show full mediation in the Daughters' model and partial mediation in the Fathers' model. In the Daughters' model paths between the IV (Sexism) and Mediator (VIS), and the Mediator (VIS) to the DV (Daughter Succession) are significant. The path between the IV and DV is not significant, suggesting that Daughter Succession Vision is necessary to explain the relationship between Sexism and Daughter Succession.

In the Fathers' model paths between the IV (EGRO) and DV (Daughter Succession), and the Mediator (VIS) and DV (Daughter Succession) are significant. The path from the IV (EGRO) to the Mediator (VIS) is not significant. This suggests partial mediation as EGRO has a direct relationship with the DV, but may be influenced by the mediator, VIS. **Table 10** presents direct and indirect effects of VIS.

The results in **Table 10** indicate a significant indirect effect between Self-efficacy/Perceived Daughter Efficacy and Daughter Succession in both the Daughters' and Fathers' models. Daughter Succession Vision connects these two variables, suggesting that Daughter Succession Vision is necessary before Self-efficacy/Perceived Daughter Efficacy influences Daughter Succession. Additionally, Daughter Succession Vision has a direct effect on the relationship between Sexism and Daughter Succession in the Fathers' model. This contrasts with the role of Daughter Succession Vision as a mediator in the Daughters' model. However, both the Daughters' and Fathers' models show Daughter Succession Vision as a strong influence between Sexism and Daughter Succession, suggesting that Sexism contributes to perceptions of daughters as successors in the family business. Instrumental Gender Role Orientation (IGRO) is not significantly related to Daughter Succession Vision or Daughter Succession. This conclusion agrees with the initial hypothesis test. Finally, a clear distinction is seen between Daughters' and Fathers' view of Expressive Gender Role Orientation. EGRO does not influence Daughter Succession in the Daughters' model but significantly affects Daughter Succession in the Fathers' model, indicating that fathers who perceive expressive qualities in their daughters do not consider their daughters as candidates for succession. This relationship had not been hypothesized.

TABLE 10 | Daughters-mediated, direct and indirect effects/fathers-direct and indirect effects.

Path	Coef	*t*-value	St. err	Sig	Effect
DAUGHTERS-MEDIATED, DIRECT AND INDIRECT EFFECTS					
EGRO→VIS	0.1210	1.2636	0.0958	NO	NONE
VIS→DV	0.4860	4.2413	0.1146	YES	
EGRO→DV	−0.2050	1.5227	0.1346	NO	
IGRO→VIS	0.1080	0.7692	0.1404	NO	NONE
VIS→DV	0.4860	4.2413	0.1146	YES	
IGRO→DV	−0.0400	0.2741	0.1460	NO	
SX→VIS	0.3190	2.4790	0.1287	YES	MED
VIS→DV	0.4860	4.2413	0.1146	YES	
SX→DV	0.1230	1.2017	0.1024	NO	
SEFF→VIS	0.3880	2.0212	0.1920	YES	INDIRECT
VIS→DV	0.4860	4.2413	0.1146	YES	
SEFF→DV	0.0740	0.5331	0.1388	NO	
FATHERS-DIRECT AND INDIRECT EFFECTS					
EGRO→VIS	−0.007	0.0705	0.0993	NO	DIRECT
VIS→DV	0.6350	6.0041	0.1058	YES	
EGRO→DV	−0.2560	2.1170	0.1209	YES	
IGRO→VIS	−0.0180	0.1244	0.1447	NO	NONE
VIS→DV	0.6350	6.0041	0.1058	YES	
IGRO→DV	−0.1530	1.1804	0.1296	NO	
SX→VIS	0.2280	2.1204	0.1075	YES	INDIRECT
VIS→DV	0.6350	6.0041	0.1058	YES	
SX→DV	0.0430	0.4168	0.1032	NO	
SEFF→VIS	0.4610	1.9556	0.2357	YES*	INDIRECT
VIS→DV	0.6350	6.0041	0.1058	YES	
SEFF→DV	0.1330	1.0690	0.1244	NO	

**Borderline significance.*

Comparative Analysis

A Paired Sample *T*-Test was also conducted to understand differences within father/daughter pairs. **Table 11** illustrates results of tests of hypothesized comparisons between daughters' and fathers' responses. We proposed that daughters believe they have more self-efficacy than fathers perceive (Hypothesis 1c) and daughters believe there is more sexism in society than fathers believe (Hypothesis 2c). Additionally, we posited that daughters believe they have stronger instrumental gender role orientations than expressive gender role orientations and fathers believe the reverse about daughters (Hypothesis 3f). Finally, we hypothesized that daughters' succession visions are stronger than fathers perceive (Hypothesis 4).

Table 11 shows that father and daughter pairs significantly differ in their average perceptions of Sexism in society. Based on the difference in means (Fathers minus Daughters), daughters see more sexism in society than their fathers, supporting hypothesis

TABLE 11 | Paired sample *T*-Test results.

Hypothesis	Construct	Mean	*t*-value	*p*-value	Hypothesis supported
H1c	Perceived Daughter Efficacy/Self-Efficacy	−0.083	−0.689	0.494	No
H2c	Sexism	0.211	2.483	0.020*	Yes
H3c	Expressive Gender Role Orientation	−0.025	−0.226	0.822	No
H3f	Instrumental Gender Role Orientation	−0.010	−0.085	0.933	No
H4	Vision	−0.267	−2.250	0.030*	Yes

Significant at 0.05 level.

2c. Father and daughter pairs also significantly differ in their perceptions of daughters' visions for the future of the business. The difference in means indicate that more daughters have greater succession visions than fathers perceive, supporting Hypothesis 4.

Discussion

The purpose of this study was to understand how successors are chosen in family businesses and why so few daughters become successors. Specifically, we tested a set of propositions to determine the impact of self-efficacy/perceived daughter efficacy, gender beliefs, as indicated by beliefs about sexism in society and beliefs about gender roles, and shared vision on succession outcomes. The sample consisted of pairs of fathers and daughters because fathers are typically gatekeepers to leadership positions in family businesses. Three notable findings emerged from this study. First, the findings highlight the pivotal role of daughters' visions for the possibilities of the company. Second, the findings identify two differences between fathers' and daughters' beliefs suggesting misconceptions about daughters. Third, the study's results confirm the restraining role of gender biases in family businesses. Below we discuss each of these.

The Pivotal Role of Daughters' Visions of Possibilities for the Company

Daughter Succession Vision served as a mechanism in our model to combine fathers' and daughters' perceptions of daughters' motivations and readiness to be successors. Informed by self-efficacy and gender beliefs, the vision construct allowed an evaluation of daughters' perceptions of the family business's purpose and calling as well as their fit with an image of a family business leader. Our construct, "Daughter Succession Vision," encompassed shared beliefs and attitudes about the future of the family business and the likelihood that daughters would become successors. Results indicated that when daughters developed a vision for the future of the company and fathers recognized and shared their vision, daughters were more likely to become successors.

Differences between Fathers' and Daughters' Beliefs about Vision and Sexism

Data indicated a gap between fathers' and daughters' perceptions of daughters' views of the future of the company. The difference suggests that more daughters have visions for the future of the company than dads may realize. Extant literature describes daughters as "invisible" (Jimenez, 2009). Their role and contributions to the family business are subtle and unrecognized. Our data suggest that daughters' visions for the family business may be invisible to fathers and, as the antecedent to daughter succession, fathers' blindness to daughters' visions may be a restricting influence to daughter succession.

The findings of this study also indicate differences between fathers' and daughters' beliefs about discrimination toward women in society, with fathers believing there is less sexism than daughters perceive. This suggests subtle sexism (Benokraitis, 1997) as fathers may not be mindful of the restricting influences of mixed messages that encourage daughters toward achievement but do not offer necessary support.

The Role of Gender Biases

This research study indicates that daughters' visions of possibilities for the future of the family business may counteract restricting influences of gender biases. However, two factors confirm the presence of binding gender influences. The variable, Sexism, is an attenuating variable in our model, exerting a negative influence on the mediator and dependent variable. Findings that sexism is positively related to Daughter Succession Vision and Succession indicate that sexism reduces daughters' visions and succession. Daughters who perceive strong boundaries for females are less likely to prepare for succession or develop a vision for the family business.

Perhaps the most important evidence of gender bias was the finding of the negative relationship between fathers' beliefs about expressive behaviors and daughter succession. This relationship reveals the influence of sex stereotypes on perceptions of appropriate career choices for daughters. Fathers who perceived that daughters were expressive- or nurturing, caring, and cooperative- ruled out daughters' possibilities for succession. Gender biases therefore continue to affect the selection and self-selection of family business successors by impacting both fathers' and daughters' cognitions about women's roles in society.

Conclusion

Results of the present study suggest the transformational qualities of shared vision. Shared vision not only transformed daughters into successors but may have helped daughters surmount gender barriers. Mediation, direct and indirect effects of shared vision revealed a process through which individuals self-select and are selected by others. **Figure 2A** indicates that self-selection is driven by self-efficacy, or daughters' beliefs that they have the

abilities to lead the business. In turn, self-efficacy encourages daughters to develop an ideal vision for the business. However, sexism is an attenuating variable that mitigates daughters' visions for the future of the business. Likewise, **Figure 2B** shows that perceptions of daughters' efficacy to lead the family business as well as perceptions that daughters' have an agreeable vision for the future of the company, encourages fathers to select her for leadership. Conversely, gender biases serve as barriers to daughters' self-selection and fathers' selection of daughters as family business leaders. Daughters who perceive a discriminatory or sexist environment are not likely to develop a vision for the business. Importantly, daughters did not believe that gender role orientations influenced their family business leadership potential. Their beliefs about accepted roles for females and males were unrelated to the development of a vision for the business. Daughters' perceptions of a gender based discriminatory environment, however were factors that discouraged daughters from developing a vision. Beliefs about a sexist society are thus barriers to daughter leadership. Similarly, fathers' selections or dismissals of daughters for succession were influenced by gender biases. Fathers' perceptions of daughters' expressive characteristics disqualified daughters as successors. Furthermore, fathers blind to discriminatory environments did not perceive that daughters had a succession vision, the antecedent to succession. Data show that fathers' perceptions about who should lead the next generation of family businesses are impacted by undetectable but powerful gender influences. Thus, the key process for daughters to self-select and be selected as successors is to develop domain specific self-efficacy that is recognizable to others and to leverage that efficacy to form visions that might be shared by the current leader. Additionally, fathers' and daughters' awareness of the mitigating influences of gender biases can help them guard against these negative factors. In sum, understanding influences that lead to daughter inclusion or exclusion can help family business owners encourage and prepare their daughters for leadership in the next generation of their family business.

Contributions To Literature

Our study contributes to the theoretical literature by providing insights about the influence of Social Cognitive Theory on ICT. Our study indicated a strong relationship between self-efficacy and vision, a necessary component for change. Our study also shows linkages between Gender Theory and ICT, suggesting conditions for the activation of hopes and dreams for the future of the family business. Perceptions of gender inequality however, may suppress agency that leads to change. Finally, our study advances family business literature as it illuminates a process that is used to select next generation leaders. This process includes social cognitive variables integrated with desired goals or outcomes.

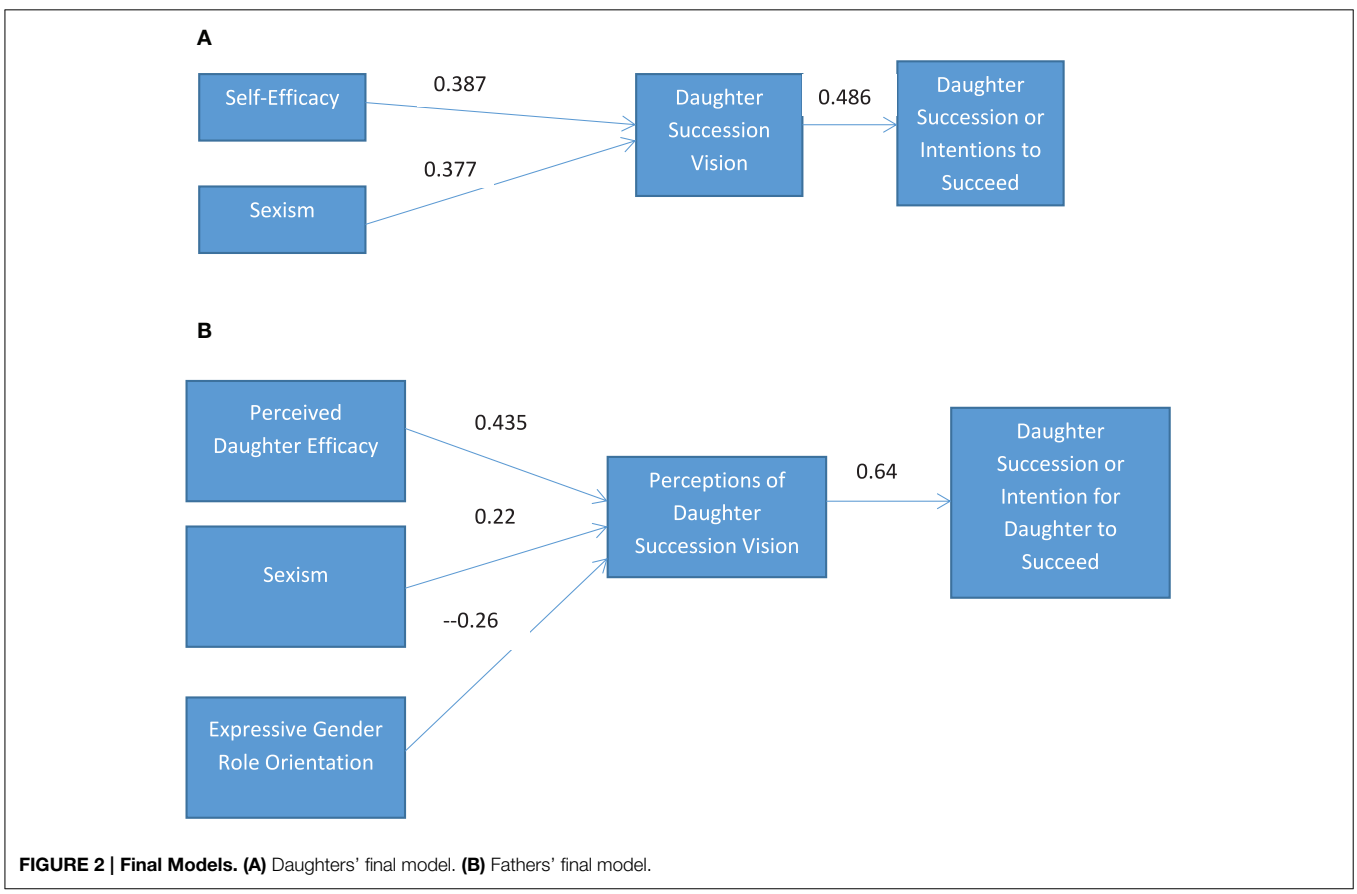

FIGURE 2 | Final Models. (A) Daughters' final model. **(B)** Fathers' final model.

Limitations

The use of a convenience sample where the geographical distribution of respondents is mostly from one area of the United States may limit the generalizability of these findings. A broader sample including the west and east coasts and larger cities may provide different results. Additionally, a larger sample of successor daughters may provide more insights into differences between successor and non-successor daughters.

Temporal effects potentially produce bias in fathers' responses. If daughters are in administrative positions fathers may be less likely to rate her as high on the perceived daughter efficacy scale than if the daughter were in an executive position. However, we argue that this potential bias is not relevant to family businesses. Fathers' assessments of daughters' abilities may cause daughters' current positions, not bias fathers' assessments after daughters' have assumed their positions. As chief leaders of the family business, fathers evaluate daughters' efficacy before appointing them to a position in the business. Therefore, daughters' positions or position titles do not likely impact fathers' assessments for this survey. For example, daughters in administrative positions may be there because fathers do not believe they can be effective executives or fathers may have placed them there to train for executive positions.

Future Research

The roles of self-efficacy and gender biases on the formation of a vision for the company suggest environmental layers or proximal and distal variables (Lent et al., 2000) that influence the development of a vision. These variables may provide more insight about the process of creating a vision and the role of personal perceptions and extra-person influences. Examining these dynamics in a family business might offer unique information due to the same actors in both the family and business systems.

Future research might also examine shared vision in the selection process of sons or other family members as successors in family businesses. A comparison between the selection processes of daughters and sons may yield more understanding of how shared vision may lead to family business continuity.

Implications for Practice

The power of shared vision to help daughters transcend gender barriers provides evidence for increasing communication between fathers and daughters. This study suggests that achieving shared vision requires fathers' awareness and understanding of daughters' career interests and the attenuating influences of gender biases. Communication is fundamental to this awareness and understanding. Fathers might also help daughters develop a vision for the family business by presenting opportunities for daughters to be involved in meaningful activities in the business. This exposure may boost daughters' domain specific self-efficacy, or self-efficacy relating to leading the family business. Mentoring actions would also be helpful to daughter succession. These may include psycho-social support (Kram, 1983) or introducing her to key players in the business such as managers, bankers, lawyers, accountants, suppliers and customers. In turn, daughters may enhance domain specific self-efficacy by taking deliberate steps to prepare to lead the family business. These activities may include taking business/management courses, gaining experience in business and in the specific industry, and developing a strategic perspective through exposure to business-wide decision making. They may seek nomination to serve on the boards of small companies or nonprofit agencies or join industry-specific associations and gain connections. Daughters may then leverage their business knowledge to develop a vision for the future of the company that they share with their father and others. Finally, daughters who perceive that their fathers have very strong gender biases might find support among professionals the father or other family members trust (Barnes, 1988).

Supplementary Material

The Supplementary Material for this article can be found online at: http://journal.frontiersin.org/article/10.3389/fpsyg.2015.00625/abstract

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 19 May 2015
doi: 10.3389/fpsyg.2015.00646

Shared vision promotes family firm performance

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A clear picture of the influential drivers of private family firm performance has proven to be an elusive target. The unique characteristics of private family owned firms necessitate a broader, non-financial approach to reveal firm performance drivers. This research study sought to specify and evaluate the themes that distinguish successful family firms from less successful family firms. In addition, this study explored the possibility that these themes collectively form an effective organizational culture that improves longer-term firm performance. At an organizational level of analysis, research findings identified four significant variables: Shared Vision (PNS), Role Clarity (RCL), Confidence in Management (CON), and Professional Networking (OLN) that positively impacted family firm financial performance. Shared Vision exhibited the strongest positive influence among the significant factors. In addition, Family Functionality (APGAR), the functional integrity of the family itself, exhibited a significant supporting role. Taken together, the variables collectively represent an effective family business culture (EFBC) that positively impacted the long-term financial sustainability of family owned firms. The index of effective family business culture also exhibited potential as a predictive non-financial model of family firm performance.

Keywords: shared vision, family business, effective culture, firm performance, predictive model, family functionality, role clarity

OPEN ACCESS

Edited by:
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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *02 October 2014*
Accepted: *03 May 2015*
Published: *19 May 2015*

Citation:
Neff JE (2015) Shared vision promotes family firm performance. Front. Psychol. 6:646. doi: 10.3389/fpsyg.2015.00646

Introduction

Family owned firms represent a significant portion of the U.S. economy, contributing nearly two-thirds of the gross domestic product, and employing 60% of the domestic workforce (Astrachan and Shanker, 2003); yet the field of family business research is relatively new (Bird et al., 2002). Most researchers take a particularly narrow, conventional approach to measuring the performance and predicting the success of family firms—often relying solely on financial data (Westhead and Cowling, 1998), which is rarely available for private family owned companies and often does not tell the whole story. While some analysts have attempted to use non-financial measurements to assess family firms, no one has created a multidimensional, non-financial assessment that measures the performance and predicts the sustainability of family owned companies.

This research attempts to break new ground by uncovering and understanding the precise portfolio of non-financial indicators that predict the long-term success of a family owned business. It is acknowledged that profit is necessary for the long-term sustainability of any business organization; however, research that uses profit maximization or ROI as the only measure of success of a family owned business usually falls short.

Prior research that relies on purely financial metrics is often limited to publicly traded companies, because of easily accessible financial performance data

(Anderson and Reeb, 2003; Villalonga and Amit, 2006; Miller et al., 2007). Such research leaves out a huge population of companies, as most family owned businesses are privately held and rarely disclose financial details. Even when they do, the numbers may be misleading because many owners put non-financial benefits above profit (Tagiuri and Davis, 1992; Dunn, 1995; Paige and Littrell, 2002; Walker and Brown, 2004). Such measures also underestimate the role that culture plays in how a family business functions (Schein, 1996). Some multidimensional performance metrics, such as the balanced scorecard (Kaplan and Norton, 1992), paint a more complete, realistic picture of family firm performance, but tend to focus only on past performance.

Given the desire most family business owners have to keep their businesses alive for several generations (James, 1999), a predictive tool that measures current performance and the long-term sustainability of the family firm based on factors other than financial performance could be very useful to owners, as well as to researchers and advisors working with family owned companies (Neely et al., 1995; Corbetta and Salvato, 2004). Therefore, this research sets out to create such a tool by quantifying the findings of a previous qualitative study that identified several non-financial traits that, when combined, seemed to be associated with higher levels of organizational success (Neff, 2009). The present study uses a research technique similar to that used in previous research (Denison and Mishra, 1995) to explore whether specific cultural traits within an organization may be useful predictors of performance and effectiveness.

The findings from this study suggest that the performance of private family firms is, indeed, driven by a more complex set of priorities than those that drive their publicly traded and non-family owned counterparts. While financial success is certainly important to them, family firms appear to be highly motivated by non-financial goals—goals that reflect the complexity and interaction of the family and business systems (Davis and Tagiuri, 1989; Tagiuri and Davis, 1992). More recent research suggests that socio-emotional wealth may encompass the broad goals of family firms, rather than specific financial results such as firm profit maximization. In the family business context, socio-emotional wealth has been defined as the non-financial aspects of the firm that meet the family's affective needs, such as a sense of identity, perpetuation of the family firm, etc. (Gómez-Mejía et al., 2007).

Nature and Performance of Family Owned Firms

The most distinguishing characteristic of the family owned business is the presence and interaction of the family system with the business system (Beckhard and Dyer, 1983; Kepner, 1983; Chua et al., 1999). The family's culture and the owners' non-financial motivations for being in business can have a profound effect on company performance—sometimes positive, sometimes negative (Dyer, 2006). For family firms to be sustainable, the relationship between the family and the business must be symbiotic and synergistic (Chua et al., 2003).

Unfortunately, there are very few details on the performance of private family owned companies because researchers tend to gravitate toward public family run companies, which are required to release financial data. Researchers also say that these firms tend to perform better than non-family owned firms in the United States (McConaughy et al., 1998; Anderson and Reeb, 2003; Lee, 2004, 2006; Villalonga and Amit, 2006). The opposite appears to be true in Europe and Asia (Claessens et al., 2002; Maury, 2006), perhaps because the definition of "family owned firm" varies from continent to continent (Westhead and Cowling, 1998; Miller et al., 2007). Further research by Miller et al. (2007) concluded that publicly traded family run businesses often get weaker once the founding member/generation is no longer in control (Miller et al., 2007).

Research on private family companies is less common, and the studies available are not always consistent with each other. What may be gleaned is that there is a wide spectrum of motivation among owners and managers and that the family personality (culture) can be a competitive advantage or disadvantage, depending on the circumstances. Emerging research also suggests that to evaluate the success of family owned companies by looking only at financial performance can distort the true value the business provides to the family. "Financial measures of family firms might be understated since they do not reflect the private benefits owners earn from their firms" (Astrachan and Zellweger, 2008, p. 7).

Spectrum of Motivation

There are families who are in business primarily to make a profit; however, other families may run their business mostly for the private benefit of the family or other non-economic outcomes. "Scholars have suggested that family firms display a strong preference toward non-economic outcomes such as autonomy, firm survival, or family harmony" (Astrachan and Zellweger, 2008, p. 11). One researcher has developed a tool to measure outcomes such as "family independence and satisfaction, tight-knit family, respect in the community and child and business development" (Mitchell et al., 2003). In a study of successful family owned companies, Tagiuri and Davis (1992) found that owners also put goals such as development of quality products, social advancement, good corporate citizenship, work-life balance, and job security on par with or ahead of profit goals.

The problem with these non-monetary goals, according to some researchers, is that they can "run counter to the optimal decisions for the business" (Bertrand and Schoar, 2006), dampening the bottom line, skewing the company's reported financial results, and shortchanging some minority and non-controlling shareholders. For example, family executives' emotional attachment to historical but unproductive assets or practices may negatively impact firm competitive advantage through delayed resource shedding decisions (Sharma and Manikutty, 2005). Still, others say that so-called "private benefits" are not necessarily detrimental to the firm itself or to minority shareholders, as some family owners are able to balance non-financial benefits and financial considerations effectively (Ehrhardt and Nowak, 2003).

Again, beyond these broad findings, there is little mention of or consensus on variables that will predict the success or failure of a family owned company. For example, in 2009, Yu et al. reviewed 212 research articles about family businesses

studied over a 10-year period and found 259 different dependent variables (DVs) within seven interest domains, which included performance, strategy, environment, governance, succession, family roles, and family outcomes. So while research into family firms is becoming more prevalent, there remains a need for a holistic model that can appropriately analyze family firm performance (Sharma, 2004).

Family Firm Culture

In addition to the owners' motivations, a family's culture can have a significant effect on how its business operates. In their book *In Search of Excellence*, Peters and Waterman (1982) popularized the notion that organizations have personality characteristics that can be harnessed as a competitive advantage (Lief and Denison, 2005). Previous research has indicated that organizational culture is particularly positive if it is valuable, rare, and difficult for other firms to duplicate (Barney, 1986; Zahra et al., 2004).

A company's culture typically starts with the founder and his/her vision and values, which can create a strong sense of shared purpose, identity, and destiny—keys to success in any business, family owned or not. It appears, though, that family owned companies tend to adhere to the founder's original purpose and that purpose can linger into future generations even after the founder's death (Denison et al., 2004). Such a strong cultural foundation can have a positive effect on the performance of a family owned business, but also it needs to be flexible (Denison et al., 2004). Next-generation owners and managers will bring their own talents and perspectives to the leadership role, and the culture that can adapt to the new style will be more likely to thrive (Eddleston, 2008).

Long-Term Performance and Family Business Sustainability

The sustainable family business model (SFBM), which guided this study, creates a framework for assessing the long-term performance of private family business. It is built on the paradigm of overlapping systems—family and business (Stafford et al., 1999). It also recognizes the unique dependency and interaction between the family system and the business system. The model suggests that the family owned business is a single system in which the complex dynamics inherent in how families operate will affect the performance and growth of the business (Olson et al., 2003). For example, the family may provide additional capital or labor to the business during times of financial distress. Also, the business may influence how the family members interact with each other. For example, the family may need to discuss what if any distributions are made from the business to family owners. According to the SFBM, for a family owned business to be sustainable, the business and the family must be successful (Stafford et al., 1999).

While the SFBM informed this study, the present research framework is more narrowly focused on the business system and the influences, organizational and familial, impacting long-term performance. The SFBM does not identify specific elements of the business system influencing long-term firm performance and sustainability. A significant goal of this study was to evaluate specific cultural characteristics of the business system.

Because the family system is a key and unique aspect of family businesses, the relationships among family members may have an influence on the long-term success of the business, as acknowledged by the SFBM. Further development of the SFBM recognizes that change or "disruptions" are natural and that the boundary between family and business is where adjustments are made (Werbel and Danes, 2010); therefore, the functionality of the family system may influence this adjustment process and the ultimate sustainability of the family business. Family businesses are heavily influenced by their founder and his or her vision for the business can exist across subsequent generations (Kelly et al., 2000). Such a vision, shared across the organization may play a role in the long-term success of the firm. Also because of the central role of the founder and family, a higher sense of trust and confidence in firm management may positively influence long-term performance. Inherent in the nature of family business, where family members juggle multiple roles (owner, employee, family member, etc.) the clarity in one's work role and lack of conflicting priorities may aid the long-term performance of the firm. Personal development, external learning opportunities, and a general commitment to learning may also aid the long-term performance of a family firm by improving human capital, raising awareness of the firm's external environment, and building a culture of continual learning. The next section builds on these themes and specifies the measures used in this research in order to identify specific firm characteristics that drive performance, particularly for private family firms.

Material and Methods

Current Research

The key questions driving this research are: What organizational traits influence financial performance in family owned firms? Do certain non-financial performance indicators align with perceived financial results of a family owned firm? Do these organizational traits compose a predictor variable of financial performance? The conceptual research model is shown in **Figure 1**. The model implies that both organizational traits and family traits influence an effective family business culture. The effective family business culture influences long term financial performance of the firm.

While the focus of this research is longer-term business sustainability, the model uses perceived firm performance as its dependent variable. The model accounts for the fact that profit is a necessary outcome, though not the only outcome, for a successful family owned business. In this model, non-financial organizational traits are components of family firm sustainability, and these factors align with and support sustained financial performance. Because the SFBM states that the business and the family must be strong, this study examines the organizational traits that may support the business system while including influence from the family system. The research model constructs are described below.

Trust

Inherent in the nature of family owned businesses is the intense emotional connection among family members (Tagiuri and

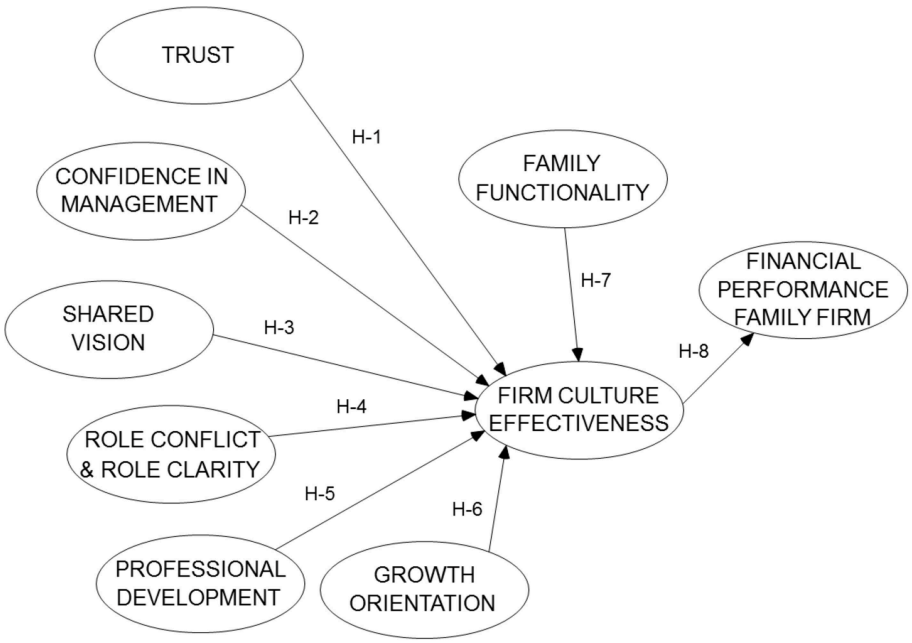

FIGURE 1 | Research model.

Davis, 1996) and when that connection is based on deep trust, the family system and the company benefit (Sundaramurthy, 2008). Trust is the foundation on which social capital is built (Bubolz, 2001). High trust within the family may reduce the transaction costs of exchange by lowering monitoring costs and opportunism (Steier, 2001).

Non-family employees believe the owning family is the firm (Neff, 2009); therefore, if the family is trustworthy, the business is trustworthy. This is different than conjectured by Sundaramurthy (2008, p. 95), who wrote, "…interpersonal trust cannot be sustained without confidence in the system that governs key interpersonal exchange." The family may also serve as a "constellation of role models" within the firm (LaChapelle and Barnes, 1998). In this study, trust was measured with a scale adapted from Schoorman et al. (2007) as well as Mayer and Davis (1999). It included the sub-dimensions of benevolence and integrity.

Hypothesis 1: Trust will have a positive influence on an Effective Family Business Culture.

Confidence in Management

In a family business, employees' confidence in management is a key factor. It is distinct from the Trust hypothesis because it focuses on management's ability to achieve its stated objectives. Churchill and Hatten explain: "Trust in this sense involves knowing the goals or objectives another will try to attain. Confidence involves knowing the other is capable of attaining these objectives" (1997, p. 64).

While confidence in the ability of management is linked to trust, it may also reflect the level of experience and capability of family firm management. Management's capability to lead their organization may also be characterized as human capital that has a positive influence on family firm performance (Dyer, 2006). Also, if there is a positive sense of management's competence or ability, a higher sense of organizational efficacy may be present. Organizational efficacy, a firm level construct, may be considered equivalent to self-efficacy at the individual level and may be useful in examining organizational functioning at the strategic business level (Gist, 1987). In a study of suppliers to an American University in the Southwest, greater levels of organizational efficacy in family and non-family firms were associated with higher performance (Stanley and McDowell, 2014).

In the qualitative study that informed this research, confidence in the abilities of other employees was a distinct theme, separate from the trust between family and non-family employees; therefore, the Confidence in Management construct was separated from other elements relating to trust. It focuses on the assessment of the ability of the firm's leadership or top management team to be successful. Confidence in management ability was measured by a scale adapted from Mayer and Davis (1999).

Hypothesis 2: Confidence in Management will have a positive influence on an Effective Family Business Culture.

Shared Vision

Shared Vision is central to the long-term success of any organization. The idea of an organizational Shared Vision was first articulated by Senge as an important aspect of maintaining a vibrant and successful organization over the long run (Senge, 1990). Shared vision bonds organizational

members together through a common desired future. Value-laden visions were associated with greater affective organizational commitment among organizational members (Dvir et al., 2004). The aspirational nature of such a Shared Vision also directs the energy of the organization in a positive manner. A Shared Vision inspires the entire organization to hopefulness and success (Boyatzis and McKee, 2005).

Managing through a Shared Vision can have a wide-ranging positive impact on an organization—improving performance, promoting change, providing a foundation for a strategic plan, motivating individuals, and providing a context for decisions (Lipton, 1996). Other research suggests that Shared Vision occupies a core role in the team innovation process (Pearce and Ensley, 2004), plays a role in promoting extra-role or championing behavior in mergers and acquisitions (Clayton, 2009), amplifies the impact of emotional intelligence in both IT team engagement (Mahon, 2008), and physician leadership (Quinn, 2012).

Shared Vision is also critical in the family business context. According to Ward (1997), "…the best practice that is most important to long-term family business growth is [defining] family purpose and mission, family values, and the motivations and rationale for continued business ownership" (p. 335).

According to Lansberg (1988) and Ward (1997), owners should explicitly communicate their succession plan, painting a clear, viable picture of what the company will look like once the next generation takes control (Lansberg and Astrachan, 1994), especially if more than one member will be in a leadership position (Hoy and Verser, 1994). Including members of that next generation in the strategic planning process is also critical to keeping the family's vision alive (Mazzola et al., 2008). Shared Vision can also be the guiding force in the strategic renewal of family firms (Boyatzis and Soler, 2012). Shared Vision not only strengthens the company, it can unite family members—whether or not they are employed in the business—and can reduce unproductive conflict among family in the firm (Kellermanns and Eddleston, 2004).

The scale used to evaluate the Shared Vision construct is from Boyatzis (2008). The complete scale consists of three dimensions: Shared Vision, Compassion, and Overall Positive Mood (Boyatzis, 2008). This research project used only the Shared Vision portion of the scale.

Hypothesis 3: Shared Vision will have a positive influence on an Effective Family Business Culture.

Role Clarity/Role Conflict

Role clarity results from clear behavioral and performance expectations for a work role and role conflict results from incompatibility of a work role with personal values or multiple roles that conflict with each other (van Sell et al., 1981). Role clarity and role conflict have been extensively studied and research has linked them to a variety of correlates including job performance (Tubre and Collins, 2000). In the family business context, it is common for family member employees to be confused about their roles in the company. Members often play several roles simultaneously—such as owner, employee, manager, parent, sibling, child, etc. (Gersick et al., 1997). In this complex environment, the expectations of these roles may not be clear, or may even be in conflict (Sundaramurthy and Kreiner, 2008). Indeed, family businesses face conflict from many sources, including role ambiguity and role conflict (Harvey and Evans, 1994). For some roles, family harmony may be more important, while for others, return on investment may take precedence. Such role conflict (Memili et al., 2013) and/or lack of clarity may interfere with family business performance.

The Role Clarity/Role Conflict scale used in this research was originally developed by Rizzo and House (Rizzo et al., 1970). It should be noted that in their original conceptualization, Rizzo and House refer to role conflict and role ambiguity. For this study, role ambiguity has been re-characterized using the term role clarity. The original role ambiguity scale items, all refer to clarity rather than ambiguity; therefore, the construct label has been changed to Role Clarity to align with the scale items and avoid reverse scoring. While this characterization is not common, the inconsistency between the construct label and item wording has been noted in previous research (Tracy and Johnson, 1981). The scales are designed to capture the extent to which individuals may understand what is expected of them (clarity) and whether or not the roles they play are inconsistent with their own values or with each other (conflict) (van Sell et al., 1981).

Hypothesis 4: Role Clarity/Role Conflict will have a positive/negative influence, respectively, on an Effective Family Business Culture.

Professional Development and Networking

The education and experience that individuals bring to an organization can affect how successful the organization is—so can the extent to which they are able to continue to learn and grow. This research focused on two sub-dimensions of organizational development: perception of the firm's commitment to human capital development and the extent to which employees engage in personal development through professional networking to develop relationships with industry peers and other members of the community. On an individual level, engagement in professional activities is associated with career success (Forret and Dougherty, 2004). Family owner/managers who are connected to people and resources outside the family—including customers, suppliers, and other industry participants—may be able to stay abreast of valuable market intelligence and new business opportunities. Resources for the ultimate success of the family firm are constrained by relying too heavily on the limited human capital stock of the family (Sirmon and Hitt, 2003). The scales utilized to capture organizational development were adapted from the commitment to organizational learning scale (Calantone et al., 2002) and the networking behavior scale (Forret and Dougherty, 2001).

Hypothesis 5: Professional Development and Networking will have a positive influence on an Effective Family Business Culture.

Growth Orientation

A firm's orientation toward growth may be a factor in its long run performance. For example, the growth aspirations of small business managers were associated with actual growth (Wiklund and Shepherd, 2003), and this effect was enhanced by higher manager education and experience. In the family firm context, some long lived family firms survived without growth but their survival was attributed to special circumstances; including tightly controlled ownership, stable competitive environments, and little technological change (Ward, 1997). With little a priori knowledge of these conditions, growth may be necessary to avoid stagnation and decline of a family business. While family firms face special challenges to achieve growth (Ward, 1997), Miller et al. (2008) found no difference in market growth expectations and actual growth between small private family firms and their non-family counterparts (Miller et al., 2008). This construct seeks to measure perceptions of the organization's capacity to grow and management's ability to spur that growth. This construct also measures perceptions of certain performance indicators: sales volume, employment growth, and investment in capacity/technology.

The Growth Orientation scale used in this research comes from Poza et al. (2004). It is anticipated that Growth Orientation within family firms would be positively associated with financial performance and would influence the overall effectiveness of the organization. In addition, other included items related to the perceived importance of common performance metrics, such as sales volume, employment, and investment for the future, as adapted from previous research (Rutherford et al., 2006).

Hypothesis 6: Growth Orientation will have a positive influence on an Effective Family Business Culture.

Family Functionality

Fundamental to the SFBM is the recognition of the interplay between family and business. To capture the influence of the family on the business, the family APGAR scale is used to measure family functionality. This scale was originally developed in a clinical setting to assess the functional integrity of families and the functional health of patients' families. The APGAR acronym comes from the five functional components of adaptability, partnership, growth, affection, and resolve. The instrument measures a person's satisfaction with the five basic components of family function (Smilkstein, 1978). The APGAR instrument revealed a Cronbach-alpha (CA) of 0.82 in its original research assessment.

While the APGAR scale was developed in the medical field, it has been used in family business research (Danes et al., 1999; Avery et al., 2000; Danes and Olson, 2003; Danes and Lee, 2004). While it is not a complete measure of family success as described in the SFBM, a certain level of family functionality is necessary to avoid any negative effect of the family on the business. Also, higher levels of family functionality as measured by the family APGAR were associated with greater success in achieving the family's most important family goal (Danes et al., 1999).

Hypothesis 7: Family Functionality will have a positive influence an Effective Family Business Culture.

Firm Culture Effectiveness

This is a second-order construct of the seven independent constructs discussed above. The hypothesis suggests that the independent variables of Trust, Confidence in Management, Shared Vision, Role Clarity/Role Conflict, Professional Development, Growth Orientation, and Family Functionality collectively form a composite second-order construct. This research seeks to test whether this construct, which is termed "Effective Family Business Culture" (EFBC), will have a positive effect on the financial performance of family owned firms.

A key aspect of this research is to investigate the EFBC construct as a composite indicator of firm financial performance in the context of family owned firms. It may be that the EFBC is a second-order formative construct. In that case, it is anticipated that the model independent variable constructs cause EFBC rather than reflect its presence. The independent variable constructs such as Growth Orientation, Shared Vision, and Family Functionality may be seen as influencing EFBC. It may not be as clear if other constructs, such as Trust or Confidence in Management, cause or reflect EFBC. Beyond the direction of causality, other factors are indicative of a formative relationship. The components of formative constructs may not necessarily co-vary as with reflective indicators and will be examined during survey data analysis. Also, formative indicators are not interchangeable, and the removal of one or more indicators can alter the nature of the formative construct. In addition, the antecedents of formative indicators may not align as they should with reflective indicators (Jarvis et al., 2003).

Hypothesis 8: An Effective Family Business Culture will have a positive influence on the Financial Performance of a Family Business.

Table 1 summarizes the testable research hypotheses included in the model.

Control Variables

It has been widely discussed that family firms vary in size and complexity. To address potential influence, this study included both firm size, as measured by total employment, and firm age, as indicated by each firm's founding year, as control variables. In addition, firm financial performance may also be influenced by its particular industry; therefore, industry is included as a control variable using the North American Industry Classification System (NAICS).

Data Collection and Preparation

Research participants were identified from private databases, and responses were collected through an online survey. The three main national databases included a graphic arts industry publication, a commercial business database service, and a list of private firms solicited by an online survey company. This approach may lessen selection bias issues when using a convenience sample. The ratio of family owned and operated

TABLE 1 | Research hypotheses.

Hypotheses
H1: Trust will have a positive influence on an Effective Family Business Culture.
H2: Confidence in Management will have a positive influence on an Effective Family Business Culture.
H3: Shared Vision will have a positive influence on an Effective Family Business Culture.
H4: Role Clarity/Role Conflict will have a positive/negative influence, respectively, on an Effective Family Business Culture.
H5: Professional Development and Networking will have a positive influence on an Effective Family Business Culture.
H6: Growth Orientation will have a positive influence on an Effective Family Business Culture.
H7: Family Functionality will have a positive influence on an Effective Family Business Culture.
H8: Effective Family Business Culture will have a positive influence on the Financial Performance of a Family Business.

businesses to non-family owned businesses in any of the databases was not known. Other researchers have estimated that the overall percentage of family owned businesses (public and private partnerships and corporations) in the United States is approximately 60% (Astrachan and Shanker, 2003).

Survey Response Rates

The graphic arts industry database maintains an opt-in e-mail list of approximately 7200 individuals. While the ratio of family owned and managed firms to non-family owned firms was not available, a recently published figure from the Printing Industry Association indicated that, on average, 60% of printing firms characterize themselves as family-run enterprises. Based on this statistic, the e-mail list would have approximately 4320 family firms. Survey links were emailed in three phases, approximately 2 weeks apart. A total of 47 responses were received, 37 of which were complete, resulting in response rates of 1.1 and 0.9%, respectively.

To mine the commercial business database, software provided allowed the search of each firm's profile for such phrases as "family firm" or "family business." This resulted in a list of 1229 companies that were sent a letter directing interested participants to an online survey. Later, two reminder postcards were sent at 10-day intervals. Sixty-four were returned as undeliverable; 33 firms responded that they were not family owned businesses; and eight declined to participate in the survey. A total of 43 companies completed the survey, and 15 partially completed it. Based on all responses received from these mailings, the proportion of family owned and managed firms on the list would be approximately 67%. The surveys returned suggest an overall response rate of 7.4%. Forty-three of the surveys received were usable, resulting in a final 5.5% response rate.

The third set of responses came from the online survey company, which asked 1300 owner-run private businesses to participate in this research and provided responses from 79 companies. Of the 79, 28 did not self-classify as family managed, and three only partially completed the survey. This left 48 completed surveys from companies that self-identified as family firms. Based on the survey response, the implied percentage of family firms in this sample would be 64.5%. If this percentage of family owned and managed firms applied to the entire group of 1300 solicited firms, then 838 firms would fit the criteria of this study; therefore, the 48 completed surveys would represent a response rate of 5.7%.

The final tally of completed surveys included 110 firms, with a single respondent per firm. It should be noted that the overall response rate in this study was low; however, this seems to be an issue for this field of study, and low participation rates for surveys of private family firms are common (Winter et al., 1998). Reasons cited for low response rates include a reluctance to divulge financial details, difficulty in identifying private family firms, and a difficulty identifying appropriate participants within such firms. The Winter et al. (1998) study cited a 1997 Arthur Anderson/MassMutual national survey of family businesses that reported a response rate of 10.3%. The Winter et al. (1998) study also reported that prior surveys by MassMutual in 1993, 1994, and 1995 had even lower response rates.

Data collection began in October 2009 and ended in April 2010. Two of the three data sources did not permit follow up with non-respondents. Non-respondents from the third data source gave such reasons as "no interest in participating," "lack of time to dedicate to completing the survey," and "a policy of non-disclosure of firm financial information."

Sample

The research sample consisted of 110 senior executives from firms that self-identified as being family owned and having family members active in firm management. **Table 2** details both the respondent and firm characteristics.

Measures

The survey contained 110 questions and all of the independent variable construct items were adapted from previously established scales. See the Appendix in Supplementary Material for a complete list of survey items by construct, with references to their sources. All independent variables used a five-point Likert scale. The dependent variable items, also in the Appendix in Supplementary Material, related to multiple facets of performance, including sales growth, profit level, and overall firm growth over a 3-year period. The dependent variables used a seven-point Likert scale. Respondent perceptions of their firm's recent 3-year performance were contrasted against perceived long-term trends of their own firms as well as against perceived performance of major competitors. The study intended to conduct a broad assessment of firm performance across multiple dimensions and from various perspectives in order to achieve a more holistic measure of performance.

Results

Data Collection and Analysis

Study methodology included data screening and exploratory factor analysis (EFA), using SPSS, and structural equation modeling using partial least squares (PLS). PLS works well with

TABLE 2 | Survey respondent and firm characteristics.

Level of analysis	Characteristic	Sample data
Respondent	Gender	71.8% Male 28.2% Female
	Age	53.6% Older than 50 years old 20.9% Between 40 and 50 years old 25.5% Younger than 40 years old
Firm	Generation	32.7% First generation 32.7% Second generation 34.6% Third generation
	Ownership	80.4% Fewer than five owners 19.6% More than five owners
	Voting control (owns >50% voting)	57.9% Single person 42.1% More than one person
	Family employees	81.1% Fewer than five family employees 18.9% Five of more family employees
	Industry (NAICS codes)	30.3% Manufacturing 17.4% Retail 10.1% Wholesale trade 8.3% Construction 6.4% Fin/Ins/Real Estate 2.8% Transport/Warehouse 1.8% IT services 22.9% Other
	# of Employees	70.6% Fewer than 50 14.7% Between 50 and 250 14.7% More than 250

smaller sample sizes and for the inclusion of formative constructs. PLS also is useful in analyzing data that do not conform to the restrictive statistical assumptions of other analysis techniques. Finally, PLS is useful in developing predictive models (Chin, 1998). A bootstrapping technique, with 500 resamples, tested the significance of path coefficients (Chin, 1998). Bootstrapping is a non-parametric technique built into PLS to improve model estimation by calculating sampling error and generating *t*-values (Lowry and Gaskin, 2014).

Missing Values and Normalcy of the Data

In almost all cases, missing values were replaced by the mean of the particular item. Several independent variables (nine of 74) had missing values in excess of 10% of the total responses; however, for one particular construct, the benevolence sub-dimension of the Trust scale, all six construct items had very high missing values, ranging from 27.3 to 39.1%. These particular questions dealt with an employee's relationship to his or her supervisor and may have been confusing to owner-operators who do not have a direct supervisor. These items were excluded from further analysis.

An analysis of the independent variable items indicates the presence of non-normal data. Forty of 74 items had standardized skewness values in excess of ± 3.00, indicating a fairly high degree of non-normality. Standardized values of Kurtosis were less so, with 13 of 74 items in excess of ± 3.00. Further tests using the Kolmogorov–Smirnov and Shapiro–Wilkes normality tests also suggest non-normal data, as all items for both tests were significant at the 0.001 level.

Exploratory Factor Analysis (First-Order Factors)

Due to the relatively high number of constructs and survey items compared to the sample size of 110, an EFA on all constructs could not be performed simultaneously. As most of the independent variable constructs have been previously established, partial EFA was used to verify the validity of the constructs in the context of this research. Principle axis factoring (PAF) was employed for the EFA extraction method to evaluate the first-order independent variable constructs. Oblique rotation using Promax was used to account for potential correlation of items within a given construct (Field, 2005).

The initial EFA assessed the construct items for suitability in this research, as exhibited by high factor loadings (0.60 and above) and low cross loadings with other construct items (no cross loadings above 90% of factor loading). The results are in **Table 3**. More than 79% of the items (53 of 67) exhibited moderate to high factor loadings in excess of 0.40. Six of the nine cross-loaded items involved reverse-scored questions, which can cloud EFA results. Given that all scales are established constructs from prior research, it was decided not to alter the item makeup based on the EFA outcomes; however, two of the constructs, Growth Orientation (GO) and Signs of Growth (GOs), showed cross loadings among two of four and one of three items, respectively. These constructs may warrant close monitoring in subsequent analysis.

In addition, constructs were evaluated using Cronbach-alpha (CA), in **Table 4**. This analysis indicates that with one exception, CA-values for the research constructs exceeded 0.70, and most exceeded 0.80, which indicates a high level of convergent validity among the independent variable construct items. The lone exception involved the GOs construct, which had a CA-value of 0.438, well below a common threshold of 0.70 (Field, 2005). In addition, the elimination of the most problematic items in this scale only marginally improved the overall CA; therefore, the GOs construct was eliminated from subsequent analyses.

Measurement Model

This research sought to identify non-financial drivers of family firm financial performance. As a result, the focus was on the explanatory power of the first- and second-order constructs on the firm performance DVs. From the initial model in **Figure 1**, all non-significant paths were removed from the independent variables to the second-order construct, EFBC. In the final model, see **Figure 2**, five first-order independent variables remain along with the EFBC construct. The APGAR construct exhibited no direct significant effect on the EFBC construct; however, the APGAR construct had a highly significant and positive effect on the first-order independent variables; therefore, its influence on EFBC appears to be fully mediated through the Shared Vision

TABLE 3 | Summary EFA analysis on first-order constructs.

EFA group	Construct name (Abbreviation)	KMO	Bartlett sphericity	Variance explained (%)	Total # of items	# of Factor Wts. >0.60	# of Factors >0.40 and <0.60	# of Factors <0.40	Cross loading >0.90
1	Role clarity (RCL)	0.825	0.000	52.2	6	4	1	1	0
1	Role conflict (RCN)				7	4	3	0	0
2	Confidence in Mgt. (CON)	0.924	0.000	64.4	6	6	0	0	0
2	Trust integrity (TI)				6	5	0	1	1*
3	Commit org. learning (OLC)	0.802	0.000	52.6	6	4	1	1	0
3	Professional networking (OLN)				4	2	1	1	0
4	PEA – compassion (PNC)	0.854	0.000	61.9	6	1	2	2	3*
4	PEA – overall positive mood (PNM)				6	4	0	2	2*
4	PEA – Shared Vision (PNS)				8	4	2	2	0
5	Family functionality (APGAR)	0.783	0.000	57.6%	5	3	2	0	0
5	Growth orientation (GO)				4	2	0	2	2
5	Signs of growth (GOs)				3	2	0	1	1

**Involves reverse scored items.*

TABLE 4 | Construct reliability.

Construct name (Abbreviation)	Cronbach alpha	Improved by	If delete item…
Role clarity (RCL)	0.819	n.a.	n.a.
Role conflict (RCN)	0.863	n.a.	n.a.
Confidence in management (CON)	0.907	n.a.	n.a.
Trust integrity (TI)	0.854	0.007	TI4r
Commit org. learning (OLC)	0.792	n.a.	n.a.
Professional networking (OLN)	0.725	n.a.	n.a.
PEA – compassion (PNC)	0.801	n.a.	n.a.
PEA – overall positive mood (PNM)	0.884	n.a.	n.a.
PEA – shared vision (PNS)	0.860	0.003	PNS2
Family functionality (APGAR)	0.812	0.007	APRG5
Growth orientation (GO)	0.759	n.a.	n.a.
Signs of growth (GOs)	0.438	0.050	GOs2

(PNS), Role Clarity (RCL), and Confidence in Management (CON).

Based on the final model, the results from the tested hypotheses are summarized in **Table 5**.

Convergent and Discriminate Validity

As seen in **Table 6**, the independent variable constructs exhibited high composite reliability in excess of 0.80, which indicates an acceptable level of scale reliability. **Table 7** reports the between-construct correlations along with the Average Variance Explained (AVE) square root (bold diagonal values). For the most part, the values indicate clear discriminate validity among the independent variable constructs; however, two variable pairs did not exhibit clear differences. These pairs included the Shared Vision to Confidence in Management, as well as Role Clarity to Confidence in Management variables. This is an area of concern when considering the possible impact on the predictive potential of the final model. Unclear discriminant validity suggests the possibility of redundant constructs. As noted in further analysis below, the final model did not exhibit multicolinearity among the independent variables.

Interaction Effects

The final model also indicates a significant interaction effect between Family Functionality (APGAR) and Role Clarity (RCL) variables. The paths from the interaction term to the dependent variables have negative path weights and are both significant at the 0.05 level, supporting the presence of a moderating effect. The strength of the moderating effect can be assessed by comparing the model R-Squared with and without the moderating variable (Henseler and Fassott, 2010). The moderating variable seems to have a nearly moderate level impact of 0.132 on the performance-trend dependent variable, and 0.158 on the performance-competition dependent variable, based on criteria described in previous research (Chin et al., 2003).

Using a two-way graphic, interpretation of this interaction is more clearly illustrated. In **Figures 3**, **4**, high levels of Role Clarity (RCL) in the presence of low Family Functionality (APGAR) yield higher levels of firm financial performance. While in the simultaneous presence of high Role Clarity combined with high Family Functionality, firm performance is slightly reduced. The data also indicate that when Role Clarity is low, the addition of high Family Functionality has only a slight positive effect on firm performance.

Model Predictive Value

One of the advantages of PLS is in developing predictive models. As with other regression-based approaches, the final model R-Squared magnitude of more than 50% is one indication of the explanatory potential of the research model. The PLS blindfolding procedure, based on the Stone–Geisser test, can further evaluate the predictive validity of the final research model. **Table 8** indicates blindfold test results greater than zero, suggesting the final structural model has some predictive relevance (Chin, 2010).

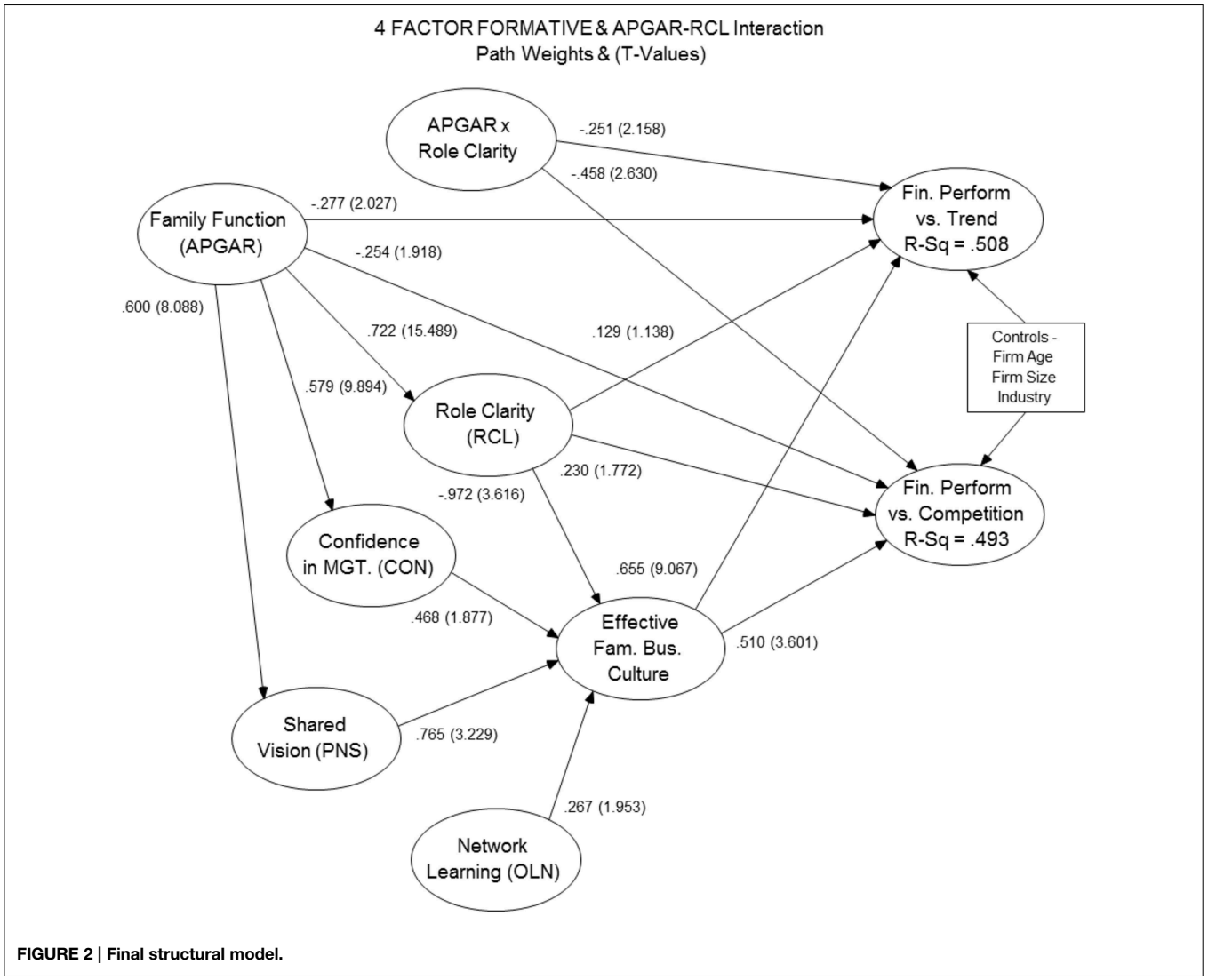

FIGURE 2 | Final structural model.

In PLS modeling with formative constructs, multicolinearity can be a significant issue. High levels of multicolinearity among the components of a formative index imply a redundancy among index variables and cloud assessment of the influence of a particular variable. Among the four independent variables that compose an EFBC, the second-order formative construct—the maximum variance inflation factor came to 2.884, as seen in **Table 9**, and is well below the common cut-off threshold value of 10 (Diamantopoulos and Winklhofer, 2001); therefore, multicolinearity did not affect the inclusion of the four independent variables. So despite the lack of clear discriminant validity among some of the independent variables, the lack of multicolinearity indicates little construct redundancy in the final model.

Discussion

The objective of this study was to investigate potential organizational drivers of financial performance in private family owned and managed companies through multivariate statistical techniques as suggested by Westhead and Cowling (1998). This research contributes to the understanding of family firm performance by using PLS and complex constructs operationalized at a higher level of abstraction (Sarstedt et al., 2014). The initial research model hypothesized that multiple independent variable constructs form a second-order formative factor, which can influence overall firm financial performance. The first of three findings of this research project involves the significant influence of a new second-order formative construct, effective family business culture (EFBC). Similar to Denison and Mishra (1995), the EFBC construct is focused on cultural traits that influence long term family firm performance and is not fully inclusive of the domain of family firm culture (Denison and Mishra, 1995). Analysis indicated that EFBC is highly significant and has a strong positive effect on overall firm performance. As a formative construct, the non-financial EFBC could be useful in predicting family firm performance since objective financial data is difficult to obtain from private family firms (Mazzi,

TABLE 5 | Hypotheses test outcomes.

Hypothesis	Model outcome	Performance model hypotheses
H1	Not supported	Trust will have a positive influence on an Effective Family Business Culture.
H2	Supported	Confidence in Management will have a positive influence on an Effective Family Business Culture.
H3	Supported	Shared Vision will have a positive influence on Effective Family Business Culture.
H4	Not supported	Role Clarity/Role Conflict will have a positive/negative influence, respectively, on an Effective Family Business Culture.
H5	Partially supported	Organizational Development and Professional Networking will have a positive influence on an Effective Family Business Culture.
H6	Not supported	Growth Orientation will have a positive influence on an Effective Family Business Culture.
H7	Not supported	Family Functionality will have a positive influence on an Effective Family Business Culture.
H8	Supported	Effective Family Business Culture will have a positive influence on the Financial Performance of a Family Business.

2011; Carney et al., 2013). Relatively good results from the variance inflation factor and blindfold tests support the potential predictive power of this construct.

Another research contribution is the identification of the specific components of EFBC. These included four first-order reflective constructs: Confidence in Management (CON), Shared Vision (PNS), Role Clarity (RCL), and Professional Networking (OLN). The constructs did not exhibit excessive cross correlation to the EFBC construct and were significant at the 0.10 level or higher. Shared Vision exhibited strong significance as well as the highest positive impact on EFBC. Two of the remaining three independent variables (CON and OLN) were found to have a positive influence on EFBC; however, the role clarity construct (RCL) revealed a negative influence on EFBC, contrary to initial expectations. This surprising finding suggests that Role Clarity in the context of family firms has a dampening effect on effective culture and, thus, firm performance. In addition, the integrity dimension of trust did not exhibit a significant impact on EFBC and therefore did not support the first hypothesis. While some research has linked integrity as a component of trust, with firm performance (Davis et al., 2000), the unique context of family business may require a more nuanced approach. Trust in family firms may be different than non-family firms due to the presence of familial relationship-based trust (Sundaramurthy, 2008). Schoorman et al. (2007) suggest that it may be appropriate to specify additional model elements in unique contextual settings. Family business may represent such a setting and further investigation may be needed to better understand the relationship between the elements of trust and firm performance.

The conceptual interpretation of the formative construct, EFBC, shows an interesting variety of components. Shared Vision, representing a desired future, shared across the organization, may represent a foundational element, giving direction and energy toward a desired and common organizational future. Other research found that Shared Vision influences firm performance (Calantone et al., 2002). Confidence in Management ability, suggests the importance of having talent and experience to achieve that vision within the organization's management team. Owners with management and industry experience are positively associated with firm performance (Dyke et al., 1992). In their study, Dyke et al. (1992) also found that having business owner parents was not associated with higher firm performance; though the authors did not address family business successor owners. Family firms with the intention of keeping the business in the family have greater opportunity to develop successor owner/mangers, for example, by involving the next generation in strategic planning (Mazzola et al., 2008). Role Clarity is typically viewed as a positive attribute and on an individual level is positively related to job performance (Tubre and Collins, 2000). Other research indicates that a lack of Role Clarity is a source of tension among business-owning couples (Danes and Olson, 2003). The negative impact of Role Clarity on firm performance in this research might suggest that Role Clarity may have an element of rigidity and is therefore detrimental to an EFBC. Finally, the contribution of Professional Networking suggests that to the extent that such activity develops human capital (Hitt et al., 2001) and enhances social capital (Sirmon and Hitt, 2003); long term firm performance is improved. Networking activity may also reflect an external orientation that supports entrepreneurship through increased knowledge, aiding opportunity recognition (Zahra et al., 2004).

Finally, investigation revealed a significant interaction effect between Family Functionality (APGAR) and Role Clarity (RCL). Results suggest that through the two-way interaction (**Figures 3**, **4**), high Role Clarity is associated with superior firm performance in the presence of low Family Functionality; however, when Family Functionality is high, firm performance is weaker when Role Clarity is also high. So while greater Role Clarity is a common recommendation from family business research and practitioners (Dana and Smyrnios, 2010), the data suggest that high Role Clarity is not universally positive. For closely held family firms, Role Clarity may be a helpful substitute in the absence of high-functioning family owner/managers; however, when the owning family is already highly functional, high Role Clarity may stifle entrepreneurial adaptation with cumbersome or counterproductive bureaucratic structure impeding long-term performance. These findings illustrate the importance of the boundary between family and firm (Davis and Stern, 1981), where roles and rules are negotiated (Danes et al., 2008). The inclusion of the APGAR construct also addresses a need in family business research to specifically include family-related variables (Dyer, 2006).

Given the prominence of the family in the context of family owned businesses, it was anticipated that Family Functionality would play a meaningful role in firm culture; however, analysis revealed that while Family Functionality did not display a direct influence on the second-order construct—EFBC—the effect seemed to be fully absorbed by three of the independent variables;

TABLE 6 | Convergent and discriminant validity.

Construct (abbreviation)	Average variance explained (AVE)	Composite reliability	R-square	Cronbach alpha	Communality	Redundancy
Family functionality (APGAR)	0.557	0.862	–	0.799	0.557	–
Confidence in management (CON)	0.667	0.923	0.335	0.899	0.667	0.222
Professional networking (OLN)	0.543	0.824	–	0.719	0.543	–
Shared vision (PNS)	0.502	0.887	0.361	0.851	0.502	0.179
Role clarity (RCL)	0.518	0.863	0.521	0.808	0.518	0.259
Effective family business culture (EFBC)	–	–	0.936	–	0.129	0.115
Perf. vs. comp.	–	–	0.493	–	0.242	(0.012)
Perf. vs. trend	–	–	0.508	–	0.345	(0.024)

TABLE 7 | Construct correlations matrix.

Construct	APGAR	CON	OLN	PNS	RCL	Eff. FB culture	Perf. vs. comp.	Perf. vs. trend
APGAR	**0.747**							
CON	0.579	**0.817**						
OLN	0.172	0.289	**0.737**					
PNS	0.600	0.747	0.405	**0.708**				
RCL	0.722	0.703	0.154	0.630	**0.720**			
EFBC	0.082	0.433	0.562	0.610	−0.120	–		
Perf. vs. comp.	−0.022	0.252	.249	0.314	0.003	0.504	–	
Perf. vs. trend	−0.083	0.211	.336	0.330	−0.115	0.649	0.594	–

Square root of AVE on bold diagonal. APGAR, family functionality; CON, confidence in management; OLN, professional networking; PNS, shared vision; RCL, role clarity; EFBC, effective family business culture; Perf. vs. comp., Firm performance vs. competition; Perf. vs. trend, firm performance vs. historical trend.

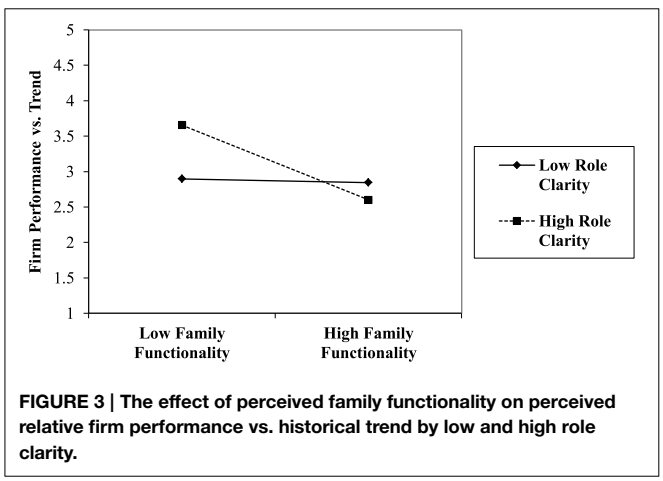

FIGURE 3 | The effect of perceived family functionality on perceived relative firm performance vs. historical trend by low and high role clarity.

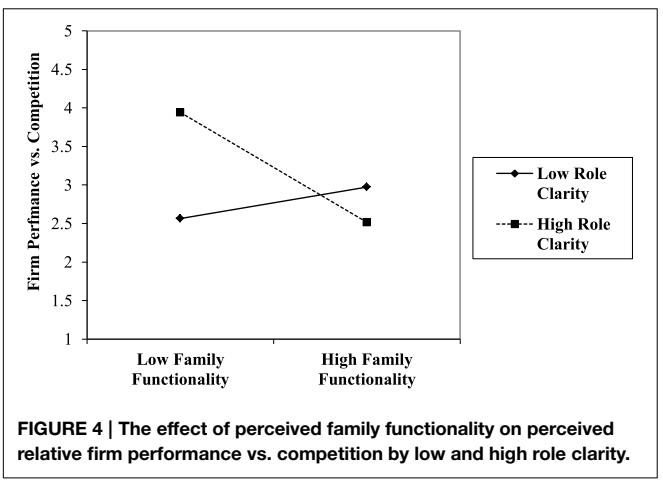

FIGURE 4 | The effect of perceived family functionality on perceived relative firm performance vs. competition by low and high role clarity.

Confidence in Management, Shared Vision, and Role Clarity. Family Functionality exhibited very strong positive influence on these independent variables with highly significant path weights. While the presence and impact of family in the family firm context is foundational to the field, these findings suggest a more nuanced impact. This relationship may illustrate the manner in which family firms differ from non-family owned firms.

Limitations

The researcher acknowledges certain limitations of this study. First, it examined only private firms that were family owned and family operated. While these companies compose a significant portion of family firms, the findings may not be generalizable to all family firms. Also, any comparison with non-family firms is beyond the scope of this research. Second, the respondents self-classified as family firms and their definition of "family firm" may not be consistent across the sample. Third, the majority of respondents were male, and data on ethnicity was not collected. The sample, therefore, may not be diverse. A fourth limitation of the study is its cross-sectional design. The theoretical focus of the SFBM is the long-term performance and sustainability of

TABLE 8 | Construct cross-validated redundancy.

	SSO	SSE	1-SEE/SSO
CON	660.000	520.006	0.212
PNS	880.000	739.222	0.160
RCL	660.000	511.329	0.225
EFBC	2640.000	2257.967	0.145
Perf. vs. comp.	660.000	549.304	0.168
Perf. vs. trend	660.000	606.466	0.081

CON, confidence in management; PNS, shared vision; RCL, role clarity; EFBC, Effective family business culture; Perf. vs. comp., firm performance vs. competition; Perf. vs. trend, firm performance vs. historical trend; SSO, sum of squares observed; SSE, sum of squares error.

TABLE 9 | Variance inflation factors.

Dependent variables	Independent variables			
	CON	OLN	PNS	RCL
CON	–	2.003	1.204	1.739
OLN	2.884	–	2.366	2.210
PNS	2.202	1.086	–	2.093
RCL	2.238	2.450	1.187	–

CON, confidence in management; OLN, professional networking; PNS, shared vision; RCL, role clarity.

the family firm. While this study contributes to the development of the SFBM, future research using longitudinal designs may be necessary to fully understand the longer-term sustainability of family owned firms. Finally, the study examines performance perceptions over a 3-year timeframe, not actual performance over that time-frame. Respondents' performance recollections may be imperfect or biased.

Conclusion, Contribution, and Future Research

The results of this study have implications for theory and practice. The study identified four significant non-financial organizational traits as firm performance drivers, which addresses a need in the development of the SFBM. The performance index, composed of these traits, impacted long-term firm performance and exhibited some predictive potential. Further development of this model may provide a tool for the evaluation of private family firm performance without the need for detailed financial records which is an ongoing challenge for researchers (Mazzi, 2011). Future research using multiple respondents from each family firm may add to the understanding of findings revealed in this study. This may allow, for example, evaluation of the extent to which vision within an organization is truly shared. Also, further research is needed to fully understand the implications of the SFBM's focus on long-term sustainability rather than on long-term financial performance. Additional understanding of the dynamic between the family and business systems is needed from the perspective of long-term sustainability, such as the role of family capital (Danes et al., 2009). For practitioners who work with family firms, such findings may prove helpful in the development of family firms. For example, creation of a meaningful Shared Vision, as well as developmental and Professional Networking activity, may represent important processes for the continued success of their family firm clients.

This study represents an initial exploration and specification of some components necessary for a successful and sustainable family business. While study findings may contribute to the intermediate-term financial success of family businesses, additional work is also needed to broaden its scope to include non-financial goals of family firms, such as family harmony or satisfaction with the business. Finally, the surprising finding regarding Role Clarity, role rigidity, and family relationship dynamics merit further investigation. One possibility might be to inquire about the potential non-linear impact of Role Clarity on firm performance similar to the findings of family involvement and firm performance (Sciascia and Mazzola, 2008). In addition, the culture or ethnicity of the family may influence the flexibility or rigidity of work roles in a family business. So while this exploratory study identified some organizational traits associated with long-term family firm performance, further research is needed for a complete understanding of the long-term success of family firms.

Supplementary Material

The Supplementary Material for this article can be found online at: http://journal.frontiersin.org/article/10.3389/fpsyg.2015.00646/abstract

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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ORIGINAL RESEARCH
published: 14 April 2015
doi: 10.3389/fpsyg.2015.00443

The role of personal purpose and personal goals in symbiotic visions

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It is believed that symbiotic visions can drive employees and organizations toward a common objective based on the premise that people have a high level of self-motivation and engagement when they are working toward something very personal. The field of organizational development has been aspiring to help organizations and people align their visions for decades without much, if any, empirical support for the role of personal purpose and goals in the symbiotic relationship with a company vision. This qualitative study examines the role personal purpose and goals play in how high performing leaders align to their company's vision. Whether and how senior managers articulate this alignment, and its correlation to their motivation and engagement, was examined. An observation was that most senior managers within organizations with a well-developed and widely known higher purpose vision are driven by something personal, identified as either personal goals or a personal purpose. One of the key findings is that personal purpose and goals, when aligned to a company vision, appear to impact motivation and engagement in different ways. When alignment is felt through the sense of the greater purpose, there is a deep, almost spiritual, commitment to making the world a better place and helping the organization contribute to that. This seems to motivate them to guide the organization toward its higher purpose vision. When alignment is felt through the organization's alignment to one's personal goals, there is a great sense of commitment to completing the steps or tasks necessary to move toward the vision, yet a clear delineation between work and life ambitions.

Keywords: higher purpose, calling, meaning, vision, shared vision, motivation, engagement, relationships

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Edited by:
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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *26 November 2014*
Accepted: *29 March 2015*
Published: *14 April 2015*

Citation:
Berg JL (2015) The role of personal purpose and personal goals in symbiotic visions. Front. Psychol. 6:443. doi: 10.3389/fpsyg.2015.00443

Introduction

Certain people appear to be motivated and engaged in achieving an aspirational purpose or personal goal such that it aligns their efforts, their thinking, and their decision making. The contemporary research on the topics of purpose, company vision, motivation and engagement is prolific. Duffy and Dik (2013) referenced approximately 40 recent studies on the topic of purpose and calling and the connection to work-related and general well-being (Duffy and Dik, 2013). Also, there are numerous practitioner books on using purpose, calling, and vision to reach the heart of an employee, such as *Purpose and Meaning in the Workplace* (Dik et al., 2013).

Yet, even if individuals are externally motivated by a company's vision and are working in a stimulating environment, they are still unlikely to experience the intrinsic motivation, engagement, and fulfillment that comes from working toward the accomplishment of one's own personal ambition (Boyatzis and Akrivou, 2006). Consider that often, at work, one is coached to comply with someone else's vision (Boyatzis et al., 2012); working hard to be the underling their boss wants them to be

in order to contribute to the goals of the organization. Instead of advancing toward one's personal definition of who they want to become, their ideal self, employees are working toward an "ought self," or the understanding of what one should be based on someone else's vision (Boyatzis and Akrivou, 2006). Through the development of the self-determination theory and the need for competency and autonomy, Deci and Ryan (2000b) contributed to understanding motivation in the social context; explaining that experiencing motivation and engagement by embracing someone else's vision may very well work for a while. Boyatzis and Akrivou (2006) advanced the understanding by discovering that one can be perfectly content working toward someone else's goal or objectives until one realizes that their personal dreams are being compromised because this "ought self" does not match their ideal self. This awakening leads to feelings of betrayal and frustration for having wasted energy pursuing the dreams and expectations of others. This creates what Boyatzis (2008) called negative emotional attractors (NEA) which have an adverse effect on motivation and engagement (Boyatzis and Akrivou, 2006).

This study is timely for businesses because employee commitment to the organization, connection to its purpose and engagement at work are all cited as major motivators of people staying in a company (Ashforth and Mael, 1989; Kapoor and Meachem, 2012). From the individual's perspective, it has long been identified in the literature that the work one does is significant to a person's sense of meaning and identity. In *Purpose and Meaning in the Workplace*, the editors pull from work all the way back to Adler in 1931 and Erikson in 1963 to support their statement that, "Along with love, play, and community, work at its best offers a core context for construction of self and contributing to society in ways heartfelt, personally meaningful and socially relevant" (Dik et al., 2013, p. 17). Yet, there is limited empirical support for the role one's personal ambitions play in the symbiotic relationship to a company's higher purpose vision.

Research Question

This research is about understanding the roles personal purpose and goals play in the symbiotic relationship with their company's vision. To be able to understand personal purpose and goals it was important to minimize the other variables. Because it would be expected that high performers are already motivated and engaged, interviewing high performers allowed me to focus on the nature of personal purpose and goals without the added complexity of whether motivation and engagement exist. The research question for this study is: What are the roles of the personal purpose and goals of high performing leaders in symbiotic relationships with their company's higher purpose vision?

Literature Review

The understanding of purpose has evolved quite significantly over the past 60 years. Prior to the 1959 publication of Frankl's book *Man's Search for Meaning*, purpose and meaning were understood to be a way of adapting and not as a motivator toward change (Damon et al., 2003). Frankl was the first to identify purpose and meaning as more than derivatives of motivation by recognizing them as the drivers used to overcome circumstances (Frankl, 1959).

Personal purpose, meaning and calling are often interrelated (Elangovan et al., 2010), and/or used interchangeably with each other (Boyatzis and Akrivou, 2006; Duffy and Dik, 2013). Elangovan et al. (2010) indicates that purpose and calling hold many of the same attributes, such as hope and a focus on others, based on an inner desire to stay true to oneself and to do the right thing, make the world a better place or pursue a well-meaning goal (Elangovan et al., 2010). When working toward a "calling," one receives personal gratification (Novak, 1996) and a sense of personal purpose (Hall and Chandler, 2005). It is personal and the tasks are more enriching (Cardador et al., 2011), which is intellectually and emotionally stimulating (Bakker et al., 2008). McKnight and Kashdan (2009) describe purpose as a "centralized, self-organizing life aim that organizes and stimulates goals, manages behaviors, and provides a sense of meaning" (p. 242). Whereas, a calling is thought to be bestowed upon one by a higher power or a response to a strong inner passion, and a purpose is discovered or found, calling and purpose both drive action and define one's identity (Elangovan et al., 2010).

Recent research has made some progress deconstructing and discerning meaning and purpose. Rainey cited much of the research already referenced as well as work by Heintzelman and King (2014), Hicks, Cicero, Trent, Curton, and King (2010), and Rockind (2011) to conclude that the "two are distinct phenomena that differ in their orientation toward cognition or action and in their temporal framing. Meaning and purpose are separate, albeit highly related, constructs that build off of one another so as to contribute to the broader concept of the 'good,' or meaningful life" (Rainey, 2014, p. 22). This deconstruction connects meaning to an integration of the past, present, and future whereas purpose is a future directed element of meaning that may not integrate past and present (Baumeister et al., 2012).

In addition to being future directed, the construct of purpose is becoming more understood to include doing something that a person feels driven to do in which the benefactor or benefactors are not themselves (Duffy and Sedlacek, 2007). Damon et al. (2003) characterized a sense of purpose as denoting a course that is personally meaningful and beneficial to the greater society.

In this study, I sought to explore the impact of purpose, separate from both a calling from a higher source and making meaning through an integration of past experiences, while still holding to the elements of purpose that appear to have consistently emerged in psychological literature. For this study, I defined personal purpose as: *a deliberate choice to pursue a future directed intention that is personally meaningful, and beneficial to the greater society, that influences one's goals and behaviors.*

Motivation and Engagement

Engagement and motivation often go hand in hand (Kapoor and Meachem, 2012; Tillott et al., 2013). In this study, motivation and engagement were both selected as variables because they appear to be relevant to achieving personal aspirations, but in different ways. In existing research, motivation is connected to determination, while engagement is linked to a state of awareness. Motivation is what creates action and drive (Berlyne, 1964), whereas

engagement is the state of mind and energy committed to that action and accomplishment (Kapoor and Meachem, 2012).

Motivation has been associated with harnessing personal drive in several theories developed over time. Maslow's need for self-actualization created a foundation for personal motivation with his statement that, "What a man can be, he must be" (Maslow, 1943, p. 380). This statement infers that self-actualization drives one to work toward what one "could" be. Herzberg (1968) made a big contribution to the understanding of motivation by introducing the contrast between extrinsic (e.g., external rewards) and intrinsic motivation (e.g., personal sense of achievement or connection with the work itself). With the exception of the external impact of relationships, this study is primarily about intrinsic motivation.

It appears that the more personal the accomplishment, or intrinsic the center of causality, the higher the motivation to excel. Mallett and Hanrahan applied the social-cognitive theory of motivation in the context of elite athletes. In their study, they concluded that elite athletes "were highly driven by multiple personal goals and, in particular, self-determined motivation" (Mallett and Hanrahan, 2004, p. 198). They found a noticeable difference in the effort and drive in athletes that wanted to succeed because of personal ambition vs. athletes that were driven by external forces and rewards. In essence, the more the locus of causality is internal, the higher the degree of self-determination (Mallett and Hanrahan, 2004).

The understanding of engagement has evolved over time as well. In developing his construct of personal engagement and disengagement, Khan built upon existing literature on "person to role" relationships done by Lawler and Hall 1970, Lodahl and Kejner, 1965, Mowday et al., 1982, Porters et al., 1974, Blauner, 1964, and Seeman 1972 (Kahn, 1990). He articulated the terms *personal engagement* and *disengagement* to "refer to the behaviors by which people bring in or leave out their personal selves during work role performances" (Kahn, 1990, p. 694). The term *engagement* was later defined by Harter, Schmidt and Hayes as a person's involvement in and satisfaction with their work (Harter et al., 2002). A *high* level of engagement is the result of being stimulated, positive and fulfilled with a strong sense of meaningful pursuit and dedication (Bakker et al., 2008). Engagement was defined by Bakker et al. (2008) as a positive and pleased state of mind, categorized by vigor, commitment, and captivation, commonly understood to generate higher levels of energy and a strong connection to work. Boyatzis, Smith, and Beveridge also connected engagement with increased energy, focus and drive through their research on "Positive Emotional Attractors." They validated this theory by linking PEA to physical stimulation—identifying the physiological activation that occurs during the actual experience of an elevated state of engagement, hopefulness, and future orientation. When reaching for a personal vision one is engaged, emotionally and physically, in moving toward an overarching goal. The goal becomes meaningful and purposeful enough to impact their energy, their focus and their drive (Boyatzis et al., 2012). This is also supported by the evidence that the desire to achieve one's "ought self," or the self that we feel we ought to be, is less than the desire to reach for our ideal self. When we are working to accomplish a goal or vision that is not our own, we are less driven (Higgins, 1987; Boyatzis, 2008).

This is relevant because it exposes a gap in potential engagement and motivation when the vision or purpose individuals are striving to achieve belong to someone else (e.g., another person or an employer). This is relevant because it illustrates there may be a difference between the individual who is striving to achieve a company vision that is not their own, and the individual who is striving to achieve their personal purpose through the work they do for an organization.

Connecting Purpose to Motivation, Engagement, and Performance

There is a strong desire to embrace purpose as illustrated by the popularity of Rick Warren's book *The Purpose Driven Life*, which by its tenth anniversary had sold more than 60 million copies. The connection of purpose to motivation, engagement and performance is already established. The positive psychology movement that studies the flourishing aspects of psychology connects purpose to motivation, engagement and performance, recognizing both purpose and calling as sources to motivation, drive toward, and commitment to, an accomplishment (Seligman and Csikszentmihalyi, 2000; Damon et al., 2003). Embracing a calling, purpose or personal vision in one's vocation, as well as the feeling of living out a calling, is linked to a positive work experience and well-being (Duffy and Dik, 2013). And an increased level of meaning or purpose is connected with work gratification (Bonebright et al., 2000), life fulfillment, well-being (Zika and Chamberlain, 1992) and happiness (Debats et al., 1993). Organizations in which employees experience a higher level of engagement have increased levels of performance than organizations that do not (Macey and Schneider, 2008). Shuck and Rose (2013, p. 343) take this even further by discovering that "engagement and performance are a secondary consequence to work that is interpreted as meaningful and purpose-driven."

Company Vision and its Connection to Motivation, Engagement, and Performance

The definitions of company vision vary but they all contain elements of an ideal future state. Vision is a desired state of products, services and an organization that a leader wants to realize (Bennis and Nanus, 1985). It is an idyllic and distinctive representation of the future (Kouzes and Posner, 1987). Vision is a desired state that represents or echoes the collective values of an organization (House and Shamir, 1993). A vision helps define why people should, and how people will, act with regards to performance, decisions, and dealing with conflict (Reilly, 2008).

Empirical evidence about the connection between vision and performance is mounting. CEOs with a vision significantly outperformed CEOs that were not leading their organization with a vision (Baum et al., 1998). A study of mergers and acquisitions (M&A) demonstrates that vision is a critical factor leading to successful performance, particularly during initial phases of M&A when companies are expected to recover acquisition costs and generate a return on investment (Clayton, 2009). Neff demonstrated the positive correlation between vision and the success

of family businesses (Neff, 2011). Vision was also highlighted as a determining factor that enables daughters to overcome gender bias and become successors in family businesses (Overbeke, 2010). A longitudinal study by Baum et al. (1998) found a causal effect of vision and vision communication on organizational-level performance. The directional effects in their study support that vision is an impactful factor in company performance (Baum et al., 1998).

Vision drives motivation (Mirvis et al., 2010) and is connected to both motivation and engagement through the work of Boyatzis and Akrivou (2006) who validated that vision, at both the individual and organizational levels, is a key element in successful, sustainable change which drives engagement and meaning.

Even more effective is a shared vision which allows for the incorporation of different perspectives within the organization, creating buy-in and support (Kapoor and Meachem, 2012; Tillott et al., 2013).

The concept of a personal higher purpose, introduced by Duffy and Sedlacek (2007) as one in which the benefactors are not themselves, could be applied to organizations. The concept is that a higher purpose vision positions a company to build a financially sustainable organization that creates both social good (e.g., making the world a better place) and social capital (e.g., trusting and committed relationships with all stakeholders) (Beer and Norrgren, 2011). A higher purpose goes beyond generating only profits and shareholder value (Mackey and Sisodia, 2014).

Relationships

Relationships are very relevant to this study on the personal, social, and organizational level. According to Van Oosten (2006), supportive and trusting relationships are the fulcrum that allows change to take place. Positive relationships are correlated with a greater degree of engagement, commitment, and retention (Dirks and Ferrin, 2002). In the intentional change theory, relationships actually facilitate the movement through each discovery that brings about purposeful change. A correlation was identified between the pursuit of the ideal self and the physiological effect it has on neural circuits, appetite for learning and the emotional state of elation; all increasing the level of engagement around one's dreams, hopes, and strengths (Boyatzis and Akrivou, 2006).

Social identity and its correlation to relationships appear to be important in the work environment. Social identity is defined by Ashforth and Mael (1989) and Boyatzis and Akrivou (2006) as the relationships one has with groups with which one is connected. Tajfel (1982) began his early work on social identity theory in the 1960s through the identification of one's self to his or her group memberships. Although the initial context was to explain the tendency to elevate one's self image by identifying with groups or categories, the framework has been extended. Boyatzis and Akrivou validated the connection between group relationships to elements of individual performance and organizational direction, beyond the original connection to self-elevation.

The intentional change theory establishes that positive, energizing relationships are not only critical in supporting change but a sense of group identity is an important element in the construct of shared vision (Boyatzis and Akrivou, 2006). Identification with the social identity of an organization facilitates the internalization of company values and beliefs (Ashforth and Mael, 1989). Ashforth and Mael referenced research already done on social identities within the organizational framework when they wrote that, "Organizational identification has long been recognized as a critical construct in the literature on organizational behavior, affecting both the satisfaction of the individual and the effectiveness of the organization (Brown, 1969; Hall, Schneider and Nygren, 1970; Patchen, 1970; Lee, 1971; Rotondi, 1975; O'Reilly and Chatman, 1986)" (Ashforth and Mael, 1989, p. 20).

The literature illustrates that the constructs of personal purpose, company vision, motivation, engagement, and relationships have been emerging over time but there appear to be enough common elements in their definition to use as a foundation for gaining a greater understanding of the nature of personal purpose and goals when a company's vision is symbiotic with the aspirational purpose or goals of the individuals.

Method

I am exploring the role purpose and goals play in symbiotic relationship with a company vision, so a qualitative approach was used, allowing for an abstract theoretical exploration of the social experience (Charmaz, 2012).

A cyclical process of gathering data, coding, reflection and review through memos was used to allow theoretical ideas, categories, and themes to emerge. The themes were then examined for validity against the codes.

Data was gathered through interviews with open ended questions; allowing the interview process to be flexible, and the conversation to flow and evolve. The interviews were designed to pull out stories and personal experiences that illustrated connections between personal purpose, goals, corporate vision, positive relationships, engagement and motivation. Understanding that one's personal purpose is often evolving and changing, the questions were intended to capture the connections between their understanding of their personal purpose or goals at that time. The questions used during the interview process are listed in the Appendix—Supplementary Materials.

Because the literature indicated that even in the academic world the words purpose, meaning, calling, and driver are often used interchangeably and are considered interrelated, I was careful not to focus on just the word "purpose" during the interview.

The research was done in the context of high performing, senior leaders in U.S., for-profit organizations. Because I wanted to observe the way people articulated the role personal purpose and personal goals played in the alignment to, or possibly a symbiotic relationship with, a company's higher purpose vision, I selected a group that would most likely already be aligned to their company's vision.

I sought out companies that had a higher purpose statement that was communicated publicly. A higher purpose statement was defined as an articulated vision statement that is future directed and beneficial to the greater society. Companies with a published higher purpose statement were identified through personal networks and publications that recognized businesses as having a higher purpose vision. The initial quantity of possible candidates was large to assure there were enough companies that

fit the criteria. Each recommendation was vetted to meet the definition of higher purpose by researching the company online, reviewing company literature, as well as asking people within the industry, and within the organization, to determine if the company indeed had a higher purpose that was shared within the company.

To assure a large enough pool of people to be interviewed, it was important that each company had multiple layers of management, enough breadth to include more than six high performing leaders, and an established performance review process. The organizations in which I conducted interviews all had annual sales revenue above $600 million.

I conducted interviews within four companies that met the criteria, and provided geographical and industry diversity. I was introduced to the CHRO, company president or divisional vice-president by mutual acquaintances. They connected me with an internal resource who identified members of the senior leadership team considered to be high performers. High performers were defined as individuals who had received an "exceeds expectations" or the equivalent rating on their performance reviews as established within the individual organizations, or were identified as high performers by their supervisor.

One of the outcomes of the goal-setting theory is that goals refer to important future outcomes and therefore, the selection of goals infers a desire to achieve a purpose or consequence; and success is associated with one's ability to pursue and accomplish goals that are important and meaningful (Locke and Latham, 2006). Because a person may have a goal to accomplish a personal purpose it was important to find people who interpreted success through the completion of the task or goal as well as people who were motivated to complete the task only if it led to a much greater purpose. In order to have two different groups for comparison purposes, I selected a sample within each organization that included people who were considered by their supervisor as primarily goal/task driven as well as people who were considered purpose driven.

Very early on it became clear that when the only choice a supervisor was given to describe the primary driver was purpose or goal, the perception of purpose was more favorable. Only 30% of the people interviewed were identified as goal driven by their supervisor. One statement made during an interview reflected this negative connotation of being goal driven:

> "I mean, not goal driven the way that some people are, and as an example meaning, I want to be worth this by a certain date or I want to have this kind of house by, or I have a Lamborghini by the time I am this age. I don't have goals that overt that I need to be—I need to have this particular title by a certain age. I don't have goals like that" 4-6.

Through the axial coding process, distinct themes emerged but the categorization of the responses did not always match up with the original classification of goal or purpose driven as provided by their supervisor. Saldana discusses allowing conceptual frameworks to emerge from within the data (Saldaña, 2013). It became apparent early on in the process of coding interviews that the way people responded to the first question was creating such a conceptual framework. The first question I asked the participants was, "What is important to you, motivates you to hop out of bed in the morning, and/or provides purpose or meaning to your life?" Two very distinct categories emerged. The phenomenon of the role personal purpose and personal goals had on symbiotic visions was clearly differentiated within two distinct areas of context, with the context being an individual's primary driver. This is supported by the statement that thematic sampling depends heavily on the quality of the data which is influenced by the setting or context (Boyatzis, 1998).

To eliminate the possibility of misclassifications by the supervisor due to possible negative connotations with being goal driven, and to avoid projecting, I identified a related and unbiased classification that could be applied to the subject's responses. Although I am really studying goals vs. purpose, the task vs. socio-emotional drivers construct (Boyatzis et al., 2014) is closely related and created an unbiased classification. This categorization was selected because it represents the contrast between being task or goal driven vs. future or purpose directed.

The way participants responded to the first question indicated their inclination for having task or socio-emotional/future oriented tendencies. Task-positive preferences are connected to being goal oriented and include a predilection for goal achievement, problem solving, decision making and the ability to control actions. Respondents were classified as task positive if their answers included being motivated by being acknowledged or appreciated for the work completed, maintaining balance, seeking opportunities, the work they do or solving problems. Socio-emotional preferences are much more future or purpose directed and are linked to social cognition, creativity and an openness to new ideas (Boyatzis et al., 2014). Respondents were classified as socio-emotional if their answers included being motivated by one's passion, making the world better, the desire to make a difference and helping others in need. **Table 1** illustrates sample responses for each category.

Eleven participants gave task positive responses and thirteen participants gave socio-emotional responses. One hundred percent of the participants who gave responses indicating socio-emotional preferences were perceived by their supervisor as being purpose driven. Yet only 55% of the participants who gave responses that would indicate a task positive preference were perceived as goal driven. When a participant gave more than one response, in all cases both responses fell into the same category. To assure I did not use the responses to this question in the coding process, the responses to this first question were removed from the coding process. The remainder of the questions were used for the qualitative analysis.

Sample

Twenty-four people were interviewed; seven interviews from one company, six interviews from two companies and five interviews at a fourth company. The interviews averaged an hour in length. Because of the narrow focus of my study, after twenty two interviews no new themes were emerging and it was not necessary to expand the interview pool beyond 24.

TABLE 1 | Sample responses by group.

Group 1—Task positive—11 respondents	Group 2—Socio-emotional—13 respondents
Responses indicating a Task Positive Nature	Responses indicating a Socio-emotional Nature
I love solving problems, I love taking things that are ambiguous and putting together a plan and attacking.	I get inspired by just making a difference. I love to engage.
Ultimately (I am) trying to find the right balance between work and life.	I am most excited and want to do more of hands-on connections with those who are in need.
My primary driver is—it's sort of self-absorbed and altruistic at the same time because I like being recognized and I like being appreciated.	I would say what gets me out of bed in the morning as far as employment goes is really understanding the long-term vision and believing in it and having a passion for it.
I think what drives me is a problem that doesn't have a solution. Ultimately, pulling resources and digging deep.	For me it was about the overall concepts, working for the greater good of something.

TABLE 2 | Descriptors applied to sample.

Industry sector	# of Participants	% of Total
Food service	5	20.8
Oil and gas	6	25
Consumer goods	6	25
Distribution	7	29.2
YEARS WITH COMPANY		
1–5	5	20.8
6–10	10	41.7
11–15	4	16.7
16+	5	20.8
LEVEL WITHIN THE COMPANY		
Manager	7	29.2
Director	9	37.5
Sr. Leader	2	8.3
C-Suite	6	25
GENDER		
Female	12	50
Male	12	50

Fourteen interviews were conducted face-to-face in a quiet location selected by the participant. Eleven interviews were conducted over the phone with the participant finding a quiet location that would allow them to reflect without interruption. IRB protocol was followed to assure consent, accuracy and confidentiality. Seventeen participants were based out of their corporate office and seven were based in other cities, outside their corporate headquarters location, around the United States. Participants were located in the states of Ohio, Illinois, Michigan, Massachusetts, New York and Wisconsin. After the interview, participants were categorized by industry, tenure at their current company, level within the company and gender, as illustrated in **Table 2**, to see if any of these descriptors impacted or contributed to the themes that emerged.

The interviews were coded using an open coding, exploratory approach as recommended by Saldaña (2013). I coded and sorted the interviews manually as well as electronically utilizing the web application Dedoose. After completing an initial coding on all interviews, interviews were reviewed to verify that consistent coding was applied. Focused coding was used to synthesize large sections of data (Glaser, 1978), such as stories, and axial coding was used to identify the frequency of common themes and the existence of dominant themes (Strauss, 1987). All coding was done blind to the initial criterion to see if themes emerged. The interviews were tracked with a two-digit identifier.

Results

Four distinct themes emerged with a noticeable difference in how people responded based on their tendency to be task driven or socio-emotional: reference, motivational driver, temporal perspective and life/work integration vs. separation.

Reference Context—Task Driven People Appear to Be More Self-referent Whereas People That Gravitate toward Being Socio-emotional Appear to Be More Other-referent

One hundred percent of the respondents in the task positive group made one or more references to why something was important to, or impacted, them personally and/or how they put things through a self-referent lens before making decisions. Following are examples of responses that included a reference to themselves in how they choose to make decisions or validate a decision they had made.

> "Sadly I didn't want the argument of having to deal with her being mad at me so I didn't do that" 3-6.

> "It is something I like to do for myself" 3-5.

> "I enjoy the leadership role not so much for the authority or for being in charge or whatever, but knowing that people are looking to me for direction" 1-7.

> "How I validate myself, is my ability to help an organization get the information it needs and solve challenges" 4-5.

The socio-emotional group was more other-referent. Ninety-two percent of the respondents' comments were about how they are impacted by others and how their decisions are based on the needs or wants of other people.

> "I always hope that I never put myself first, that is like the biggest thing for me is to always put other people first always, always, always" 4-1.

"And so when I see someone buzz through that and they think, wow, wait a minute, I just did this. I didn't think I could do it. What else can I do? And that gets me excited" 4-4.

"Another thing I guess I'd say I'm passionate about is getting people to be inspired to find whatever niche it is that they have the skill set and have the passion for" 2-5.

"I just made up my mind going home that day that I was not going to live a life where I couldn't really make an impact... the other thing that I really like about my job over the first 26 years is really helping people to get on a career path and make a difference in their life that way" 2-2.

"So I'm hoping that I'm able to inspire people to find what they can do within their own capabilities" 1-3.

One person in the socio-emotional group commented on how their personal needs were important but in the same sentence referenced the needs of others:

"I like to work so I can live. I think a balance is very important. I do enjoy working for a company that values people, I compare (my last company) and (my current company). At (my last company) when I first started, people were indeed resources, and resources are precious and you—you're trying to protect them. And over time, we had become assets and assets can be faded out and sold. And here, I think people are still the most important resource. And that's a really key part of the culture" 3-4.

A few of the statements from the self-referent group included others but in the same thought the person also referenced themselves. For example:

"I hate to ask for things. Like, as a single mom, I hate to ask for someone to watch my kids. I hate to have to say, can you please—would you help me. I know how that feels. And I'm sure that other people that are in need sometimes may not feel good about asking for help, but if you are showing them how to take care of themselves, everyone wants to be able to take care of themselves and have some dignity" 1-6.

Self-referent and other-referent comments were fairly equally distributed across all other descriptors.

Primary Motivational Driver—Individuals That Are Inclined to Be More Task Oriented Appear to Be More Motivated by the Actual Goal or Milestone Whereas Socio-emotional Individuals Appear to Focus on the Purpose of the Activity and the Tasks or Goals Are Only a Means to a Bigger End

Although both task positive and socio-emotional responses included the word "goal" in their vernacular, it was used differently. One hundred percent of the respondents that were categorized as task positive made references to being goal oriented or motivated by the accomplishment of the goal whereas 62% of the socio-emotional group referenced goals.

Goals create targets or align thought processes and vary in terms of the amount of specificity and time frame (Snyder, 2000). The task positive group appears to use goals more as the target or specific and measurable objective, whereas the socio-emotional group appears to use goals to align their activities toward a more holistic, far reaching purpose. Eighty-four percent of the socio-emotional group referenced or communicated a passion toward something that was very meaningful to them and 62% referenced a purpose that was driving their decisions. This compared to 18% that referenced a passion and 27% that made references to purpose in the task positive group. There was no significant variance across the descriptors.

The following statements are from individuals who tended to have a task orientation. They seem inclined to use goals to identify something that they felt they had the self-efficacy to accomplish, or that would give them a sense of completion and/or obligation.

"This is what I'm going to try to get done today" 3-5.

"There are times that I just, I can't wait to get to work. I can't wait to become engaged in a new problem. Where is the new problem?" 4-2.

"Well, I could – probably the most relevant one is the – is my goal to be home for dinner every night with my kids" 3-6.

"And so I think my goal – my job as his father is to help him – I don't want to feel guilty for the things he has, but I do want him to be grateful and by doing things for others it will actually demonstrate that higher purpose of like you know what, we do have – we have a responsibility as a matter of faith to do things for others" 3-6.

In contrast to this, the socio-emotional group appeared to use goals as steps in a process that were relevant to the extent that they provided guidance toward a greater purpose. This group was motivated by the bigger, overarching objective. The goals did not seem to be what drove their day-to-day activities or their decision making process. Responses that illustrate this are:

"I think you should have goals and think about the future. But I am fine doing a 180 any point in time you know, I am very comfortable doing that" 4-4.

"But I think my broader purpose is really helping find solutions to problems that actually work" 2-4.

"For me it was about the overall concepts, working for the greater good of something, and the lesson that I'm learning and the lessons that I can show my kid that, that was a greater benefit at the time, and I still very much would make the same decision. I think that that was more important than the financial aspect of the position" 2-5.

"Well, how can I then blend the personal goals that I have of making an impact on the world and like still have a job?" 2-4.

Temporal Perspective—There Appears to Be a Noticeable Difference in the Temporal Perspective of the Decisions Being Made. Decisions Appeared to Be Made Based on Either the Immediate Task (Transaction) Or Because the Decision Is Foundational to Transforming or Achieving a Greater, Longer Term Objective

This is best illustrated by the proverb of giving someone a fish vs. teaching someone to fish—if you give someone a fish they'll eat for a day; if you teach someone to fish they'll eat for a lifetime. Tuckey, Bakker and Dollard credit Bass, Jung, Sosik, and Pearce for articulating the behavioral styles of transactional vs. transformational leadership. Transactional leadership is tied to motivating others through a direct relationship between the task and the reward, whereas transformational leadership is recognized as influencing, inspiring, and stimulating others (Tuckey et al., 2012). It is possible to extend this framework to decision making. Individuals in group 1 that are more prone to task positive tendencies, also appear to exhibit a more immediate and transactional perspective. They appear to make decisions based on having an impact on a case by case basis such that they can connect the activity to a reward. This group appears to demonstrate a desire to accomplish a goal because of the reward associated with its completion and getting satisfaction out of the task at hand. They referenced setting goals that were in the near future, a one-off that could stand alone and once accomplished, allowed them to move on to another goal. Sixty-four percent of the task positive oriented group articulated a preference for accomplishing a task that had definite completion criteria. Examples of task positive statements are as follows:

> "What is the big, nasty problem that we are going to tackle today? It takes a lot of hard work but the success is so rewarding" 4-2.
>
> "Well I mean at a very superficial level, having some success in my career has allowed me to provide for people" 4-5.
>
> "I'm working with individuals and I can again align what they love and their passion and their strengths to what we need in the business, it's like the perfect marriage and it's, you know, I just have this great sense of satisfaction when I can make—I can help facilitate that process and I can help make that happen. It's very rewarding to me. I found great satisfaction in that" 3-3.

In contrast, 15% of the socio-emotional group talked about tasks that once finished could be considered complete, whereas 92% of this group spoke of their accomplishments as laying a foundation for a job that was far reaching and may not be completed by them personally. Often, they saw their role as inspiring others to take the lead, making a decision to do something based on the long-term implications. Individuals that are more socio-emotional in nature seem to exhibit behaviors and attitudes that are more transformational. They appear to be motivated to teach others to fish, creating a larger group of people who are working toward the same purpose. They appear to be driven to create a foundation for future progress, aligning people and inspiring people to transform something that is much bigger than themselves. For example:

> "And so I want to be able to give them guidance, help maybe focus them, give them my experience, but ultimately empower them to really stretch and push them to go to places where they didn't think they could go before" 2-1.
>
> "I want to live for all of us to get better and have better lives" 1-4.
>
> "I think what drives who I am is the ability to help others get to where they – where they want to be" 4-3.

Males indicated a preference for having the end goal clear twice as often as females, but there did not appear to be much variance across other descriptors.

Life Work Integration vs. Separation—People Associated with Socio-emotional Tendencies, Appear to See a Correlation between What They Do at Work and What They Do Outside of Work More than Task Oriented Individuals Who Appear to Prefer Separating Their Work from Their Personal Life

Fifty-five percent of the task positive group were very clear that life and work were separate and 77% of the socio-emotional group were equally clear that they sought work/life integration. Seventy-seven percent of the socio-emotional group also indicated that what they did was very personal and meaningful to them. This contrasted to only 36% of the task positive group that made reference to what they do at work as being personal.

Examples of statements from the task positive group are:

> "Even if I'm here longer, I still try to just – whatever I need to do, I do it here and I try not to do it at home" 3-5.
>
> "Work-life balance is about one of the most important things we can strive for. And you know you hear a lot about work-life integration. I don't really believe in that" 3-1.
>
> "I am very focused, intently focused on trying to get home in time for dinner so we can have a family-style dinner" 3-6.

Socio-emotional driven individuals appear to be driven to achieve a purpose that transcends the activities throughout their day, at work and at home, as demonstrated by the following quotes:

> "So I can take my knowledge of sustainability and have it be part of who I am, way beyond the walls of (my current company)" 4-3.
>
> "This, to me, was like a self-fulfillment thing. I can go to work and do what I do every day and make my income this way" 2-5.
>
> "I played soccer, and so it's an inner-city program where they combine soccer with poetry and creative writing, which I love. And so I think I was able to see the connection. It's not just at work, but how you combine your life with something that you're—that you're doing on a day-to-day basis" 4-3.

"I felt like I was able to connect and preserve the best of the world, and do it for a living. It just felt like such a natural connection" 4-3.

Discussion

I studied high performing leaders who worked for corporations that espoused a higher purpose vision. I found that leaders were able to articulate their purpose or meaning and they were able to express alignment of their purpose or personal goals with that of the organization. One of the key discoveries was that personal purpose and goals do appear to play a role in a symbiotic relationship with a company vision and one's articulation of how they are motivated and engaged—but in different ways depending on whether a person is primarily socio-emotional driven or task driven. It was observed that some of these executives had a deep and far reaching sense of purpose which seemed tied to driving the intent of the organization's higher purpose vision. When alignment was felt through the sense of the greater purpose, there was a symbiotic nature to this alignment; a deep, almost spiritual, commitment to deploying all aspects of their life, e.g., work and home, to making the world a better place and helping the organization be a contributing part of their personal purpose. Others had a task oriented way of describing their purpose which appeared more instrumental in helping move the organization toward its overall purpose through the achievement of goals and objectives. When alignment was felt through the organization's support of one's personal goals, there was a great sense of commitment, but a clear delineation between work and life ambitions.

This difference was found to influence how high-performing leaders were motivated to act and engage. Task-driven individuals were found to be more self-referent; motivated by the actual accomplishment of goals/milestones; more likely to make decisions based on being able to see the completion of the task in the near future; and clear that life and work were separate. Individuals who were socio-emotional in nature were found to be more other-oriented; more likely to focus on the greater purpose of an activity; more likely to make decisions with a long term, big picture in mind; and more likely to see their work as an integral vs. separate part of their life.

It is important to note that both groups spoke of the importance of connecting with others and relationships with people. Half of the task positive group made references to team identity whereas no one in the socio-emotional group spoke about the personal connections to a team. There is an opportunity to explore this deeper in future research.

Reference Context

The senior leaders interviewed gravitated toward either a self-referent or other-referent perspective which aligned with having task positive tendencies or socio-emotional tendencies, respectively. This primary reference appeared to impact their decisions around whether to act on and stay engaged in an activity. The tendency to gravitate toward a self-referent or an other-referent position may indicate that there are two different categorical perspectives of, or possibly a continuum from, a task to socio-emotional orientation that correlates to an individual's reference. Individuals that are more self-referent appear to frame their decisions and determine their desire to act and engage based on how it impacts, affects or connects to them, personally. Other-referent individuals appear to be more motivated to act or commit if the decision or objective is framed in relation to its impact on others.

Self-determination theory distinguishes autonomous and controlled motivation, both of which include extrinsic motivation. Autonomous motivation combines extrinsic and intrinsic factors that impact the identification of the activities value whereas controlled motivation is driven by extrinsic rewards or punishment; in both cases, they are in relation to one's sense of self (Deci and Ryan, 2008). Deci and Ryan (2000a) propose that self-determination is a basic need. This need is interpreted as a universal motivator such that by encouraging rewards and independent action, leaders can transfer control to followers and increase their self-determination and feelings of efficacy (Tuckey et al., 2012). My research opens the possibility that while increasing one's self determination through value and rewards that are meaningful to the individual may be very motivating for some, not all high performing senior leaders are motivated by self-rewards and self-value. The same company vision may be internalized differently based on one's primary reference. Self-determination theory is supported by the task positive group who appear to connect with personal value and rewards. Yet some people, as indicated by the socio-emotional group, may actually be more motivated if the message is put into the perspective of the greater good, or how they could inspire others, taking it out of a reward and self-value perspective.

Primary Motivational Driver

Individuals that are inclined to be more task oriented appear to be more motivated by the actual goal or milestone, whereas socio-emotional individuals appear to focus on the purpose of the activity and the tasks or goals are only a means to a bigger objective. The task positive leaders appeared to analyze the measurable result or impact of the accomplishment of the goal to make their decisions regarding whether or not to proceed. The socio-emotional group seemed to focus on the impact it had on the more holistic, far reaching purpose.

In the task-positive network vs. the default mode network theory, Boyatzis et al. (2014), discovered a pull different than the traditional intrinsic and extrinsic tension. Their research points to an empathetic vs. analytical tension, indicating people are driven by emotional or cognitive reasoning. My second finding of a noticeable segregation of motivation between being task driven and socio-emotionally driven may support this theory; possibly adding an additional dimension. Some leaders appear to analytically evaluate the objective to determine their ability to accomplish the task at hand, whereas others emotionally evaluate their ability to inspire others to achieve a greater good. Individuals who are driven by the task appear to review the goal analytically, to determine the degree to which tangible acknowledgement of their accomplishments will come through via a sense of productivity or validation. Socio-emotional individuals appear to be passionate about the overarching purpose and motivated by something bigger than themselves, often other focused, which may not provide

tangible or immediate results. For them, it is personal and they are motivated and engaged when they are able to inspire others to help make a difference in the overarching objective. It may be that this desire to help or inspire others to join a cause is motivated by empathy, in which case this task driver vs. purpose driver tendency supports the framework of the empathetic and analytical tensions. If the motivation is determined to be because of an alignment to a greater purpose—a goal with a longer perspective with measurements for success, albeit less obvious—this group may be processing their decisions through both an analytical and empathetic lens, possibly extending the framework of the empathetic and analytical tension theory. This data supports the need to have additional dimensions beyond the intrinsic and extrinsic tension such as the tensions proposed by Boyatzis et al. (2014), but more research would be require to understand if it also extends the framework.

Temporal Perspective

There appears to be a noticeable difference in the temporal perspective of the decisions being made by people who are task positive vs. socio-emotional. Decisions appear to be made based on either the immediate task (transaction) or because the decision is foundational to transforming or achieving a greater, longer term objective. This theme seems to impact why one makes the decisions he or she makes based on the locus of time used in reference to the goal or objective, e.g., one-off, task specific or a greater, longer term purpose orientation. This speaks to the time element that impacts the thought process behind the creation of goals referenced previously (Snyder, 2000). From the work on self-efficacy done by Bandura, people are motivated by the level of personal satisfaction they have around their ability to perform. This intrinsic motivation is sustained through the achievement of sub goals that connect to larger future goals (Bandura, 1977). Bandura is also referencing the temporal element and how it impacts the desire to accomplish tasks or sub goals in order to achieve the bigger objective.

The transactional vs. transformational leadership model has been used by practitioners to understand how to move their employees beyond a state of self-interest to a shared vision by providing meaning and purpose to their work. The underpinning is that a transformational leadership style uses inspiration through the connection to a higher purpose to motivate and engage followers to achieve a desired performance (Bass, 1990). The interpretation of my research indicates that this transformational leadership style may not always be better. The style of leadership best deployed may depend on where the individual falls on the continuum between being transactional or transformational. This supports the assertions summarized by Kowal Smith (2010) of Bass (1990), Walden et al. (1990), and Lowe et al. (1996) that the best leaders use both styles. Our possible contribution to this body of work is that a person who appears to be more transactional would prefer the aspirational vision to be translated into milestones, tasks or goals that, upon completion, would move the individual toward the desired end state. A transactional perspective's preference would be to clearly see the end goal on the horizon. A more transformational person would flourish under an inspirational approach of aligning around a meaningful purpose, and being given flexibility to work around, through or even without specific goals.

Life Work Integration vs. Separation

Task-positive and socio-emotional people seem to look at the integration or separation of work and life differently which appears to be connected to how they process decisions to act or engage. This finding seems to speak to the role their personal purpose or personal goals plays in creating alignment with that of the organization and how integrated their work is with the other aspects of their life. Dik and Duffy (2009) established the construct calling as including an external summons to a higher purpose and an alignment to a personal purpose that is other focused, or an advancement of a greater good. "A calling is a transcendent summons, experienced as originating beyond the self, to approach a particular life role in a manner oriented toward demonstrating or deriving a sense of purpose or meaningfulness and that holds other-oriented values and goals as primary sources of motivation" (Dik and Duffy, 2009, p. 427). One implication of their view is that individuals connect their work activity to their overall sense of purpose and meaning, or pursue careers that allow their work to be their calling. In either case, this implies an integration of work and life as one's vocation becomes a tool to accomplish their aspirational purpose. This desire to achieve a personal purpose creates motivation that extends beyond the office.

My research indicates that alignment to visions may exist in two very different ways, either as an alignment to a vision, or purpose, or support of personal goals. It may not be necessary to inspire people to see the greater good, or to stretch beyond themselves to be motivated, engaged and aligned with a higher purpose vision. Some people can have a personal purpose that is best described in a goal oriented fashion that is very instrumental in helping a company achieve its higher purpose vision, with a comfortable separation between work and life. At the end of the day, they will help the organization achieve its goal because they feel aligned to the company's vision even though they have a deep desire to keep their personal ambitions and the goals of the company separate.

Implications for Practice

People often choose a lower income to work in the not-for-profit world for personal reasons. This desire to be a part of something bigger, to make a difference, is something organizations may be able to tap into if their company vision is aligned with an employee's personal ambitions. Once this phenomenon is understood, it can be translated into a language that would help organizations understand how to harness this personal drive and intrinsic motivation.

The engagement and motivation of individuals who have a personal purpose or personal goals that can be accomplished through the work they do for an organization appears to be powerful and, once understood, could lead to a more flexible and personalized style of leadership. If an organization has a higher purpose vision that attracts employees with a

vision symbiotic with that of the business, many of the traditional forms of external motivation may not be appropriate. By understanding why and what motivates task oriented vs. socio-emotional people to make decisions, a leader can apply the levers that trigger self-motivation instead of relying on a one size fits all.

A leader could increase motivation and engagement by providing alignment, resources and support in the form and perspective best understood and desired by each employee, then stepping away and allowing the employee to access and pull from the personal drive that comes from achieving their own aspirational purpose or goals in life. Similar to the conductor of an orchestra, the leader's primary duties would be to unify the organization, set the pace and tempo, and then listen, observe and direct as necessary to assure the organization is moving in the right direction. Employees who work for an organization that has a higher purpose, and are led by leaders who understand their drivers, can feel fulfilled and motivated as they use many of their waking hours to work toward their personal calling or purpose. At the end of the day, they can feel that their efforts were toward creating and supporting their ideal self, not the "ought self", desired by someone else.

Future Research

This study was done within for-profit organizations, but the indications that symbiotic visions impact people in different ways is strong enough that it would be illuminating to do similar research in not-for-profit organizations to understand the similarities and differences.

This study illuminates the possible benefits of connecting to an individual's aspirational purpose or goals in a meaningful way through the related task positive vs. socio-emotional construct. Future research should be done specifically on goal vs. purpose drivers. To do this, clarification of the terms would need to be done to create unbiased and other determined classifications. Even with the limitations of this study, two categories emerged. Future research should be done on how to connect one's personal purpose and goals to a company's higher purpose and how to fit it into current and developing leadership theory.

There is work being done to understand what leaders need to do to motivate and engage their employees. Further research could be done to understand the correlation between leadership theories and the follower's response. The discovery of an analytical vs. empathetic tension is very important to understanding how followers make decisions. This research supports this theory and may be able to extend it to understand if this is a two dimensional framework or a continuum impacted by one's motivational driver. More research should be done to understand this relationship and the implications to leadership and communication styles.

Although both groups referenced the importance of relationships, 50% of the task focused group spoke about their identification with teams compared with no one in the socio-emotional group referencing teams or the personal identity associated with a team. Relationships were explored in the context of this study only to understand if they existed or were absent. Additional research would have to be done to understand the role team identities play in task-positive vs. socio-emotional decision styles.

Limitations

Because this was an empirical study, possible meanings of these discoveries must be inferred in light of former research. Additional studies will be needed to truly comprehend and test these interpretations.

The study was exploratory in nature and designed to discover the role of personal purpose and personal goals when a symbiotic relationship with a higher purpose company vision and positive relationships existed or was absent. Therefore, interviews were conducted with senior leaders that were considered high performers in organizations that had a recognized higher purpose vision. The study does not consider what happens when high-performing employees have a personal purpose but work within an organization that does not have a higher purpose vision, or what happens when employees are not senior leaders in the organization nor are considered high-performers. More research would need to be done before this could be applied to the greater employee population.

This study does not assume that personal purpose is stable. Personal purpose and goals can evolve and change over time. This study only captures a point in time in which the senior leaders interviewed identified with the higher purpose vision of their organization.

This study does not imply that goal-driven or purpose-driven tendencies are good or bad, simply different drivers. I purposefully did not provide clear definitions of both terms prior to the interviews in order to not bias the selection of the participants or the direction of the responses to the questions. The apparent bias against being goal based and various understandings of the meaning of being purpose driven created a limitation. I mediated this limitation by using an already existing construct to categorize the themes that emerged based on Saldana's approach to allowing conceptual frameworks to emerge in the coding process and therefore, identifying groups associated with these frameworks (Saldaña, 2013). I used the first question to place people into groups that were defined by prior research on the topic of motivational drivers. I recommend that it be verified through another study that provides more clarification on the difference between the two drivers.

A fourth limitation is that all of the interviews were done with people in leadership positions. I recommend that a similar study be done of individuals not in leadership positions to understand if that variable impacts the findings.

Conclusion

Purpose and goals appear to play a role in alignment to visions, motivation and engagement. High performing leaders are able to articulate and understand the symbiotic nature of their purpose or personal goals with that of the organization, yet how they frame their motivation and engagement is different depending on their orientation.

By understanding the roles personal purpose and goals play in alignment to company vision, motivation and engagement, a leader can apply the levers that trigger self-motivation. Additional research in this area could break the code to helping leaders increase motivation and engagement through alignment, and by providing resources and support in the form and perspective best understood and desired by each employee, allowing the leader to then step away as employees access and pull from the personal drive that comes from achieving their own aspirational purpose or goals in life.

Supplementary Material

The Supplementary Material for this article can be found online at: http://www.frontiersin.org/journal/10.3389/fpsyg.2015.00443/abstract

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in PSYCHOLOGY

ORIGINAL RESEARCH ARTICLE
published: 06 January 2015
doi: 10.3389/fpsyg.2014.01466

Shared vision and autonomous motivation vs. financial incentives driving success in corporate acquisitions

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Successful corporate acquisitions require its managers to achieve substantial performance improvements in order to sufficiently cover acquisition premiums, the expected return of debt and equity investors, and the additional resources needed to capture synergies and accelerate growth. Acquirers understand that achieving the performance improvements necessary to cover these costs and create value for investors will most likely require a significant effort from mergers and acquisitions (M&A) management teams. This understanding drives the common and longstanding practice of offering hefty performance incentive packages to key managers, assuming that financial incentives will induce in-role and extra-role behaviors that drive organizational change and growth. The present study debunks the assumptions of this common M&A practice, providing quantitative evidence that shared vision and autonomous motivation are far more effective drivers of managerial performance than financial incentives.

Keywords: shared vision, mergers and acquisitions, self-determination theory, autonomous motivation, financial incentives, extra-role behaviors, M&A

INTRODUCTION

The poor financial returns and high failure rates of mergers and acquisitions (M&A) have been thoroughly documented. Researchers have indicated that approximately 70–80% of mergers and acquisitions do not create significant value above the annual cost of capital (Bruner, 2002). Even conservative estimates place M&A failure rates at approximately 50% or higher for nearly four decades (Kitching, 1974; Rostand, 1994; Coffey et al., 2003). Despite this conspicuously disappointing history, global M&A activity continues to increase at a phenomenal rate climbing from $1.9 trillion in 2004 (Cartwright and Schoenberg, 2006) to a record-breaking $4.35 trillion in 2007 (Reuters, 2008). With trillions of dollars in transactions at risk each year, it is extremely important for researchers and practitioners to find ways to curb M&A failures.

In order to succeed, M&As must create value for its investors despite new costs such as servicing debt, funding growth, and increasing return expectations to accommodate acquisition premiums[1] (Sirower, 2000). These burdens require M&A managers to increase the performance of their firms to new heights. Acquirers typically offer substantial financial incentives to induce these managers to go above and beyond their normal job duties to champion aggressive organizational change and growth (Hitt et al., 2001).

This expectation is in direct conflict with social psychology theories such as Self-Determination Theory (SDT) (Gagne and Deci, 2005) and economic theories such as Motivation Crowding Theory (Frey and Jegen, 2001; James, 2005) which assert that financial incentives can reduce motivation and performance. Certainly, the persistently high M&A failure rates suggest the possibility that these theories apply to M&A managers.

The purpose of the present study is two-fold. First, it explores the effects of financial incentives on the motivation and performance of M&A managers. For completeness, our concept of managerial performance includes both in-role and championing behaviors. Second, the study explores two other practices that are used by acquirers to increase the performance of its acquired managers, increasing organizational support and focusing on shared vision.

THE NEED FOR INNOVATIVE APPROACHES TO M&A RESEARCH

Fifty years of M&A research have had no measurable impact on failure rates (Cartwright, 2005). Scholars continue to be bewildered by the conflicting and seemingly unpredictable performance of mergers and acquisitions (Tichy, 2001; King et al., 2004; Stahl and Voigt, 2004). M&A research has primarily focused on three streams of inquiry to identify the root cause(s) of failures: strategic fit, culture fit and integration process (Cartwright and Schoenberg, 2006). While these research paths have contributed much to our understanding of organizational-level changes related to M&A, neither has provided a consistent explanation of how and why these changes affect firm performance (King et al., 2004; Cartwright, 2005).

Scholars have offered several suppositions why existing M&A literature has not been effective. First, although psychological theorists consistently argue that human factors are the key to M&A success or failure (Cartwright and Cooper, 1996; Terry, 2003), 95% of existing M&A literature focuses on organizational-level constructs (Cartwright, 2005). This is rather surprising

[1]Acquisition premium: The actual cost of acquiring a target versus its book value, market value, or estimated value. Sirower (2000) estimates that the average acquisition premium is in excess of 40%.

since organizational change, particularly the accelerated change experienced by most M&As, is usually if not always mediated through individual change (Schein, 1980; Schneider et al., 1996; Edmonson, 1999; Devos et al., 2001). M&A literature fails to predict the performance of merged or acquired companies simply because it cannot predict the performance of the managers charged with running these companies (Cartwright, 2005).

Two other suppositions suggest that most M&A studies (a) have not been theory-driven or (b) have been limited to case studies, both of which lack the generalizability to offer far-reaching solutions (Hogan and Overmeyer-Day, 1994; Seo and Hill, 2005). As a result, countless organizational practices have been prescribed for M&A planning and integration without a sound theoretical or empirical basis, certainly contributing to the high rate of failures (Seo and Hill, 2005). In fact, researchers concluded that "changes to both M&A theory and research may be needed" after analyzing the inability of 93 studies to clearly identify antecedents that consistently impact M&A performance (King et al., 2004). Evidently, unique approaches to M&A research is just as important as the research focus.

CONCEPTUAL OVERVIEW

In a ground-breaking analysis of M&A failures, Sirower (2000) illustrated how most M&A management teams face massive required performance improvements (RPIs) to achieve M&A success. The basic M&A premise involves purchasing a company at X price, then growing its value to $X + Y$ at some designated time in the future. The value of Y must be sufficiently large enough to cover the acquisition premium, the expected return of debt and equity investors, surges in competitive activity responding to the M&A threat, additional resources requirements needed for growth and capturing synergies, acquisition transaction and consulting costs, executive contractual costs, and many other costs including the time value of money (Sirower, 2000). For M&A managers, status quo performance of in-role behaviors, no matter how efficient, will no longer suffice. Management performance must often substantially improve to meet the RPIs dictated by the need to achieve value *Y*. As such, M&A managers are expected to *champion* aggressive organizational change and growth to have any chance of achieving M&A success.

Understanding this dynamic, acquirers typically focus on three areas to improve in-role behaviors and more importantly, to induce championing behaviors from acquired managers: financial incentives, organizational support and shared vision. The most common and longstanding practice is to increase financial performance incentives via some combination of stock options, profit sharing, gain sharing or individual bonuses. In fact, acquirers often establish financial incentives as part of the transaction terms for key managers and immediately after the transaction for other managers (Hitt et al., 2001; Cullinan et al., 2004). Acquirers understand that any delays in achieving performance improvements quickly compound the returns needed to accommodate value *Y*. Sirower (2000) calculated that expectations of a 10% return on equity (ROE) would increase to approximately 15% on minimal or substandard returns for the first couple of years after an acquisition. This 50% increase in ROE would have to be maintained for the following 7 years just to break even. In other words, his analysis assumes no value creation, only value preservation for the acquirer. Consequently, acquirers typically provide substantial performance incentives expecting they will induce key managers to champion whatever changes are necessary to achieve the acquirer's goals. This practice is supported by empirical studies on compensation, which in general, report a positive influence of monetary incentives on employee and firm performance (Booth and Frank, 1999; Lazear Edward, 2000; Gerhart and Rynes, 2003; Gagne and Forest, 2008).

Unfortunately, the exceptionally high rates of M&A failures indicate that increasing performance incentives do not consistently increase the performance of acquired managers. This directly contradicts common practice and general compensation literature. However, economics and social psychology scholars have provided theory and corresponding empirical evidence describing certain conditions where financial incentives are ineffective and in fact, can actually undermine motivation and performance (Gagne and Deci, 2005; James, 2005). This suggests the presence of a mediator that suppresses the total effect of financial incentives on performance.

This mediation effect is supported by SDT (Gagne and Deci, 2005). SDT posits that individuals perceive financial incentives as control mechanisms. As such, financial incentives reduce individuals' autonomous motivation, that is, their willingness to act on organizational goals according to their own volition.

Figure 1 graphically depicts the aforementioned assertions regarding the direct and mediation effects of financial incentives on in-role and championing behaviors in a single model. The model illustrates the positive relationship between incentives and performance behaviors espoused by general compensation literature and M&A practice. It also illustrates the negative mediation effect of autonomous motivation espoused by SDT.

Providing organizational support is another common method acquirers use to improve in-role performance and induce championing behaviors. When parent organizations actively demonstrate a concern for acquired employees' well-being, threat is reduced, motivating employees to willingly reciprocate with actions that contribute to the well-being of the organization (Gaertner et al., 2001; Seo and Hill, 2005). Two of the most successful and studied serial acquirers, Cisco Systems and GE Capital, both consider their organizational support of acquired employees during post-acquisition integration as the key to their success (DiGeorgio, 2001). **Figure 1** depicts organizational support as positively impacting both autonomous motivation and managerial performance.

Shared vision is the third common method used by M&A practitioners to maximize performance (Douma et al., 2000; Mitleton-Kelly, 2004; Stahl and Mendenhall, 2005). We define shared vision as a manager's focus and alignment toward the new regime's direction and purpose. M&A literature asserts that a shared vision is essential to the successful performance of merged and acquired organizations (Haspeslagh and Jemison, 1991; Sitkin and Pablo, 2005). J. P. Garnier, the former CEO of GlaxoSmithKline, extensively discussed the importance of management's focus on shared vision when analyzing GSK's many

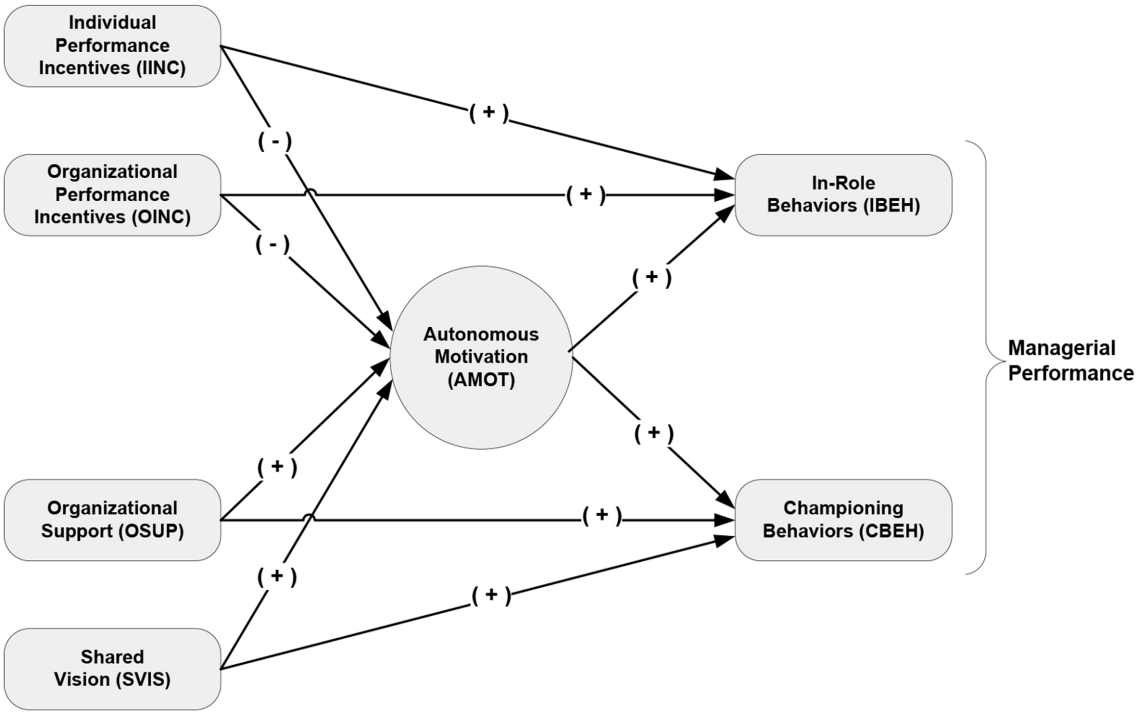

FIGURE 1 | Conceptual model.

M&A successes (Stahl and Mendenhall, 2005). Cisco System explores shared vision as part of the pre-acquisition process while GE Capital requires its integration managers to develop shared vision during the post-acquisition integration process as part of their role (DiGeorgio, 2001). Per **Figure 1**, we posit that shared vision positively influences both autonomous motivation and championing behaviors.

MANAGERIAL PERFORMANCE

Our definition of managerial performance consists of in-role behaviors and championing behaviors. In-role behaviors are defined and required by formal job descriptions (Williams and Anderson, 1991; Riketta, 2002). They are recognized and driven by an organization's formal reward system (Barksdale and Werner, 2001). Researchers most often characterize in-role behaviors as simply "doing one's job."

Championing behaviors are a form of extra-role behaviors based on the "taking charge" construct defined by Morrison and Phelps (1999). Like other forms of extra-role behaviors, they are discretionary actions that are not defined or enforced by formal role obligations (Morrison and Phelps, 1999). Unlike other forms of extra-role behaviors, they are specifically change-oriented, describing individuals who are willing to challenge the status quo to bring about constructive organizational change (Morrison and Phelps, 1999). Championing behaviors describe voluntary efforts to continuously improve organizational functioning. Researchers have statistically confirmed their relation to but distinction from other forms of extra-role behaviors (Morrison and Phelps, 1999; Chiaburu and Baker, 2006).

THE DIRECT EFFECTS OF FINANCIAL INCENTIVES ON IN-ROLE PERFORMANCE

Performance incentives for acquired managers can take several forms. **Table 1** lists the most common incentives categorized by their basis of evaluation. Researchers over the past decade have consistently reported that at least 95% of U.S. companies provide performance incentives with approximately 35% of those companies providing individual-based incentives and 60% providing organizational-based incentives (Bucklin and Dickinson, 2001; McGee et al., 2006). Because increasing performance is so essential to the success of mergers and acquisitions (Sirower, 2000), we suspect that an even higher percentage of M&As provide some form of performance incentives.

This common practice of using performance incentives is based on research on compensation showing financial incentives have a positive effect on employee performance (Gerhart and Rynes, 2003) with studies showing a 4–9% increase in firm performance (Booth and Frank, 1999; Lazear Edward, 2000; Gagne and Forest, 2008). Because financial strategists dominate M&A literature and practice (Sudarsanam, 2003; Cartwright, 2005), it is not surprising that they have adopted the perspective supported by the financial literature regarding compensation. M&A literature specifically recommends performance incentives that range from "cash compensation for particular actions to stock options and equity ownership" (Hitt et al., 2001), to drive "stimulating sustained, vigorous performance" (Larsson and Finkelstein, 2002), because "incentives matter a great deal in determining the success of an acquisition (Kaplan, 2000).

Table 1 | Common performance incentives for managers.

Evaluation basis	Performance incentive	Description	Major pros and cons
Individual performance	Individual performance bonus	Cash compensation based on achieving individual goals. Funded by pre-determined budget set aside for bonuses	Pros: Excellent influence on individual performance. Cons: Promotes self-interest and competition among peers
Organizational performance	Profit sharing bonus	Cash or deferred compensation based on the economic performance of the firm. Funded by firm profits	Pros: Signals willingness to share wealth with workforce. Easy to administer. Cons: Weak influence on day to day individual performance
Organizational performance	Gainsharing bonus	Cash compensation based on specific short or long-term operational goals. Funded by cost savings, increased revenue or productivity gains	Pros: Good to excellent influence on individual performance depending on the size of the group. Promotes cooperation, team work and positive peer pressure. Cons: Can be difficult to administer and keep current
Organizational performance	Stock or stock options	Stock or the right to purchase stock at a fixed price. Funded by the sale of the firm or of the firm's stock	Pros: Easy to administer. Can be a substantial amount. Cons: Weak influence on day to day individual performance

From a theoretical perspective, the direct effect of incentives on performance is based on the economic exchange model (Blau, 1964) that promises specific benefits from the organization in return for specific contributions from employees (Tsui et al., 1997). Equity Theory, one of many theories that utilize the economic exchange model, asserts that employees strive to balance the contributions they provide relative to the benefits they receive (Adams, 1965; Cropanzano et al., 2007). According to Equity Theory, financial incentives should positively influence the performance of an individual's specified behaviors, that is, in-role behaviors. Accordingly, studies have supported a positive correlation between performance incentives and in-role behaviors (Deckop et al., 1999), specifically referring to it as the pay-performance link (Bucklin and Dickinson, 2001).

Hypothesis 1: Individual performance incentives positively influence in-role behaviors after controlling for autonomous motivation.

Hypothesis 2: Organizational performance incentives positively influence in-role behaviors after controlling for autonomous motivation.

Compensation specialists have historically cited the pay-performance link to be the most important factor in determining the influence that financial incentives have on an individual's performance (Bucklin and Dickinson, 2001). The strength of the pay-performance link depends on the amount of control an individual has over achieving the targeted goals (McGee et al., 2006). The more control one has over achieving the goals, the more control he has over his pay.

One has much more control over achieving individual-based goals than group-based goals (McGee et al., 2006). Simply put, the less people involved in achieving a goal, the more that a single participant can control the outcome. In addition, organizational performance incentives are based on the impact of operational or economic outcomes on the firm, many of which depend on external variables that are clearly beyond the control of management (Bucklin and Dickinson, 2001) such as the economy, government regulation, customer demand, and competitor strategies. Even controllable variables such as productivity and quality are an aggregate based on the performance of all employees, meaning that an individual may perceive his contribution as insignificant toward achieving the incentive (FitzRoy and Kraft, 1995; Hall and Murphy, 2003). As a result, individuals may have difficulty seeing the connection between group-based incentives and their day-to-day performance of in-role behaviors (Bucklin and Dickinson, 2001; Hall and Murphy, 2003).

Hypothesis 3: Individual performance incentives have a stronger (more positive) influence on in-role behaviors than organizational performance incentives.

THE MEDIATING EFFECTS OF AUTONOMOUS MOTIVATION ON FINANCIAL INCENTIVES

Mediating effects on financial incentives are not considered by the economic exchange based theories that dominate compensation research and practice (Frey and Osterloh, 2005; Gagne and Forest, 2008). However, numerous studies have explored how certain conditions can cause tangible incentives to undermine motivation and performance (Gagne and Deci, 2005; James, 2005). This "hidden cost of reward" was first identified and researched by social psychologists as far back as 1971 (Titmuss, 1971; Lepper and Greene, 1978; Frey and Oberholzer-Gee, 1997). Over the years, this concept has been included in many theoretical approaches to work motivation and performance such as Cognitive Evaluation Theory (Deci and Ryan, 1985) and Motivation Crowding Theory (Frey and Jegen, 2001; James, 2005).

SDT posits that the perceptions of tangible incentives *regulate* an individual's motivation and behaviors (Deci and Ryan, 2000; Ryan and Deci, 2000a; Sheldon et al., 2003; Gagne and Deci, 2005). Referring to **Figure 2**, the Self-Determination Continuum, the *source of regulation* describes the reasons that individuals act on the organizational goals. When an individual generally regards organizational goals as personally important, meaningful or interesting, they are *internalized* or internally valued by the

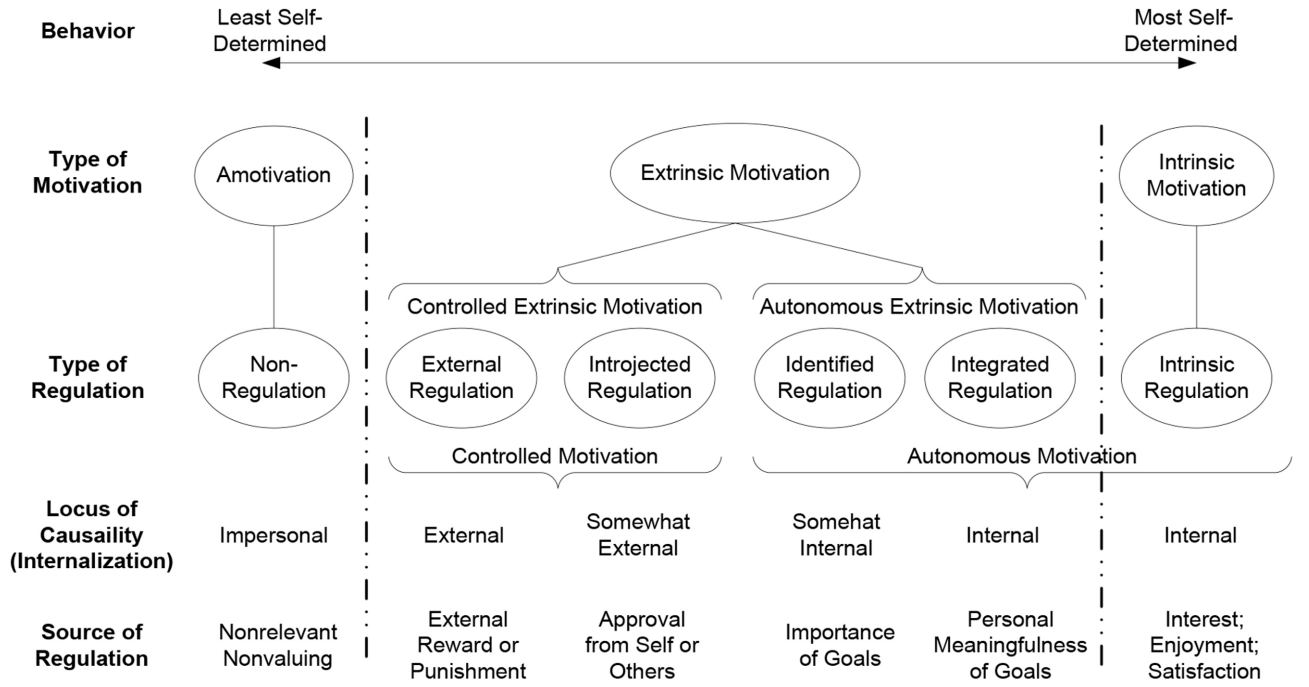

FIGURE 2 | Self-determination continuum.

individual (Ryan and Connell, 1989; Sheldon et al., 2003; Gagne and Forest, 2008). High degrees of internalization enhance an individual's perceived autonomy, resulting in their willing intention to act on organizational goals (Deci and Ryan, 1987; Gagne and Deci, 2005). SDT defines this willing intention to act as *autonomous motivation*. Conversely, an individual that generally regards organizational goals with low degrees of internalization will only act on them to receive a reward, avoid a punishment or achieve the approval of others (Ryan and Deci, 2000a; Meyer et al., 2004). SDT refers to this as *controlled motivation*.

Figure 2 depicts the sources of regulation that include external rewards increase controlled motivation while reducing autonomous motivation. SDT states that individuals perceive tangible rewards as control mechanisms, attempting to force or coerce them into acting on organizational goals. SDT posits that tangible rewards reduce autonomous motivation.

Hypothesis 4: Individual performance incentives negatively influence autonomous motivation.

Hypothesis 5: Organizational performance incentives negatively influence autonomous motivation.

Researchers have proposed that organizational commitment is actually a component of work motivation (Meyer and Herscovitch, 2001; Meyer et al., 2004). Empirical research has confirmed considerable overlap between both major conceptualizations of organizational commitment (O'Reilly and Chatman, 1986; Meyer and Allen, 1991) and the SDT framework of work motivation (Gagne and Deci, 2005; Gagné et al., 2009). Affective organizational commitment, characterized as the willing desire to identify with an organization was specifically linked to autonomous motivation (Gagné and Koestner, 2002; Gagné et al., 2004; Gagne and Deci, 2005).

A number of studies have linked affective organizational commitment to in-role and extra-role behaviors. Researchers have established a significant overlap between affective organizational commitment and autonomous motivation. In a meta-analysis of 93 published studies, affective organizational commitment was found to (a) positively influence in-role behaviors, (b) to positively influence extra-role behaviors, and (c) to influence extra-role behaviors significantly more than in-role behaviors (Riketta, 2002). Similar results were also reported in a separate meta-analysis of 155 independent samples involving more than 50,000 employees (Meyer et al., 2002).

Hypothesis 6: Autonomous motivation positively influences in-role behaviors.

Hypothesis 7: Autonomous motivation positively influences championing behaviors.

Hypothesis 8: Autonomous motivation has a stronger (more positive) influence on championing behaviors than in-role behaviors.

Hypotheses 1 through 8 establish autonomous motivation as a mediator of the influence that performance incentives have on in-role and championing behaviors. Because SDT posits a negative relationship between financial incentives and

autonomous motivation, our hypothesized model conceptualizes that autonomous motivation negatively mediates the impact of incentives on managerial performance. This is in accordance with SDT but directly conflicts with M&A practice.

Hypothesis 9: Autonomous motivation negatively mediates the influence of individual performance incentives on in-role behaviors.

Hypothesis 10: Autonomous motivation negatively mediates the influence of organizational performance incentives on in-role behaviors.

Hypothesis 11: Autonomous motivation negatively mediates the influence of individual performance incentives on championing behaviors.

Hypothesis 12: Autonomous motivation negatively mediates the influence of organizational performance incentives on championing behaviors.

THE EFFECTS OF ORGANIZATIONAL SUPPORT ON MANAGERIAL PERFORMANCE

The present study conceptualizes organizational support through the perceptions of each individual manager. Perceived organizational support (POS) captures an individual's beliefs concerning the degree to which an organization values their contributions and cares about their well-being (Eisenberger et al., 1986). POS develops from an employee's personification of the organization and its intent toward favorable or unfavorable treatment and working conditions (Rhoades and Eisenberger, 2002). High levels of POS indicate a work environment that is likely to exhibit fair treatment, participation in decision-making, career development and training, job security, recognition, supervisor support and a strong sense of belonging (Wayne et al., 1997; Rhoades and Eisenberger, 2002; Masterson and Stamper, 2003).

Social Exchange Theory (SET), a foundation for understanding the relationships between individuals and their organizations, posits that an individual is likely to reciprocate the favorable or unfavorable treatment received from an organization (Blau, 1964). On the basis of SET, POS should drive an individual's willing desire to act on behalf of the organization (Rhoades and Eisenberger, 2002). In a meta-analysis of over 70 studies on the antecedents and outcomes of POS, Rhoades and Eisenberger (2002) identified a strong and consistent positive relationship between POS and affective commitment. Given the established relationship between affective organizational commitment and autonomous motivation, we propose the following:

Hypothesis 13: Organizational support positively influences autonomous motivation.

Rhoades and Eisenberger's meta-analysis (2002) also reports that extra-role behaviors toward the organization as a significant outcome of POS. A recent study corroborates those findings, specifically confirming that POS is the antecedent to extra-role behaviors (Chen et al., 2009).

Hypothesis 14: Organizational support positively influences championing behaviors.

Hypotheses 6, 7, 13, and 14 establish autonomous motivation as a mediator of the influence that organizational support has on in-role and championing behaviors. The positive effects conceptualized for each hypothesis posits that autonomous motivation positively mediates the impact of organizational support on managerial performance.

Hypothesis 15: Autonomous motivation positively mediates the influence of organizational support on in-role behaviors.

Hypothesis 16: Autonomous motivation positively mediates the influence of organizational support on championing behaviors.

THE EFFECTS OF SHARED VISION ON MANAGERIAL PERFORMANCE

M&A literature asserts that a shared vision, defined as a common direction and purpose among an M&A's leaders and employees, is essential to its successful performance (Haspeslagh and Jemison, 1991; Sitkin and Pablo, 2005). A shared vision of an organization's future must be consistently encouraged and communicated to take root, spread and foster an environment of excellence (Senge, 1990). An effective shared vision provides the focus, direction and purpose for day-to-day individual efforts. They remind us of the meaning and importance of our work (Boyatzis and McKee, 2005).

Shared vision is particularly important in M&A environments because it is a bonding mechanism that helps different parts of an organization combine resources which promotes the integration of the entire organization (Tsai and Ghoshal, 1998). At an individual level, shared vision creates an emotional bond between an employee and his organization, providing a common identity and sense of belonging (Senge, 1990; Dvir et al., 2004). This sense of belonging enhances relatedness, which according to SDT, increases autonomous motivation In other words, an individual who agrees with or is inspired by the organization's vision is more likely to willingly act on behalf of the organization (Ashforth and Humphrey, 1995; Dvir et al., 2004).

Hypothesis 17: Shared vision positively influences autonomous motivation.

Intentional Change Theory posits that shared vision drives the types of behaviors that cultivate and sustain individual, group and organizational change (Akrivou et al., 2006; Boyatzis, 2006; Van-Oosten, 2006). We contend that these behaviors are closely related, if not identical to championing behaviors. Championing behaviors consist of discretionary conduct focused on implementing constructive organizational change (Morrison and Phelps, 1999; Chiaburu and Baker, 2006).

Hypothesis 18: Shared vision positively influences championing behaviors.

Hypotheses 6, 7, 17, and 18 establish autonomous motivation as a mediator of the influence that shared vision has on in-role and championing behaviors. The positive effects conceptualized for each hypothesis posit that autonomous motivation positively mediates the impact of shared vision on managerial performance.

Hypothesis 19: Autonomous motivation positively mediates the influence of shared vision on in-role behaviors.

Hypothesis 20: Autonomous motivation positively mediates the influence of shared vision on championing behaviors.

RESEARCH METHODS

SAMPLE

The study focuses on mergers and acquisitions owned by private equity firms. Private equity firms typically have a 5–7 year turnaround timetable for their investments (Flanigan, 2005). To this end, managers must implement aggressive, short-term growth strategies designed to quickly improve the firm's performance to levels never before achieved. The study targets firms that were acquired at least 3 months prior to the survey. M&As less than 3 months old have not had sufficient time for changes in financial incentives to have an effect on the attitudes and behaviors of acquired managers. Three months is a common milestone used by M&A practitioners to judge the direction of early-stage change implementation (DiGeorgio, 2001; Bertoncelj and Kovač, 2007).

Companies owned by private equity provide an excellent climate to evaluate the drivers of managerial performance. Private equity ownership fosters an environment of time-constrained, aggressive-growth expectations that require high levels of in-role and championing behaviors from M&A managers.

The sample consists of CEOs, senior managers and middle managers from 54 M&As owned by a large private equity firm headquartered in North America The M&As are middle market companies with revenues ranging from $5–500 million annually that compete in a variety of industries. The study defines senior managers as those who report directly to the CEO or president and middle managers as one or two reporting levels below senior managers. The sample provides a comprehensive representation of managers that receive individual and organizational based performance incentives. CEOs and senior manages usually participate in incentive plans based on stock performance, receiving stock or stock options. Middle managers usually participate in incentive plans based on organizational performance such as gainsharing or profit sharing. Both senior and middle managers commonly receive incentives based on individual performance in addition to stock or organizational incentives. **Table 2** provides a description of the respondents who completed surveys.

DATA COLLECTION

The researchers developed an online survey designed to collect self-report data regarding performance incentives, motivation, shared vision and organizational support. A secondary survey and procedure were designed to collect performance data from each respondent's immediate supervisor. Unfortunately, the sponsoring organization did not approve the secondary survey for distribution to its managers. Therefore, the researchers expanded the primary survey to include self-reported performance. IRB exemption was obtained but all protocols governing use of human subjectgs were followed. Out of 500 managers solicited, 306 returned completed surveys for a 61% response rate.

Measures

Each of the measures used to develop the survey were based on existing validated scales using 5 point Likert responses with the exception of the performance incentive measures and controls. The performance incentive items simply reported the level of financial inducements as a percentage of base salary. The controls were reported management level or demographic information.

Performance incentives

Individual performance incentives are financial bonuses based solely on the performance of the manager in relation to formal job duties. Organizational performance incentives are financial rewards based on the performance of the organization. Organizational incentives include profit sharing bonuses, gainsharing bonuses and stock options. Being a report of factual data, these items followed the standard practice of measuring financial incentives as percentages or multiples of base salary (Murphy et al., 1999).

Autonomous motivation

The items chosen to measure autonomous motivation were adapted from the Relative Autonomy Index (RAI) originally developed by Ryan and Connell (1989) and its subsequent adaptations (Williams and Deci, 1996; Black and Deci, 2000). The Relative Autonomy Index measured each type of motivation described by SDT according to its degree of autonomy (Millette and Gagné, 2008). The RAI is computed by subtracting the scores from its controlled motivation subscale from its autonomous motivation subscale, such that the more positive scores indicate higher levels of autonomous motivation (Deci and Ryan, 2008). However, according to Deci and Ryan (2008), analyses can also be conducted using either of the two subscales. Three items for each subscale were selected for this study—the item numbers correspond to the item number in the original scales.

Organizational support

The researchers chose five items from the nine-item version of the POS scale (Eisenberger et al., 1990; Wayne et al., 1997) to operationalize organizational support. The POS scale describes employee perceptions about the extent an organization values

Table 2 | Description of respondents.

Management level (MLVL)			Acquisition age (AAGE)			Age (PAGE)			Tenure (PTEN)			Gender (PGEN		
CEOs	23	8%	90 days—3 years	120	39%	18–29	68	22%	<3 years	98	32%	Male	254	83%
Senior managers	90	29%	3+ year	186	61%	30–44	154	50%	3–10 years	96	31%	Female	52	17%
Middle managers	191	62%				45+	84	27%	10+ years	112	37%			
Non-managers	2	1%												

their contributions and cares about their well-being. The items were selected because of their more consistent Cronbach's alpha coefficients of 0.81–0.93 as compared to the original (36-item) and revised (17-item) versions with reliabilities ranging from.074 to.095 (Wayne et al., 1997; Moorman et al., 1998; Fields, 2002). The five items selected for this study have the item numbers corresponding to the item number in the original scale.

Shared vision

Five items were selected from the vision subscale of the PNEA Survey (Boyatzis, 2008) to measure shared vision. The PNEA vision subscale measures the respondent's focus on and alignment with the organization's vision. The five items were chosen (from eight items in the referenced subscale) because of their particular relevance to the context of the present study. The five items selected for this study have the item numbers corresponding to the item number in the original scale.

In-role behaviors

Managerial in-role behaviors were assessed using five items adapted from a multi-dimensional scale designed to measure employee performance in the workplace (Williams and Anderson, 1991; Turnley et al., 2003). The in-role behaviors subscale specifically measures behaviors recognized by the formal reward system (Williams and Anderson, 1991; Turnley et al., 2003). This measure has been extensively used for peer, supervisor and self-reports (Fields, 2002).

Championing behaviors

Championing behaviors were measured by the "taking charge" scale which was developed to assess an individual's discretionary actions toward organizational change (Morrison and Phelps, 1999). These types of extra-role behaviors challenge the status quo by implementing changes or correcting problems in an effort to constructively improve organizational functioning. Championing behaviors are distinctively different from the altruistic, conscientious or civic virtue behaviors measured by most extra-role or organizational citizenship instruments and therefore, require a specific assessment tool (Morrison and Phelps, 1999; Chiaburu and Baker, 2006). The researchers chose the taking charge scale to operationalize championing behaviors because it targets the aggressive, change-oriented behaviors most M&As require from their managers to succeed. Five items were adapted to weigh the respondent's efforts toward solving pressing organizational problems or implementing new systems, technologies or methodologies, all of which are essential for accelerating M&A growth and performance.

Control variables

The influence of incentives, organizational support and shared vision may also vary with managerial hierarchy. Higher-level managers are likely to have different informational and interpersonal relationships with parent organizations, which could result in different attitudes (Tsui et al., 1997). A multigroup analysis was conducted to evaluate structural model invariance across senior managers and middle managers. The process involves comparing the goodness of fit between a model with structural paths constrained equal across groups to a model with no constraints (Byrne, 2001). A significant difference in chi-square indicates the models are not invariant, warranting each constraint to be released, one at a time, to pinpoint the specific paths causing the variance.

Multigroup analysis was also used to assess model invariance of managers under 45 years old to those 45 and older. Part of the M&A due diligence effort, when considering an acquisition, is to evaluate the management team. While some acquirers prefer younger management teams, feeling they are more flexible and dynamic, other acquirers prefer older management teams, feeling they are more experienced and knowledgeable (Wiersema and Bantel, 1992). The multigroup analyses was undertaken to identify if performance incentives, organizational support and shared vision affected the behaviors of senior and middle managers differently.

Other factors may impact M&A managers as well. Gender and company tenure are often considered as human capital factors that influence workplace performance (Tsui et al., 1997). As such, we included these items as control variables.

METHOD OF ANALYSIS

Normality, homoscedasticity and multicollinearity were examined; extreme outliers and influentials removed, and linear relationships were confirmed. An exploratory factor analysis (EFA) followed to uncover the latent structure of the measurement model in relation to a priori assumptions. The resulting measurement model was then subjected to a confirmatory factor analysis (CFA) to assess its fit to the data using structural equation modeling (SEM) methodologies. The researchers used SPSS and AMOS statistical software packages to conduct data and measurement model analyses.

Common method variance was of particular concern in the present study because the survey instrument was administered at the same time, in the same context, to single respondents, all of which can contribute to inflating the relationships between constructs (Podsakoff et al., 2003; Friedrich et al., 2009). Podsakoff et al. (2003) advocated the single-common-method-factor approach to control for CMV, particularly when the predictor and criterion measures were obtained from the same source and in the same context, as in this case. The procedure calls for establishing a latent factor in the measurement model which loads on each observed item. The main advantage of this approach is that it does not require the researcher to identify and measure specific causes of CMV. Unfortunately however, this approach also reflects the variance for other unmeasured variables in addition to CMV (Podsakoff et al., 2003). Other disadvantages include the tendency for this approach to result in under-identified models, particularly when the number of items is small in relation to the number of constructs, as in this case. As a solution to this problem, some researchers constrain the CMV factor loadings to be equal (Podsakoff et al., 2003). We referenced this approach to control for CMV during the analyses of measurement and structural models.

Prior to analyzing the hypothesized structural model, convergent and discriminant validity of the constructs as well as their internal reliability were assessed and confirmed. SEM techniques

were then used to evaluate the causal relationships between the constructs in the structural model (Fornell and Larcker, 1981; Byrne, 2001). Goodness of fit statistics included measures comparing predicted vs. observed covariances (chi-square, relative chi-square, and SRMR), default vs. independence models (CFI, NFI, and TLI), and predicted vs. observed covariances penalized for lack of parsimony (RMSEA). To summarize the causal relationships between constructs, the r^2 statistics for each mediating and dependent variable were tabulated with the unstandardized regression coefficient and t-value for each of its contributing explanatory variables.

Mediation testing followed the approach advocated by Mathieu and Taylor (2006). This approach incorporates iterative, systematic techniques designed to test for partial mediation, full mediation and indirect effects models. Its primary focus is on identifying indirect effects, specifically those that may suppress the total effects between predictor and criterion variables, causing many researchers to overlook important mediating relationships. The a priori assumptions of suppression effects in our hypothesized model warranted the use of this approach.

Finally, we examined the effects of the designated controls on our results. Management level and participant age were of particular interest. Therefore, multigroup analysis procedures were used to test the invariance of our model across senior and middle managers, as well as managers under and over 45 years old. Both measurement and structural models were tested for invariance.

Table 3 | Simultaneous EFA of observed variables with rotated factor loadings (n-285, EFA conducted with principal axis factoring and promax rotation and kaisaer normalization).

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
AUTONOMOUS MOTIVATION (AMOT)					
AREG1					0.620
AREG3					0.896
AREG 6					0.833
ORGANIZATIONAL SUPPORT (OSUP)					
OSUP1				0.588	
OSUP4r				0.898	
OSUP5				0.950	
SHARED VISION (SVIS)					
SVIS1		0.952			
SVIS2		0.919			
SVIS3		0.842			
IN-RLE BEHAVIORS (IBEH)					
IBEH1	0.962				
IBEH3	0.858				
IBEH5	0.916				
CHAMPIONING BEHAVIORS (CBEH)					
CBEH1			0.522		
CBEH2			0.505		
CBEH3			0.773		
CBEH4			1.047		

RESULTS

SEM requires sample sizes greater than 200 with five to ten cases per observed variable (Kline, 2005; Hair et al., 2006). The original dataset consisted of 306 cases and 28 observed variables, meeting the data adequacy requirements for SEM. Subsequent analyses resulted in a final dataset of 285 cases and 20 observed variables, still exceeding the minimum requirements for SEM.

The pre-screening process identified two cases of respondents who were not CEOs, senior managers or middle managers. The cases were removed from the dataset. SPSS generated box plots, stem and leaf diagrams, and histograms as well as skewness and kurtosis values were examined to confirm acceptable normality of the observed variables. The analysis resulted in the identification and removal of 11 outliers from the dataset.

Each dependent variable was regressed on all independent variables which confirmed linear relationships suitable for SEM analysis. For each regression, SPSS generated plots of the standardized residuals against the standardized predicted value to confirm homoscedasticity of the variables. Finally, the regressions also produced collinearity statistics, confirming that all tolerance and VIF statistics were below the acceptable multicollinearity thresholds of <0.10 and >10, respectively (Kline, 2005).

An EFA was conducted using Principal Axis Factoring and Promax rotation to uncover the minimum number of factors required to account for the maximum amount of common variance assuming oblique relationships, not orthogonal. Twenty-eight observed variables were loaded into SPSS for EFA analysis. The items measuring individual and organizational performance incentives were not included in EFA. These measures assessed the amount and type of incentives reported by the respondents. As such, they were single item measures that did not indicate latent variables. The initial EFA resulted in a five factor solution with most variables loading as hypothesized. However, several of the items had cross-loadings within 0.200, had factor loadings below 0.500, or would improve the Cronbach's alpha of the construct if it were deleted. After several iterations, a total of 10 items were removed, resulting in a clean five factor solution as depicted in **Table 3**.

Referring to **Table 3**, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity values both exceeded the desired thresholds of greater than 0.6 and less than 0.05, respectively. KMO predicted the data would factor well while the Bartlett's test indicated acceptable correlation between variables. Five factors with eigenvalues greater than 1.0 were extracted accounting for 72.8% of the total variance. All items loaded according to hypothesized groupings and exhibited relatively high and close within each factor. That is, with the exception of CBEH (Championing Behaviors). The large spread between the maximum and minimum loadings was cause for concern. However, the construct proved to exhibit both discriminant and convergent validity (confirmed in a following section) and so, the four items were retained.

The CMV factor loadings were statistically significant indicating that common method variance would have biased the results had we not controlled for it. All goodness of fit statistics presented in this study were calculated from models that controlled for CMV. It was not only model fit indices which accounted for CMV, but also the regression weights in the structural model.

Table 4 | Convergent and discriminant validity statistics.

Constructs/Dimensions	Coefficients[a]	*T*-value	Cronbach's Alpha	*CR*[b]	AVE[c]	MSV[d]	ASV[e]
Autonomous motivation (AMOT)			0.80	0.74	0.50	0.42	0.25
AREG1	0.544	7.500					
AREG3	0.818	13.311					
AREG6	0.728	11.284					
Organizational support (OSUP)			0.87	0.82	0.61	0.20	0.11
OSUP1	0.613	9.209					
OSUP4r	0.848	13.832					
OSUP5	0.853	14.898					
Shared vision (SVIS)			0.93	0.89	0.74	0.31	0.20
SVIS1	0.909	17.484					
SVIS2	0.896	17.217					
SVIS5	0.758	13.161					
In-role behaviors (IBEH)			0.93	0.87	0.70	0.09	0.04
IBEH1	0.855	14.461					
IBEH3	0.762	11.650					
IBEH5	0.880	15.102					
Championing behaviors (CBEH)			0.86	0.78	0.48	0.42	0.22
CBEH1	0.848	13.456					
CBEH2	0.785	12.441					
CBEH3	0.436	5.505					
CBEH4	0.638	9.260					

[a] *Standardized factor loadings.*

[b] *Composite Reliability.*

[c] *Average Variance Extracted.*

[d] *Maximium Shared Variance*

[e] *Average Shared Variance.*

After controlling for common method variance, the reliability and validity of each construct were assessed utilizing standardized factor loadings, composite reliabilities (CR), average variance extracted (AVE), maximum shared variance (MSV), and average shared variance (ASV) (Fornell and Larcker, 1981; Hair et al., 2006). The criteria for convergent validity includes standardized factor loadings >0.50, AVE > 0.50, and *CR* > 0.70. Per **Table 4**, all variables and constructs exceed desired thresholds except for the AVE of the Championing Behaviors construct and the standardized coefficient of one of its items, CBEH3. However, because the EFA inferred potential issues with different CBEH variables and based on the strength of other statistics, particularly Cronbach's alpha and composite reliability, no changes were made. Each construct also met the criteria for internal reliability with a Cronbach's alpha and composite reliability exceeding 0.70 (Fornell and Larcker, 1981; Nunnally and Bernstein, 1994).

AVE varies from 0 to 1, and it represents the ratio of the total variance that is due to the latent variable. Using the logic as presented earlier, an AVE of 0.5 or more indicates satisfactory convergent validity, as it means that the latent construct accounts for 50% or more of the variance in the observed variables, on the average. If AVE is less than 0.5, the variance due to measurement error is larger than the variance captured by the construct, and the validity of the individual indicators, as well as the construct, is questionable. Note that AVE is a more conservative measure than CR. On the basis of CR alone, the researcher may conclude that the convergent validity of the construct is adequate, even though more than 50% of the variance is due to error. One should also interpret the standardized parameter estimates to ensure that they are meaningful and in accordance with theory (Malhotra and Dash, 2011, p. 702).

Table 5 | SEM goodness of fit statistics for the structural model.

Goodness of fit	Criteria for good fit	Initial structural model	Respecified structural model
FIT OF PREDICTED VS. OBSERVED COVARIANCES			
Chi-square (df)	N/A	391.7 (151)	363.1 (148)
Relative chi-square (CMIN/DF)	<3.0[a]	2.6	2.1
SRMR	≤0.08[b]	0.06	0.05
FIT OF DEFAULT VS. INDEPENDENCE MODELS			
CFI	≥0.95[b]	0.93	0.94
NFI	≥0.90[c]	0.90	0.91
TLI	≥0.95[b]	0.91	0.92
FIT OF PREDICTED VS. OBSERVED COVARIANCES BUT			
RMSEA (90% CI)	≤0.06[b]	0.075 (0.066–0.084)	0.072 (0.062–0.081)

[a] *Kline (1998).*

[b] *Hu and Bentler (1999).*

[c] *Bentler and Bonett (1980).*

Table 6 | Statistical relationships between structural model constructs.

Dependent variable	R-square	Independent variables	Unstandardized coefficient	*T*-value	Standard error
Autonomous motivation (AMOT)	0.41	Individual performance incentives (IINC)	0.038	1.62	0.024
		Organizational performance incentives (OINC)	0.019	1.36	0.014
		Organizational support (OSUP)	0.134	3.45	0.039
		Shared vision (SVIS)	0.190	4.47	0.042
In-role behaviors (IBEH)	0.18	Individual performance incentives (I-INC)	0.107	2.70	0.039
		Organizational performance incentives (OINC)	−0.021	−0.85	0.024
		Shared vision (S-VIS)	0.169	2.78	0.061
		Organizational support (OSUP)	−0.131	−2.37	0.055
		Autonomous motivation (AMOT)	0.185	1.19	0.155
Championing behaviors (CBEH)	0.50	Individual performance incentives (I-INC)	−0.115	−3.90	0.029
		Organizational support (OSUP)	0.064	1.55	0.041
		Shared vision (SVIS)	0.158	3.57	0.044
		Autonomous motivation (AMOT)	0.672	5.06	0.133

To evaluate discriminant validity, AVE for each construct must be >0.50 and exceed the values of MSV and ASV (Fornell and Larcker, 1981). Again, all constructs exceed desired thresholds except for Championing Behaviors. Because its AVE is greater than its MSV or ASV and based on the strengths of other statistics, the Championing Behaviors construct was considered to have acceptable discriminant validity.

The hypothesized structural model was developed and evaluated in AMOS. It should be noted that all structural model statistics were calculated after inclusion of the control variables acquisition age (AAGE), participant tenure (PTEN, and participant gender PGEN). **Table 5** contains the resulting goodness of fit statistics. The initial model approached good fit, however, the modification indices suggested that the addition of three regression paths would improve model fit. Paths from Individual Performance Incentives to Championing Behaviors, Organizational Support to In-Role Behaviors, and Shared Vision to In-Role Behaviors were added to the model and analyzed. While the fit did not improve much, all added paths were statistically significant and therefore, were retained in the final structural model. The respecified model and impact of these non-hypothesized paths will be discussed at length in the Findings and Discussion sections.

Table 6 lists the statistical relationships between the constructs in the final structural model. The r^2 statistic represents the amount of variability in the dependent variable that can be explained by the independent variables. The unstandardized coefficient indicates raw strength of the influence of each independent variable on the dependent variable. Finally, the *t*-value provides the significance of each coefficient. A graphical representation of the structural model summarizing the statistical relationships between constructs is shown in **Figure 3**.

The researchers evaluated the mediating effects of Autonomous Motivation using techniques developed by Mathieu and Taylor (2006). These techniques constrain each path in a mediated relationship in an iterative process to determine their significance using methods such as the Sobel test and bootstrapping (Mathieu and Taylor, 2006). Mathieu and Taylor (2006) assert that these techniques will identify indirect effects that other methods will reject. Indirect effects describe variables that mediate the relationship between independent and dependent variables that are not significantly correlated to each other. In other words, the absence of significant total effect between independent and dependent variables often cause researchers to mistakenly reject significant mediated relationships. **Table 7** lists a summary of the results of mediation testing.

Table 7 | Mediation effects.

Hypothesized mediated paths	Mediation effect of autonomous motivation (A-MOT)
Individual incentives (I-INC) ⇒ In-role behaviors (I-BEH)	No mediation; direct effect
Individual incentives (I-INC) ⇒ Championing behaviors (C-BEH)	Partial mediation
Organizational incentives (O-INC) ⇒ In-role behaviors (I-BEH)	No mediation
Organizational incentives (O-INC) ⇒ Championing behaviors (C-BEH)	No mediation
Organizational support (O-SUP) ⇒ In-role behaviors (I-BEH)	No mediation; direct effect
Organizational support (O-SUP) ⇒ Championing behaviors (C-BEH)	Indirect effects mediation
Shared vision (S-VIS) ⇒ In-role behaviors (I-BEH)	No mediation
Shared vision (S-VIS) ⇒ Championing behaviors (C-BEH)	Partial mediation

A multigroup analysis (Jöreskog, 1971; Byrne, 2001) assessed the moderating effects of senior vs. middle managers and managers under 45 years old vs. those over 45. The analysis for each group was conducted in three steps. First, the factor loadings of the AMOS measurement model were constrained equal and compared to the unconstrained model. A significant difference between each model's chi-square at a 90% confidence interval served as the threshold to reject the null hypothesis that

Table 8 | Results of multigroup analysis for managers over and under 45 years old.

Construct paths	Under 45		45 and over	
	Coefficient	*T*-value	Coefficient	*T*-value
Individual incentives (IINC) ⇒ In-role behaviors (IBEH)	0.132	2.078	0.114	1.058
Individual incentives (IINC) ⇒ Championing behaviors (CBEH)	−0.278	−4.278	−0.185	−2.006
Individual incentives (IINC) ⇒ Autonomous motivation (AMOT)	0.020	0.501	0.173	2.846
Organizational incentives (O-INC) ⇒ In-role behaviors (I-BEH)	−0.179	−2.627	−0.033	−0.298
Organizational incentives (OINC) ⇒ Autonomous motivation (AMOT)	0.133	3.115	−0.130	−2.295
Organizational support (O-SUP) ⇒ In-role behaviors (I-BEH)	−0.202	−2.910	0.196	1.673
Organizational support (O-SUP) ⇒ Championing behaviors (C-BEH)	0.259	3.575	0.137	1.285
Organizational support (O-SUP) ⇒ Autonomous motivation (AMOT)	0.125	2.887	0.233	3.177
Shared vision (S-VIS) ⇒ In-role behaviors (I-BEH)	0.146	1.931	0.388	2.975
Shared vision (S-VIS) ⇒ Championing behaviors (C-BEH)	0.283	3.465	0.254	2.633
Shared vision (S-VIS) ⇒ Autonomous motivation (AMOT)	0.262	5.307	0.226	2.965
Autonomous motivation (AMOT) ⇒ In-role behaviors (I-BEH)	0.570	4.023	−0.152	−0.465
Autonomous motivation (AMOT) ⇒ Championing behaviors (C-BEH)	0.346	2.486	0.151	0.494

Coefficients listed are unstandardized regression weights.

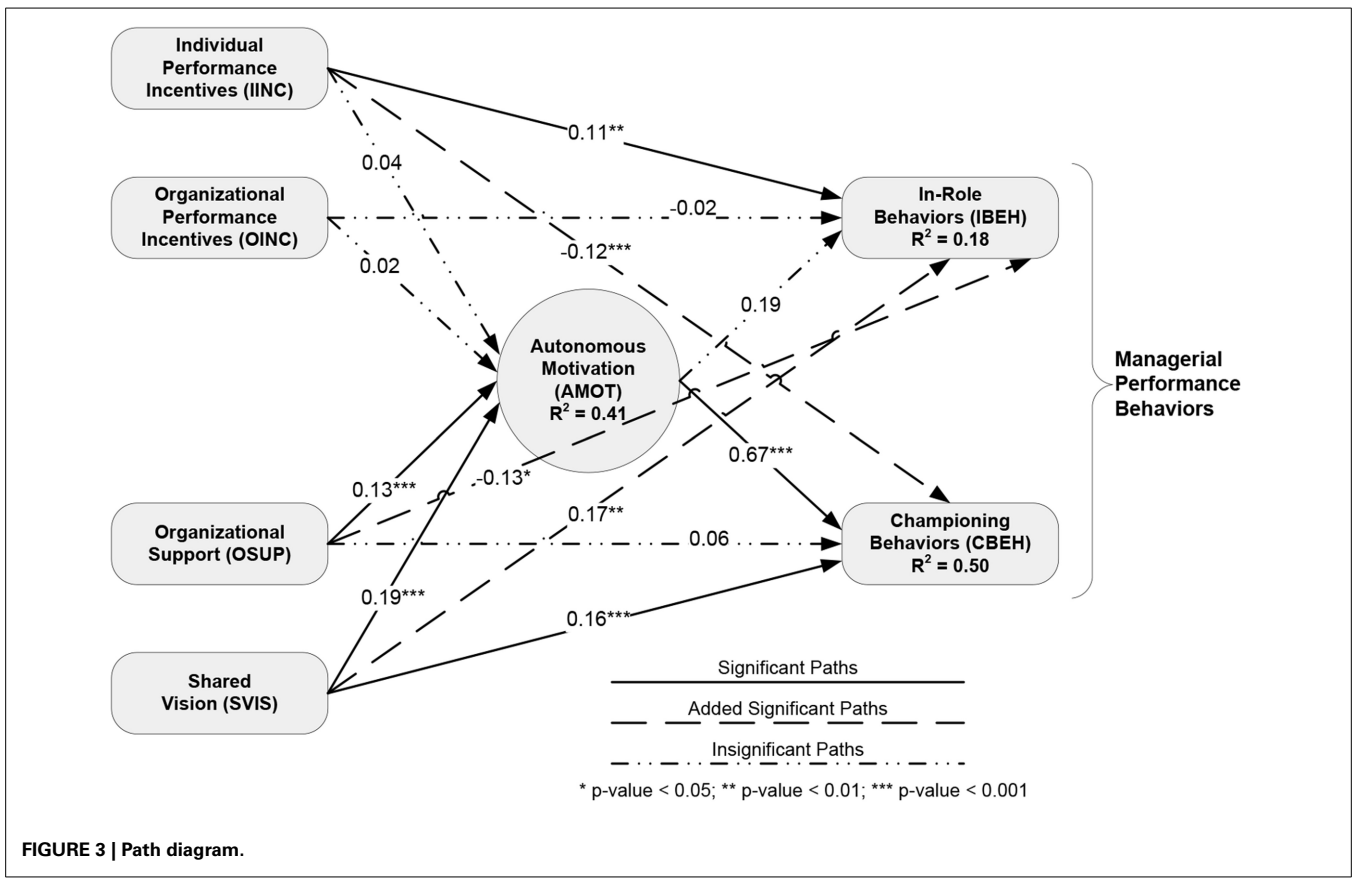

FIGURE 3 | Path diagram.

the measurement model was invariant across groups. Because the measurement model was not invariant across management level or age groups, each constraint was released and compared via subsequent models to determine which specific factors were non-invariant. Finally, the non-invariant factors were allowed to estimate freely, which raised the chi-square significance to 0.183 for senior vs. middle managers and 0.083 for managers under vs. over 45 years old.

A similar procedure was used to assess structural model invariance. The causal paths between constructs were constrained equal and compared across groups. Interestingly, all paths were invariant across management level groups while none of the paths were

Table 9 | Summary of hypothesis testing.

Hypothesis	Finding
Hypothesis 1: Individual performance incentives positively influence in-role behaviors after controlling for autonomous motivation	Supported
Hypothesis 2: Organizational performance incentives positively influence in-role behaviors after controlling for autonomous motivation	Rejected
Hypothesis 3: Individual performance incentives have a stronger (more positive) influence on in-role behaviors than organizational performance incentives	Supported
Hypothesis 4: Individual performance incentives negatively influence autonomous motivation	Rejected
Hypothesis 5: Organizational performance incentives negatively influence autonomous motivation.	Rejected
Hypothesis 6: Autonomous motivation positively influences in-role behaviors.	Rejected
Hypothesis 7: Autonomous motivation positively influences championing behaviors	Supported
Hypothesis 8: Autonomous motivation has a stronger (more positive) influence on championing behaviors than in-role behaviors	Supported
Hypothesis 9: Autonomous motivation negatively mediates the influence of individual performance incentives on in-role behaviors	Rejected
Hypothesis 10: Autonomous motivation negatively mediates the influence of organizational performance incentives on in-role behaviors	Rejected
Hypothesis 11: Autonomous motivation negatively mediates the influence of individual performance incentives on championing behaviors	Rejected
Hypothesis 12: Autonomous motivation negatively mediates the influence of organizational performance incentives on championing behaviors	Rejected
Hypothesis 13: Organizational support positively influences autonomous motivation	Supported
Hypothesis 14: Organizational support positively influences championing behaviors	Rejected
Hypothesis 15: Autonomous motivation positively mediates the influence of organizational support on in-role behaviors	Rejected
Hypothesis 16: Autonomous motivation positively mediates the influence of organizational support on championing behaviors	Supported
Hypothesis 17: Share vision positively influences autonomous motivation	Supported
Hypothesis 18: Share vision positively influences championing behaviors	Supported
Hypothesis 19: Autonomous motivation positively mediates the influence of shared vision on in-role behaviors	Rejected
Hypothesis 20: Autonomous motivation positively mediates the influence of shared vision on championing behaviors	Supported

Table 10 | Construct paths w/opposite significance and regression differences >0.02.

Construct paths	Under 45		45 and over	
	Coefficient	*T*-value	Coefficient	*T*-value
Organizational support (O-SUP) ⇒ Championing behaviors (C-BEH)	0.259	3.575	0.137	1.285
Autonomous motivation (AMOT) ⇒ Championing behaviors (C-BEH)	0.346	2.486	0.151	0.494
Organizational incentives (O-INC) ⇒ In-role behaviors (I-BEH)	−0.179	−2.627	−0.033	−0.298
Shared vision (S-VIS) ⇒ In-role behaviors (I-BEH)	0.146	1.931	0.388	2.975
Autonomous motivation (AMOT) ⇒ In-role behaviors (I-BEH)	0.570	4.023	−0.152	−0.465
Individual incentives (IINC) ⇒ Autonomous motivation (AMOT)	0.020	0.501	0.173	2.846

Coefficients listed are unstandardized regression weights.

invariant across the manager age groups. Releasing each of the constraints across age groups revealed specific differences of how our hypothesized model applied to managers over and under 45 years old. **Table 8** provides information useful in deciphering and discussing these differences in the next sections.

The structural model also controlled for acquisition age, manager tenure and manager gender. Of nine possible effects (nine paths connecting three controls to two dependent and one mediating variables), only two were significant. Managers' tenure was likely to positively influence their in-role behaviors (unstandardized regression coefficient = 0.155; *t*-value 2.77) and acquisition age was likely to positively influence managers' autonomous motivation (unstandardized regression coefficient = 0.125; *t*-value 2.26).

DISCUSSION

Results of the hypotheses tested are shown in **Table 9**. For a listing of r^2 values, regression coefficients and *t*-values please refer to **Table 6** and **Figure 3**.

INFLUENCES ON CHAMPIONING BEHAVIORS

The combination of performance incentives, organizational support, shared vision and autonomous motivation accounted for 50% of the variance in championing behaviors. Shared vision had a direct, positive and highly likely influence on championing behaviors. In fact, it was the only independent variable to have a direct positive impact on championing behaviors.

Shared vision also indirectly influenced championing behaviors via autonomous motivation, indicating partial mediation. The total effect of shared vision on championing behaviors was 0.286. Comparing the total effects of the independent variables, shared vision had a stronger impact on championing behaviors than individual incentives, organizational incentives and organizational support combined.

An unexpected finding indicated that individual performance incentives directly reduced championing behaviors. At first glance, this was counterintuitive because individual incentives target in-role behaviors only. However, researchers have proposed an inverse relationship between in-role and organizational

citizenship behaviors (OCBs). Bergeron (2007) proposed that under an outcome based reward system, increases in OCBs will result in decreases in in-role behaviors and vice-versa. Given the fact that OCBs and championing behaviors are both forms of extra-role behaviors (Morrison and Phelps, 1999), it appears that our findings reflect Bergeron's work.

The mediation analysis reported a significant and positive indirect mediation between organizational support and championing behaviors via autonomous motivation. In this case, the indirect mediation at nearly 50% stronger than the non-significant direct effect, 0.09 vs. 0.06, respectively.

The mediation analysis also showed that autonomous motivation partially mediated the influence of individual incentives on championing behaviors. This finding conflicted with the unconstrained analysis in **Figure 3** depicting the path between individual incentives and autonomous motivation as non-significant (negating mediation). As such, the mediation analysis provided the more accurate assessment of the mediation relationship by isolating individual paths to better examine their effects and by using bias-corrected bootstrapping for estimation.

The resulting finding indicated that autonomous motivation positively mediated the influence of individual incentives on championing behaviors. However, the unexpected negative direct effect between individual incentives and championing behaviors resulted in a negative total effect. It should also be noted that the positive indirect effect of individual incentives on championing behaviors was very weak. The regression coefficient of 0.03 was only 25% of the direct effect.

Finally, organizational support did not positively influence championing behaviors. In addition to a low *t*-value of 1.55, organizational support had a weak influence on championing behaviors with a regression coefficient of 0.06.

INFLUENCES ON IN-ROLE BEHAVIORS

The combination of performance incentives, organizational support, shared vision and autonomous motivation accounted for only 18% of the variance in in-role behaviors. Of the three hypothesized direct effects, only one, individual incentives had a significant effect. Neither organizational incentives nor autonomous motivation significantly influenced in-role behaviors. Because autonomous motivation did not significantly influence in-role behaviors, none of the mediation hypotheses for in-role behaviors were significant. However, we caution the confidence in this finding because of the high standard error of 0.155 for the autonomous motivation (AMOT) → in-role behaviors (IBEH) path which certainly increases the chance for a Type 1 error. A lower standard error would negate the rejection of several of the mediation hypotheses, substantially changing the findings of the overall study. In consideration of subsequent research, researcher should improve the items measuring autonomous motivation to achieve more accurate predictions of mediation hypotheses.

The most interesting finding here was how little organizational incentives influenced in-role behaviors. With a direct effect of −0.021, indirect effect of 0.004 and total effect of −0.017, all values were non-significant. This finding suggested that the common practice of providing substantial organizational incentives to M&A managers is totally ineffective.

An unexpected finding revealed that shared vision directly and positively influenced in-role behaviors. In fact, the influence of shared vision on in-role behaviors was 35% stronger than the influence of individual incentives on in-role behaviors with regression coefficients of 0.17 and 0.11, respectively. This is quite intriguing considering the strong pay-performance link between individual incentives and in-role behaviors asserted in compensation literature (Bucklin and Dickinson, 2001; McGee et al., 2006). We believe this may be an engaging topic for further research.

The previous section discussed the opposite effects that individual incentives had on in-role and championing behaviors and how it supported the work of Bergeron (2007). In other words, these opposite effects mimicked the inverse relationship between in-role and OCBs proposed by Bergeron. A similar phenomenon was caused by the negative direct effect of organizational support on in-role behaviors vs. the positive indirect effect of organizational support on championing behaviors. As organizational support increased, championing behaviors increased and in-role behaviors decreased.

INFLUENCES ON AUTONOMOUS MOTIVATION

The combination of performance incentives, organizational support, and shared vision accounted for 41% of the variance in autonomous motivation. Organizational support and shared vision were the major predictors of autonomous motivation virtually contributing all of the effect. Conversely, the regression coefficients linking individual and organizational incentives to autonomous motivation were among the weakest in the study at 0.04 and 0.02, respectively. This is an interesting outcome considering SDT posits that incentives decrease autonomous motivation. In this study and setting, SDT did not hold. In fact, the effects of performance incentives on autonomous motivation paled in comparison to the effects of organizational support and shared vision on autonomous motivation.

COMPARATIVE HYPOTHESES

Hypotheses 3 and 8 predicted the comparative strengths of two pairs of conceptualized paths. Hypothesis 3 asserted that the stronger pay-performance link between individual incentives and in-role behaviors would result in a stronger influence than organizational incentives. The influence of individual incentives was not only substantially stronger but was significant as compared to a weak and non-significant effect for organizational incentives.

Hypothesis 8 posited that autonomous motivation would be a stronger predictor of championing behaviors than in-role behaviors. The data supported this hypothesis. The regression coefficient for its effect on championing behaviors was 3.5 times stronger than its effect on in-role behaviors. In addition, the data suggested much more confidence in the ability of autonomous motivation to predict championing behaviors with a *t*-value of 5.06 compared to 1.19.

CONTROLS

The multigroup SEM analysis indicated that the structural model was invariant across senior and middle managers but not

invariant across managers over and under 45 years old. **Table 8** lists the regression coefficients and *t*-values for each path of the diagram depicted in **Figure 3** for managers over and under 45 years old.

Referring to **Table 8**, there are 13 paths that AMOS reported as significantly different for managers under vs. over 45 years old. Of the 13 paths, 8 of them disagreed on significance, that is, one path was significant and the other was not significant. Of those 8 paths, 6 of them have regression coefficients with differences >0.02. These 6 paths represent the major differences in construct relationships between managers under 45 and those over 45 and are listed in **Table 10**.

Per **Table 10**, the championing behaviors of managers under 45 were more sensitive to organizational support and autonomous motivation than those over 45. The regression coefficients for younger managers were roughly twice the strength of these effects on older managers. The in-role behaviors of younger managers were also more sensitive to organizational incentives and autonomous motivation, reporting regression coefficients between 3.8 and 5.4 times those for older managers. These findings indicated that younger managers cared more about how the organization perceives them. The behaviors of younger managers were also more influenced by how much they internalized the organization's goals (autonomous motivation). In general, the data indicated that younger managers were much more sensitive to the support, incentives and goals of the organization than older managers.

Conversely, older managers cared more about shared vision, defined in this study as their alignment with the overall direction and purpose of the organization. Shared vision positively influenced the in-role behaviors of older managers more than 2.5 times that of younger managers. As individuals age, they are less likely to look for a new job (Martin, 1979; Griffeth et al., 2000). In mergers and acquisitions, individuals who identify with the vision of the organization are also less likely to look for a new job and more likely to increase their performance (Haslam, 2001; Cartwright, 2005). These two notions suggest that older M&A employees should be more sensitive to shared vision and that increases in shared vision should reduce turnover intent and increase performance.

The multigroup analysis also indicated that individual incentives influenced the autonomous motivation of older managers much more than younger managers. However, because autonomous motivation did not significantly influence either in-role or championing behaviors of older managers, this finding doesn't matter. Regardless of how much individual incentives impact the autonomous motivation of older managers, it does not significantly influence their behaviors.

The structural model controlled for acquisition age, manager tenure and manager gender. Of the nine possible effects, only two effects were significant. First, the findings reported a positive relationship between manager tenure and in-role behaviors with a regression coefficient of 0.16 and *t*-value of 2.77. This outcome seems intuitive as one would expect managers to become more efficient in their formal, in-role behaviors over time.

The findings also reported a significant positive relationship between acquisition age and autonomous motivation with a regression coefficient of 0.13 and a *t*-value of 2.26. These effects were consistent with researchers who posit that it takes time for employees to reconcile their feelings of uncertainty regarding large-scale organizational change (Liu and Perrewé, 2005), resulting in a temporary reduction in work motivation, specifically in mergers and acquisitions (Seo and Hill, 2005).

M&A PRACTICE IS WRONG ON CHAMPIONING BEHAVIORS

The findings directly conflict with one of the most common and longstanding M&A assumptions that organizational performance incentives induce discretionary behaviors from acquired managers (Kaplan, 2000; Hitt et al., 2001; Larsson and Finkelstein, 2002). According to the data, organizational incentives did not significantly affect championing behaviors directly or indirectly. In fact, AMOS reported the total effect of organizational incentives on championing behaviors at a negligible 0.01.

These findings suggest that the ubiquitous use of stock options and profit sharing plans in M&A may be a waste of time and money. Seemingly, the implication to practice would be to eliminate organizational performance incentives. However, the practice of offering acquired manager's stock options and profit sharing has become an expected practice. These expectations may contribute to the loss of incentive power, possibly explaining the poor effects of these incentives on manager behaviors. In either case, should an acquirer fail to offer organizational incentives or offer substantially reduced versions, the effect on management morale and turnover could be devastating to the company. This dilemma suggests an agenda for future research, exploring the effects of various levels of organizational performance incentives on managerial morale, turnover and performance in an M&A context.

M&A PRACTICE IS WRONG ON SHARED VISION

Shared vision was the only independent variable that positively influenced both championing and in-role behaviors. Surprisingly, shared vision impacted in-role behaviors more than individual performance incentives, despite its strong pay-performance link. Shared vision was also one of only two variables to significantly influence autonomous motivation.

One of the first duties of acquirers is to establish performance incentives of their newly acquired managers. In fact, stock incentives for CEOs and senior managers are usually established prior to the official transaction as part of the legal paperwork Details of profit sharing plans and individual performance bonuses soon follow.

The study findings imply that M&A practitioners should establish a higher priority on shared vision. Other researchers have identified shared vision as essential to the successful performance of merged and acquired organizations (Haspeslagh and Jemison, 1991; Sitkin and Pablo, 2005). Serial acquirers such as GlaxoSmithKline and Cisco Systems promote shared vision as an important part of their acquisition successes (DiGeorgio, 2001; Stahl and Mendenhall, 2005). Whereas, these sources base their arguments on qualitative findings, the present study contributes quantitative evidence to support the importance of shared vision, directly comparing their effects to those of performance incentives in an M&A context. Furthermore, the strength

of the quantitative results suggests that M&A practitioners should prioritize shared vision above performance incentives.

INDIVIDUAL INCENTIVES AND PRGANIZATIONAL SUPPORT

Study findings indicated that individual incentives positively influenced in-role behaviors and negatively influenced championing behaviors. The absolute strengths of these bipolar effects were almost identical with direct effects of 0.11 and −0.12, respectively. This finding was consistent with the assertions of some practitioners and researchers that individual incentives can work "too well," causing individuals to focus almost exclusively on in-role behaviors to the detriment of extra-role behaviors (Kohn and Thompson, 1993; Wright et al., 1993; Deckop et al., 1999; Hall and Murphy, 2003). Acquirers commonly address this issue by providing organizational incentives in addition to individual incentives to induce extra-role behaviors that foster cooperation and teamwork (FitzRoy and Kraft, 1995). Our findings supported the idea that individual incentives decrease championing behaviors but did not support the idea that introducing organizational incentives would offset the decrease.

The data did support the idea that increasing organizational support would offset the negative effects of individual incentives on championing behaviors. Organizational support positively influenced championing behaviors (indirect effect 0.09) but also negatively influenced in-role behaviors (direct effect −0.13). This supports the work of researchers who argue that focus on extra-role behaviors reduce the performance of in-role behaviors (Bergeron, 2007).

By highlighting the gains and costs of increasing individual incentives and organizational support, the study findings provide insights for cultivating desired managerial behaviors. For example, increasing organizational support for managers charged with large-scale change efforts should help foster the championing behaviors required to overcome resistance to aggressive growth and change. Conversely, increasing individual performance incentives should help cultivate the in-role behaviors of managers charged with sustaining day-to-day operational efficiencies, especially during periods of environmental disruptions typical in M&As.

AGE MATTERS

The effect of organizational support on younger managers' championing behaviors was roughly 2 times stronger than older managers. The effect of organizational incentives on younger managers' in-role behaviors were over five times stronger than older managers. The degree that younger managers internalized current organizational goals (autonomous motivation) affected their championing and in-role behaviors 2–3.5 times more than older managers. In contrast, shared vision influenced the in-role behaviors of older managers 2.5 times more than younger managers.

These findings imply a difference in temporal focus for younger vs. older managers. The items of concern for younger managers, organizational support, incentives and current goals represent current actions, promises or objectives. The concern for older managers, shared vision, focuses more on what the company will become in the future. While plausible, there is little evidence in the scope of the present study to support this explanation. However, this may be an interesting topic for future research.

As mentioned earlier, the effect of organizational incentives on younger managers' in-role behaviors were over five times stronger than older managers. This statistic implies that older managers performed their formal duties more consistently than younger managers, despite fluctuations in organizational incentives. This implication was supported by the substantially lower standard deviation for in-role behaviors of older vs. younger managers at 0.62 vs. 0.77. In addition, the mean for in-role behaviors of older managers (3.85) was higher than younger managers (3.72), inferring that older managers performed their formal duties better than younger managers as well as more consistently. The data suggests that acquirers should note the ages of their managers when designing organizational incentive plans.

LIMITATIONS

The researchers acknowledge several limitations of this study. First, the study is cross-sectional which means the causal relationships can only be hypothesized from previous research and theory. Future research should utilize a longitudinal approach as a more rigorous analysis of our proposed causal relationships.

Second, common method variance was present due to the nature of the self-report data. Therefore, we modeled a latent common method factor that was constrained to load equally on all observed variables in the measurement and structural models. By doing so, we attempted to partial out the variance due to the common method.

Finally, the sample included M&As owned by private equity firms only. This is but one segment of many in the M&A domain. Replication of the study exploring other segments would be required to test the generalizability of our findings.

CONCLUSION

To our knowledge, this is the first M&A study to integrate financial and psychological drivers of managerial performance into a single testable model. Although this initial study certainly requires further testing and refinement, we assert that the findings provide valuable insights toward understanding the drivers of managerial behaviors within mergers and acquisitions. Specifically, the study provides evidence that shared vision is far more effective at driving managerial performance, as defined by in-role and championing behaviors, than common M&A practices of providing financial incentives. This is an important step forward in reducing the dismal failure rates that continue to plague the M&A domain.

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 20 September 2014; accepted: 29 November 2014; published online: 06 January 2015.

Citation: Clayton BC (2015) Shared vision and autonomous motivation vs. financial incentives driving success in corporate acquisitions. Front. Psychol. ***5****:1466. doi: 10.3389/fpsyg.2014.01466*

This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology.

frontiers in PSYCHOLOGY

ORIGINAL RESEARCH ARTICLE
published: 27 February 2015
doi: 10.3389/fpsyg.2015.00150

Group learning capacity: the roles of open-mindedness and shared vision

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Open-mindedness (OPM) is a construct that is considered a key foundational aspect of learning in individuals, groups and organizations. Also known as critical inquiry or reflection, OPM is believed to increase learning through examination of prior beliefs, decisions and mistakes, and also through openness to new ideas. Renowned theorists including Dewey and Argyris have emphasized the relationship between OPM and learning, yet little quantitative research has tested it or examined moderators of the linkage. The setting for the current study is that of endowment investment committees at U.S. universities and colleges who need to make knowledgeable and well-reasoned decisions about the composition of investment portfolios. Findings indicate that OPM has a positive, significant effect on group learning capacity (LCAP) and also that shared vision, which represents the group's collective purpose and direction, moderates that relationship. The literature review and discussion offer insights about how OPM is related to the research on group conflict, and how shared vision (SHV) differs from concepts such as interpersonal cohesiveness and conformity that have been associated with groupthink. A review of relevant research from the fields of organizational learning, group dynamics, and absorptive capacity provides context for the development of the hypotheses and the discussion of findings.

Keywords: learning capacity, shared vision, open-mindedness, organizational learning, absorptive capacity, cohesiveness, task conflict, groupthink

INTRODUCTION

From Socrates to modern learning theorists, open-mindedness (OPM) has been considered essential to learning and understanding. Dewey (1933), Kolb (1984) and Argyris (1976) all have underscored the significance that the ancient Greeks placed on inquiry, openness, dialog, and critical reflection. Yet empirical research examining the relationship between OPM and learning is scant relative to the volumes on theory, and particularly in group decision-making domains. In addition, little empirical research has explored how interpersonal dynamics in groups might moderate the relationship between OPM and learning.

The purpose of this study, situated within the broad fields of organizational learning and behavior, is to provide additional insights about how groups learn and especially about the types of dialogs and group dynamics that foster learning. We will test the relationship between OPM and learning capacity (LCAP) in decision-making groups, as well as the effect of shared vision (SHV) on that relationship. In our literature review and discussion, we will explore how different types of cohesiveness affect group learning and effectiveness, and whether SHV is situated within the cohesiveness spectrum. We will argue that because SHV coexists with OPM in this study, it provides a positive contribution to group learning capacity. In contrast, if SHV co-existed with closed-mindedness, one could expect it (along with closed-mindedness) to detract from group learning capacity. In the latter context, SHV might be related to the strong interpersonal attraction aspect of cohesiveness associated with groupthink, a type of behavior that lacks independent critical thinking and is focused primarily on reaching consensus (Janis, 1972, 1983), thus restricting group learning capacity.

Given that OPM and group task conflict overlap with regards to the emphasis placed on critical reflection and assessment, we suggest that literature on task conflict has strong relevance to this study. Task conflict occurs when there are "disagreements among group members about the content of the tasks being performed, including differences in viewpoints, ideas, and opinions" (Jehn, 1995, p. 258). We will discuss similarities between OPM and task conflict, and especially when expressions of task conflict are mild rather than intense (Todorova et al., 2014). While task conflict has been researched predominantly in terms of its positive influence on decision quality, the current study uses the concept of OPM as a predictor and examines its influence on a different dependent variable, learning capacity.

We adopt the term LCAP as our dependent variable because it signifies the ability of organizations, groups/teams and individuals to engage in learning processes leading to positive outcomes such as performance, competitive advantage, innovation, adaptability, and knowledge transfer (Volberda et al., 2010; Van Wijk et al., 2011). The term has been used as a synonym for "absorptive capacity" to describe a group's ability to acquire relevant external information, integrate it with existing knowledge, and exploit it to commercial benefit (Cohen and Levinthal, 1990). LCAP has

been characterized as a process of gaining knowledge (Lane et al., 2006), which is considered a key resource of an organization and a primary source of competitive advantage (Barney, 1991; Grant, 1996; Kogut and Zander, 1996).

We define OPM as a group's critical assessment of its assumptions, beliefs and prior actions, as well as its openness to new ideas (Sinkula et al., 1997; Calantone et al., 2002). This critical assessment concept resembles Dewey's description of reflection: "assessing the grounds (justification) of one's beliefs" (Dewey, 1933, p. 9). Reflection is often used as a synonym for higher-order processes (Mezirow, 1990) or double-loop learning (Argyris and Schön, 1978), which results in transcending current ways of thinking and acting. The OPM construct in this study also bears strong resemblance to the term "authentic inquiry" (Mazutis and Slawinski, 2008), which encourages critical reflection and open dialog. Without open dialog, individuals may engage in defensive routines that inhibit their learning (Argyris and Schön, 1978). They may not be willing to examine and learn from past mistakes and thus may withhold information that they perceive as detrimental to others' perceptions of themselves. When authentic dialog is encouraged, members are more likely to confront conflict through inquiry and to seek understanding without engaging in power struggles (Mazutis and Slawinski, 2008).

The OPM construct has been employed widely in marketing literature as a first-order factor within a second-order reflective factor called learning orientation, which is described as a set of organizational values that influence individuals' and groups' propensity to seek and use knowledge (Sinkula et al., 1997). Organizations with a learning orientation have a sense of direction for their learning as well as a critical-assessment approach that encourages open debates and questioning of assumptions (Slater and Narver, 1995). Learning orientation studies typically include learning commitment and SHV as other first-order factors. To the best of our knowledge, the current study is unique in focusing on OPM and SHV as stand-alone factors that influence learning capacity. We employ OPM as having the main effect on LCAP due to its prominence in theoretical literature, and SHV as a moderator due to its motivational and purpose-oriented characteristics that would enhance the primary relationship. Learning commitment is not included in this study since we believe that its characteristics are largely subsumed in SHV and OPM.

Unlike other studies on LCAP and its antecedents in the domains of manufacturing, marketing and information technology, this study's domain is that of decision-making committees in non-profit institutions, and specifically the investment committees of college and university endowments. These committees, composed largely of alumni volunteers, typically are charged with making important decisions affecting the composition and performance of endowment portfolios. Understanding factors that affect portfolio decisions and performance is critical for college and university leaders since the endowment earnings can have a significant impact on the financial health of the institution (Brown et al., 2010). As with many other decision-making groups whose environments are constantly changing, investment committees need to be able to acquire relevant information from the external world (i.e., the financial markets and external experts) on a continual basis, to assimilate it with their existing knowledge, and to implement it successfully. In a quantitative study about endowment management (Lord, 2014b), committees who understood how to implement their investment-related knowledge had more diversified portfolios and higher risk-adjusted returns.

In the following section, we will formalize our hypotheses by examining research on learning capacity, OPM and shared vision. Our empirical study is based on a survey of "key informants" who are involved with investment committees at 168 U.S. university endowments.

BACKGROUND AND HYPOTHESES

Our study is situated in the field of organizational learning, which has been defined as a process of improving organizational actions through better knowledge and understanding (Fiol and Lyles, 1985; Garvin, 1993). Organizational learning researchers have addressed cognitive types of learning (Kolb, 1984; Argyris, 1999) as well as learning processes (Levitt and March, 1988; Huber, 1991; Tippins and Sohi, 2003). Certain researchers (Huber, 1991; Tippins and Sohi, 2003) refer to four processes in organizational learning: (a) information acquisition; (b) information sharing; (c) information interpretation; and (d) information storage. Other organizational learning researchers refer to only two processes: (a) explore and exploit (March, 1991); (b) organizational search and trial/error (Levitt and March, 1988); and (c) reflection and action (Edmondson, 2002). Learning theorists differ as to whether taking action (or exploiting) is a requirement of organizational learning. Huber (1991) and Tippins and Sohi (2003) clearly do not have that requirement. In fact, Huber states that organizational learning has occurred if, through the group's processing of information, the range of its *potential* behaviors has changed. In contrast, Edmondson (2002), March (1991) and Levitt and March (1988) clearly require that action must be taken in order for learning to have occurred.

Another stream of research related to the field of organizational learning is called "knowledge management" (Bassi, 1999), which focuses largely on managing what is learned, including storing and retrieving knowledge. Also related is the dynamic capabilities framework, developed by Teece et al. (1997), which refers to the ability to renew and adapt competencies in order to be in sync with rapidly changing business environments.

While incorporating aspects of these related constructs, LCAP is distinguished by its emphasis on acquiring relevant "external" information and by its imperative of implementing or "exploiting" the knowledge successfully. LCAP has been theorized and employed in research studies as having one, two, three or four dimensions (or processes). In early conceptualizations of the learning (or absorptive) capacity construct, Cohen and Levinthal (1989, 1990) referred to its three dimensions of identifying relevant information, assimilating it, and applying new knowledge successfully, yet they did not provide a measurement tool other than research and development expenditures. Szulanski (1996) used a unidimensional measure and found that the lack of recipient absorptive capacity is a major barrier to knowledge transfer between different functions in an organization. Zahra and George (2002) re-conceptualized the construct into two primary dimensions with each having two sub-dimensions: potential absorptive capacity consisting of acquisition and assimilation of

new external knowledge; and realized absorptive capacity consisting of knowledge transformation and exploitation. Jansen et al. (2005) operationalized the construct with all four subdimensions and tested for antecedents of coordination, systems, and socialization capabilities. Lichtenthaler (2009) followed Cohen and Levinthal's guidance of three dimensions, employing exploratory, transformative, and exploitative learning processes with measurement items borrowed from previous studies. In sum, the LCAP construct has been operationalized in multiple ways with varying dimensions and scales (Lane et al., 2006). In this study we are focused on the holistic meaning of LCAP and not on the distinct dimensions or processes of it. Therefore, we employ a unidimensional factor for LCAP that we believe captures Cohen and Levinthal's (1989, 1990) conceptualization.

Our hypotheses in this study are in alignment with: (a) the learning disciplines of Senge (1990) that emphasize the need for SHV and open dialogs that are oriented to finding truth; (b) a set of learning-oriented activities called "teaming" which encourage group members to collaborate and to engage in honest and reflective conversations (Edmondson, 2012); and (c) a learning environment called "ba" which supports learning creation and an ongoing re-evaluation of existing premises (Nonaka et al., 2000).

OPEN-MINDEDNESS AND LEARNING CAPACITY

Dewey (1933) stated that OPM (which he called "reflection") refers to assessing the grounds or justification of one's beliefs. Similarly, more recent researchers argue that OPM is critical for examining individuals' mental models, which are deeply held beliefs or conceptions that may confine them to familiar patterns of thinking and acting (Senge, 1990; Day and Nedungadi, 1994; Sinkula et al., 1997). If these deeply held beliefs and assumptions are not questioned and altered, groups' effectiveness will be diminished (Day, 1994; Sinkula, 1994). When group members have differences in their interpretation of task-related issues, they experience greater learning and gain a more accurate assessment of situations (Fiol, 1994). Argyris and Schön (1978) maintain that a key aspect of OPM is its attention to detecting and correcting errors, which they consider essential to organizational learning.

Examination of deeply held convictions and consideration of alternative perspectives often involve a relatively high level of disagreement (Janis, 1972; Jehn, 1995; Slater and Narver, 1995). Disagreement that remains task-oriented is referred to as both "cognitive conflict" and "task conflict" and has been found to result in higher-quality decisions (Amason and Schweiger, 1994; Amason, 1996). In their research on corporate board decision-making, Forbes and Milliken (1999) argued that cognitive conflict fosters an environment that is characterized by a task-oriented focus and a tolerance of multiple viewpoints and opinions; thus, it promotes critical discussions and helps to prevent groupthink. Because cognitive conflict remains task-oriented, it is not to be confused with affective (or relationship) conflict, which can become personal and damage the group's commitment and ability to work together (Amason, 1996). Researchers have suggested techniques and tools to help leaders and group members foster and maintain OPM so that conflicts remain task-oriented and not personal. Among those are: (a) developing and expressing one's own view; (b) questioning and understanding other views; (c) integrating and creating solutions; and (d) agreeing to and implementing solutions (Tjosvold et al., 2014). Another suggestion is to assign a member (or members) to serve as a devil's advocate, questioning group members' underlying assumptions and opinions (Amason, 1996).

Cognitive (or task) conflict has typically been studied as an antecedent to higher quality decisions rather than to learning capacity. One empirical study found that "openness" led to organizational learning (Hult et al., 2000) but the openness construct had two dimensions, participativeness and reflectiveness, whereas only the latter resembles the OPM construct employed in this study. As noted previously, OPM has been used in empirical studies more as a first-order factor of learning orientation than as a stand-alone construct. In a study that did examine it as a stand-alone factor, OPM was found to have a significant and positive effect on product innovation (Calisir et al., 2013); the study did not employ a learning construct. Although a significant body of literature has *discussed* the linkage between OPM and learning, we have been unable to find a study that *empirically tests* that relationship in group decision-making settings.

Hypothesis 1. Open-mindedness will have a positive effect on learning capacity.

SHARED VISION AS A MODERATOR

SHV has been described as the embodiment of a group's collective goals and aspirations (Tsai and Ghoshal, 1998) as well as its shared sense of purpose and operating values (Senge, 1990). SHV is considered essential for proactive learning because it fosters commitment, energy and purpose among group members (Tobin, 1993; Day, 1994). Similarly, Senge (1990) states that learning cannot occur without SHV since it provides the "pull" toward goals that helps to overcome forces of inertia.

SHV helps to motivate teams (Van den Bossche et al., 2006); to promote sharing of perspectives and knowledge (Bunderson and Reagans, 2010); to promote positive feelings and commitment among members (Boyatzis, 2008); to foster greater organizational engagement (Mahon et al., 2014); and to legitimize the acquisition and assessment of new knowledge (Lyles and Salk, 1996). When team members share common or cooperative goals they are open to problem-solving approaches that help them learn from mistakes (Tjosvold et al., 2004); in contrast, competitive goals have been found to correlate negatively with collective problem-solving approaches and to undermine group learning. Tsai and Ghoshal (1998) state that SHV and collective goals are reflections of the cognitive dimension of social capital.

Strong interpersonal cohesiveness of group members, on the other hand, has been associated with groupthink (Mullen et al., 1994), which has been described as a dysfunctional mode of decision making that can occur when there is a lack of independent critical thinking and when there is a strong desire to have unanimity among members (Janis, 1972, 1983). However, while cohesiveness may be a determinant of groupthink, it is not sufficient (Janis, 1972). Cohesiveness must be accompanied by directive leadership and a lack of cognitive conflict to foster groupthink; when cognitive conflict is present it fosters an environment with a task-oriented focus and a tolerance of multiple

viewpoints and opinions (Janis, 1983; Bernthal and Insko, 1993). Thus, a distinction has been made between a type of cohesiveness that is task-oriented and a type that is focused on interpersonal attraction, with only the latter being linked to groupthink (Hogg, 1993). This view was supported in a quantitative study by Mullen et al. (1994): interpersonal attraction contributed to groupthink and poor decision quality, whereas commitment to task tended to ward it off. Researchers also have studied the possible relationship between conformity and groupthink, and particularly when there is a strong "compliance" aspect to conformity. Compliance refers to situations where group members are in agreement publicly but are not in agreement privately; this can occur when members suppress their private doubts about the group decision for reasons such as fear of recrimination if they were to dissent (McCauley, 1989).

Our argument in the current study is that SHV is about collective purpose, goals and tasks that increase the effect of OPM on learning capacity. In this study, SHV is not driven by a desire to be unanimous due to either strong interpersonal attraction or compliance motives that have been associated with groupthink. Thus, it seems logical that SHV would provide the beneficial effect of keeping open-minded dialogs on a collective learning track that supports the group's goals.

Hypothesis 2. Shared vision will strengthen the positive effect of open-mindedness on learning capacity.

Figure 1 shows the hypothesized model, with SHV moderating the effect of OPM on learning capacity.

DATA COLLECTION, SCREENING AND SAMPLE

Empirical data to test the hypothesized relationships were obtained by an electronic survey. Emails soliciting participation were sent to 650 colleges and universities, all of which had participated in the 2009 endowment survey by the National Association of College and University Business Officers (NACUBO) and Commonfund (2009–2010), or in previous annual surveys sponsored solely by NACUBO. Nonmembers of NACUBO may purchase a version of the 2009 study at http://www.nacubo.org/Products/Online_Research_Products/2009_NACUBO_Commonfund_Study_of_Endowments.html. Emails were addressed to financial officers requesting survey participation by a "key informant": someone who had regularly attended investment committee meetings for at least several years and was very familiar with the committee's composition, responsibilities, nature of discussions, and decision-making practices. The solicitation email suggested that either the university financial officer most involved with the endowment or the investment committee chair would be an ideal respondent. The Institutional Review Board at the author's institution approved the Informed Consent and ethical conduct of the study, and all protocols governing the use of human subjects were followed. After the initial email of solicitation in September 2010, three reminders were e-mailed over the subsequent 3–4 weeks. Since the questions in the survey related to a period that ended more than a year earlier (June 30, 2009), we were not concerned with slight differences in survey response dates.

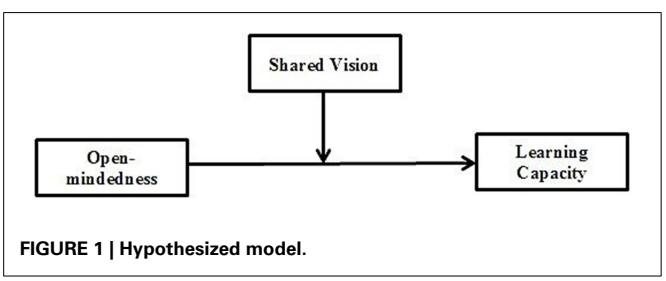

FIGURE 1 | Hypothesized model.

A total of 191 colleges/universities responded to the survey; the usable number was reduced to 168, or 25.8%, after eliminating nine cases due to incomplete surveys, three outliers, and 11 institutions for which certain objective data were not available from NACUBO studies. The three outliers had Cook's Distance values greater than 1.0, the threshold suggested as being problematic by Tabachnick and Fidell (2007, p. 75). To determine if the sample was representative of the 650 colleges with five-year performance data in the 2009 NACUBO–Commonfund survey, we conducted an independent samples t-test of the means of the five-year annualized performance returns. No significant difference was observed between the means ($t = -0.656$; $df = 815$; $p = 0.512$). The mean return from the NACUBO–Commonfund study was 2.70%, $s = 2.55\%$, while the mean of this sample was 2.56%; $s = 2.10\%$.

All but four respondents were finance, foundation, or investment officers at their colleges or universities; two were outsourced chief investment officers and two were investment committee members. On average, respondents had served 11 years in an endowment-related role with the college/university. Respondents were from both public (39%) and private (61%) institutions and the size of endowments spanned all six categories in the annual NACUBO–Commonfund study, from less than $25 million to greater than $1 billion. The average endowment size of survey participants as of fiscal year-end 2009 was $315 million, compared to $306 million in the 2009 NACUBO–Commonfund study.

The investment committees in our sample play important roles in key decisions concerning the management of the endowment portfolio. Approximately two-thirds of respondents indicated that the committee makes final decisions about hiring/firing managers and consultants, as well as policy asset allocations.

MEASUREMENT

The full questionnaire included more than 70 items including those relating to factors for the structural model in this study as well as other data about governance issues, staffing, performance and asset allocation. Certain factors that are not included in this study were used in a previous paper about group factors leading to diversified investment portfolios and superior financial performance (Lord, 2014b); information about some of those other factors is included later in this paper in the section called Other Findings. For our model in the current study, we used the items for the latent factors of OPM, SHV and learning capacity. For control variables we used staff size and committee meeting frequency as they were said to relate to learning and performance in a qualitative study of endowments (Lord, 2014a).

INDEPENDENT AND INTERACTION VARIABLES

The scale items for all latent factors employed a 7-point Likert scale ranging from Very Strongly Disagree to Very Strongly Agree; they are provided in the appendix. Items for the independent variable (OPM) and the interaction moderator (shared vision) were adopted from existing scales (Sinkula et al., 1997; Calantone et al., 2002). An example of the items in the OPM construct was, "The committee was not afraid to reflect critically on investment-related assumptions it made," and a sample item from the SHV construct was, "Our committee was in agreement about the endowment's purpose."

DEPENDENT VARIABLE

The LCAP scale was developed and adapted from research in the field of absorptive capacity: Jaworski and Kohli (1993); Zahra and George (2002); Jansen et al. (2005), and Szulanski (1996). Items included: "The committee collected in-depth information that was relevant to our investment decisions," and "The committee knew how to implement new investment knowledge."

FACTOR ANALYSIS

Sampling adequacy is excellent with a reading of 0.926 for the Kaiser-Meyer-Olkin Measure of Sampling. Bartlett's test of Sphericity is significant at the 0.000 level, indicating that there are correlations in the data set that are appropriate for factor analysis. Exploratory factor analysis (EFA) was conducted simultaneously with all the items for the latent factors using principal axis factoring with Promax rotation. The purpose of EFA was to determine if the observed variables loaded together as expected, were adequately correlated, and met the criteria of reliability and validity. Three latent factors were clearly observed with sufficient item loadings on each and with minimal cross-loadings. The EFA included the eigenvalues of 11.213 for learning capacity, 2.346 for OPM and 1.348 for shared vision. We assessed scale reliability for each latent factor with Cronbach's alpha, a measure of internal consistency or the closeness of the items for each factor. The Cronbach's alpha is high for all three factors: OPM (0.871), SHV (0.904), and LCAP (0.939), indicating high internal consistency.

EFA was followed by confirmatory factor analysis (CFA) for more rigorous testing and validation of the factor structure. We computed composite reliability (CR) scores for each factor, which were above the minimum threshold of 0.700. CR was 0.860 for OPM, 0.919 for shared vision, and 0.939 for learning capacity. Convergent validity was tested by calculating the average variance extracted (AVE); all factors had an AVE above the recommended threshold of 0.500 (Kline, 2011). Next, we tested discriminant validity by reviewing the maximum shared variance (MSV) and the average shared variance (ASV) for each factor and confirmed that they were less than the AVE for each factor. Discriminant validity was also confirmed in that the square root of the AVE was greater than the inter-factor correlations (Fornell and Larcker, 1981). See **Table 1** for details on these measures; square root of the AVE is on the diagonal.

The goodness of fit statistics for the measurement model are shown in **Table 2** along with the "ideal thresholds" outlined by Hu and Bentler (1999). Model fit is acceptable in that all ideal thresholds are met except for root mean square error of approximation (RMSEA) which is extremely close at 0.061; other research (Steiger, 2007) stipulates an upper RMSEA limit of 0.07 for acceptable fit.

Because items for our study's three latent factors were collected via the same instrument at the same time, it was prudent to conduct a common method bias test. We used the common latent factor (CLF) method advocated by MacKenzie and Podsakoff (2012) when no theoretically driven marker variable is collected. We compared the standardized regression weights before and after adding the CLF and found that the differences were all less than 0.200, thus indicating that the model does not suffer from common method bias.

RESULTS

Hypotheses were tested using covariance-based structural equation modeling (SEM) with IBM's AMOS program. Hypothesis 1 is supported in that the standardized regression weight from OPM to LCAP is positive and significant at the 0.001 level. The model with standardized regression weights is shown in **Figure 2**.

Hypothesis 2 is also supported in that SHV strengthens the positive effect of OPM on learning capacity. This can be shown in **Figure 3**. When SHV is high, the slope of the relationship between OPM and LCAP is steeper; and when SHV is low, the line is flatter. The standardized regression weight between the interaction variable (OPM X SHV) and the dependent variable (LCAP) is positive and significant at the 0.001 level. In sum, SHV moderates the effect of OPM on LCAP by strengthening the positive relationship.

Table 2 | Fit statistics for measurement model.

Metric	Observed value	Ideal threshold
CMIN/df	1.622	Between 1 and 3
CFI	0.972	>0.950
RMSEA	0.061	<0.060
PCLOSE	0.137	>0.050
SRMR	0.0465	<0.080

Table 1 | Convergent and discriminant validity and reliability.

	CR	AVE	MSV	ASV	OPM	SHV	LCAP
OPM	0.860	0.605	0.598	0.538	**0.778**		
SHV	0.919	0.741	0.477	0.371	0.691	**0.861**	
LCAP	0.939	0.634	0.598	0.431	0.773	0.514	**0.796**

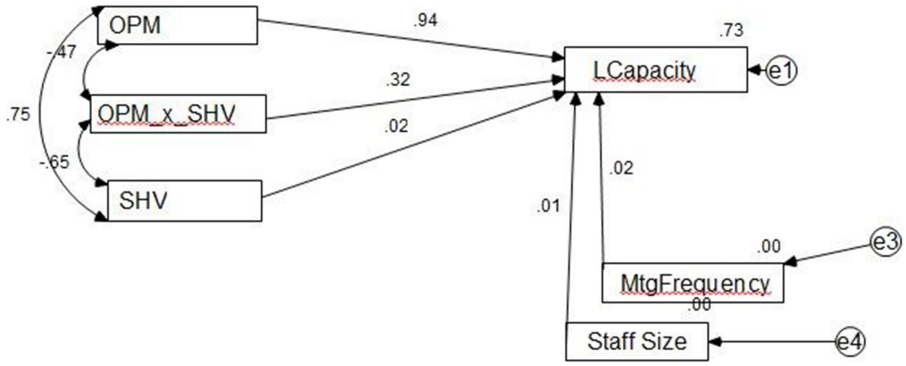

FIGURE 2 | Structural model results.

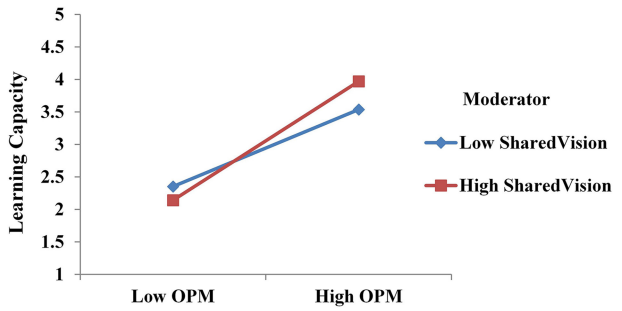

FIGURE 3 | Interaction effect.

Table 4 | Differences in groups based on levels of diverse investment expertise.

	DivExpGRPS	*N*	Mean	Std. deviation	Std. error mean
SHV mean	1.00	88	6.4403	0.59692	0.06363
	2.00	80	5.8844	1.04786	0.11715
OPM mean	1.00	88	5.8665	0.76183	0.08121
	2.00	80	4.8656	1.16308	0.13004
LCap mean	1.00	88	5.7551	0.72600	0.07739
	2.00	80	4.7111	0.98236	0.10983

Table 3 | Fit statistics for structural model.

Metric	Observed value	Ideal threshold
CMIN/df	1.467	Between 1 and 3
CFI	0.993	>0.950
RMSEA	0.053	<0.060
PCLOSE	0.409	>0.050
SRMR	0.043	<0.080

MODEL FIT

Model fit is excellent as shown in **Table 3** along with the "ideal thresholds" outlined by Hu and Bentler (1999). All thresholds are met. R-squared is also excellent at 73.4%; this reveals how much of the variance in the dependent variable is explained by the predictors.

OTHER FINDINGS

Our survey also collected data on the degree of diverse investment expertise among committee members; this refers to the breath of investment expertise across various asset classes (such as domestic equities, international equities, fixed income, real estate, hedge funds and private equity). In the previous study (Lord, 2014b), diverse investment expertise was found to contribute both to knowledge acquisition and to knowledge implementation. This finding was in alignment with theory by Cohen and Levinthal (1989, 1990) that prior experience is a key determinant of absorptive (or learning) capacity. For this paper we employ one item representing diverse investment expertise and divide the respondents into two roughly equal groups. Group 1 consists of the 88 respondents who answered either "very strongly agree" or "strongly agree" to the following statement: "Our committee over the five-year period always included expertise across a broad variety of asset classes." Group 2 consists of 80 respondents who answered either very strongly disagree, strongly disagree, somewhat disagree, neutral, or somewhat agree. In **Table 4** we can see the differences in the mean scores between the two groups for shared vision, OPM and learning capacity.

Using the independent samples *t*-test, there was a significant difference in the mean scores for the two groups across all three factors in the study; significance was at 0.001 for each factor and degrees of freedom were 166. The following *t* values were reported for each variable: shared vision, 4.273; OPM, 6.654; and learning capacity, 7.880. In sum, committees that had more diversified investment expertise across asset classes had higher levels of shared vision, OPM and LCAP than committees with less diversified expertise across asset classes. Therefore, committees wanting to increase their levels of shared vision, OPM and LCAP may want to consider diversifying the types of expertise on the committee. In the current research, the expertise that was examined all related to the broad realm of investments but it included variety of expertise within that realm.

In addition, our survey collected data on the degree of portfolio diversification across different asset classes, as discussed in a previous study (Lord, 2014b). By dividing our sample into two halves—one with the most diversified portfolios and the other with the least diversified portfolios—we found that the halves differ significantly with regards to the three variables in this study. For OPM and learning capacity, differences in the mean responses between more diversified portfolios and less diversified portfolios were significant at the 0.001 level. And for shared vision, the difference between more and less diversified portfolios was significant at the 0.01 level. In sum, more diversified investment portfolios occurred in committee environments of higher shared vision, OPM and learning capacity. In the previous paper (Lord, 2014b), portfolios with greater diversification among asset classes had higher risk-adjusted returns relative to their peers of similar size over a five-year period.

DISCUSSION

The findings in this study provide strong support to learning theorists' belief that OPM (also referred to as critical assessment, authentic inquiry or reflection) is a key determinant of learning capacity. In addition, the study is novel in finding that SHV has a positive and significant effect on the relationship between OPM and learning capacity. It is important to keep in mind that OPM in this study has a greater impact on LCAP than does shared vision. The co-existence of SHV and OPM in the model's configuration produces a greater effect on LCAP than OPM alone. In our view, that's because SHV not only provides direction and motivation for the group's efforts but also because its moderating effect is on an already-strong learning environment. If, as mentioned previously, closed-mindedness were hypothesized to reduce learning capacity, SHV could be expected to augment that effect. Therefore, consideration must be given to the context or environment in which SHV exists. In extreme situations, SHV could be used in studies with horrific results. Consider a model where "Hatred of Jews" contributed to "Deaths at Auschwitz." It would seem logical to assume that "shared vision" among Hitler and his cronies would augment the relationship between "Hatred of Jews" and "Deaths at Auschwitz." Happily, SHV in the current study co-exists with an independent and a dependent variable that are dramatically more positive.

Another important consideration is that SHV should not connote rigidity of the group's beliefs or goals. Especially in an environment with strong OPM and learning capacity, group members could be expected to re-examine their existing beliefs and goals, and to be willing to alter them based on greater understanding of the context in which they operate. OPM would essentially dictate an ongoing assessment of the group's purpose and goals to determine whether they are still justified.

This study also contributes to the literature on group conflict in that previous research focused on the benefits of task conflict to decision quality (Jehn, 1995; Amason, 1996) while this study links task conflict (as represented by OPM) to learning capacity. We believe it is quite likely that OPM (due to its similarities to task conflict) could also be found to have a positive effect on decision quality. One could easily argue that there is a strong correlation between those two outcomes. One might hypothesize, for example, that LCAP is an antecedent to decision quality. Our findings also support research positing that task conflict is very different from relationship (or affective) conflict in that the former is focused on the content of the task while the latter is focused on personal factors (Todorova et al., 2014; Weingart et al., 2014). Relationship or affective conflict can include interpersonal criticism, individual bragging, blaming, and defensiveness—all behaviors that can inhibit group learning; these types of behavior may occur in competitive environments where the "we" is superseded by the "me." In contrast, cognitive or task conflict is oriented toward the substance of the work and helps to reveal additional insights and perspectives that contribute to group learning. In our view, group conflict that remains task oriented could be more accurately and positively framed as "productive disagreement" rather than "task conflict."

In a recent addition to research on task conflict, Todorova et al. (2014) differentiate between *mild* and *intense* task conflict *expression*. Mild task conflict expression occurs when team members debate about differing ideas or opinions, and express different viewpoints about work issues. On the other hand, intense task conflict expression occurs when members criticize each other's viewpoints, clash about objectives/goals, and argue about desired output. While it is possible for both of these expressions of task conflict to remain focused on tasks, only *mild* task conflict expression had a significant, positive effect on information acquisition in their study. *Intense* task conflict expression, on the other hand, had a significant negative effect on information acquisition. The authors suggest that frequent, intense task conflict expressions can interfere with potential informational benefits since the intensity of arguments may limit information sharing and processing. We suggest that the OPM construct in our study is very similar to *mild* task conflict expression, and that it supports the findings of Todorova et al. (2014) that mild task conflict expression contributes significantly to learning. We concur that *intense* task conflict expression starts to resemble relationship conflict, which tends to detract from learning.

As for concerns about conformity, we contend that a group climate of OPM would be negatively related to compliance behaviors that have been associated with groupthink. In addition, SHV represents group members' *genuine* belief that they are working collaboratively toward a common purpose whereas conformity often represents situations where group members publicly "act" as though they are in agreement when, instead, they privately disagree. When beliefs are genuine they are internalized, whereas when expressions of belief are not genuine they may indicate compliance (McCauley, 1989).

While we are open to the view that SHV falls within the spectrum of cohesiveness, we would argue that the very strong influence of OPM in this study severely limits the possibility of the type of intense interpersonal cohesiveness that is associated with groupthink. In our view, groupthink is simply not compatible with either OPM or learning capacity. If group members are open-minded they are not consensus seeking for the sake of seeking consensus. In addition, if they are open-minded they want to seek new external information, to assimilate it and to apply it rather than conform to the stated group view without engaging in learning behaviors. There may be some degree of

interpersonal cohesiveness built through the collective work of developing shared vision, and it could be argued that the cohesiveness around SHV may become so strong that it veers toward a group desire to be unanimous in thoughts and perspectives. In response, we offer a counterargument from this study's results that the concurrent presence of OPM–with its focus on critical assessment–will ward off that occurrence, just as we argue that SHV provides a curb on dialogs that may start out as open-minded but become so emotionally intense that they destroy the conditions and capacity for learning. In a sense, SHV and OPM may serve to regulate each other in healthy ways.

LIMITATIONS AND FUTURE DIRECTIONS

Our survey was conducted of "key informants" of college and university endowments, whereas multiple responses of members from each endowment committee likely would have been more representative. In addition, given that all respondents were associated with university endowments, the study may not be generalizable to other decision-making committees or boards.

While the methodology in this study employs a one-directional causal model, with OPM and the interaction variable (OPM combined with shared vision) leading to learning capacity, we believe it is more appropriate to consider the variables as reciprocal in that relationships can go in both directions. For example, it seems logical to believe that greater LCAP could lead to greater OPM, in that more implementations of learning would provide more instances for critical reflection. In addition, more OPM and the greater understanding associated with it could augment the group's SHV about its purpose and goals. And, as noted previously, we believe that OPM could help the group refine or even adopt a new SHV if it can no longer justify the old one. In short, the variables appear to be contemporaneously intertwined.

Another possible limitation is that we did not test or control for demographic factors such as ethnicity or gender; such inclusion could have enlightened our understanding of generalizability. Also, our construct for LCAP is unidimensional whereas a multi-dimensional construct could have provided more insights regarding how OPM and the interaction variable would influence each of the learning dimensions.

In addition, the study could have provided further insights if it had included a construct for interpersonal cohesiveness; this would have permitted us to contrast the influence of SHV vs. the influence of strong interpersonal cohesiveness on the relationship between OPM and learning capacity. The personality trait called "agreeableness" might be a starting place in considering a measure.

Future research could provide further insights into conditions for greater LCAP by addressing some of the limitations noted above as well as considering factors such as leadership styles and other facets of a learning environment.

CONCLUSION

We believe this study provides new insights about group dynamics that affect collective learning. By employing SHV as a moderator of the effect of OPM on group learning capacity, the study makes an innovative contribution to other research that encompasses both SHV and OPM. Authors Amason and Sapienza (1997) discuss the need for both openness and mutuality in effective team decision-making. They define mutuality as the degree to which team members share goals and responsibilities, and openness as the team's "propensity to tolerate, encourage, and engage in open, frank expression of views." Thus, "mutuality" is related to "shared vision," and "openness" is related to "OPM." Researchers stress the importance of getting the balance right (Jehn, 1995; Amason and Sapienza, 1997). If there is too much mutuality and not enough cognitive conflict (or OPM), group members may become complacent or agree too readily such that LCAP and decision quality suffer. However, if the openness becomes so heated that it resembles *intense* task conflict expression, the effects can include confusion, personal conflict and even closed-mindedness, all of which would detract from learning.

In conclusion, we would argue that there's some truth to Oscar Wilde's quote: "Everything in moderation, including moderation." A proper balance between OPM and SHV appears to offer true benefits such as greater learning capacity. On the other hand, there also may be truth to another quote by Wilde: "Moderation is a fatal thing. Nothing succeeds like excess." With regards to the latter, excess LCAP may contribute to success. No doubt, one must choose his/her excesses carefully.

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 15 November 2014; accepted: 28 January 2015; published online: 27 February 2015.

Citation: Lord M (2015) Group learning capacity: the roles of open-mindedness and shared vision. Front. Psychol. ***6****:150. doi: 10.3389/fpsyg.2015.00150*

This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology.

APPENDIX: CONSTRUCTS, DEFINITIONS AND ITEMS

OPEN-MINDEDNESS (OPM)

The committee's critical assessment of its assumptions, beliefs and prior actions, as well as its openness to new ideas.

1. Committee members routinely judged the quality of the decisions they made.
2. The committee was not afraid to reflect critically on investment-related assumptions it made.
3. Committee members realized that the way we perceive the markets must be continually questioned.
4. Committee members routinely made critical assessments of the investment approach.

SHARED VISION (SHV)

A common mental model for the direction of the organization.

1. Our committee was in agreement about the endowment's purpose.
2. Committee members were committed to the goals for the endowment.
3. There was agreement among committee members about the vision for the endowment.
4. Committee members viewed themselves as partners in our efforts for the endowment.

LEARNING CAPACITY (LCAP)

The committee's ability to acquire, assimilate and implement knowledge successfully.

1. The committee collected in-depth information that was relevant to our investment decisions.
2. The committee quickly recognized shifts in the financial markets.
3. The committee quickly analyzed and interpreted changing market conditions.
4. The committee quickly determined the usefulness of new investment-related knowledge to existing knowledge.
5. The committee was capable of assessing potential investment opportunities based on its existing knowledge.
6. The committee knew how to implement new investment knowledge.
7. The committee had routines in place that it believed are essential for superior long-term performance.
8. The committee had policies in place that it believed are essential for superior long-term performance.
9. The committee knew how to capitalize on its investment knowledge.

frontiers in Psychology

ORIGINAL RESEARCH
published: 10 June 2015
doi: 10.3389/fpsyg.2015.00781

The effect of relationship quality on individual perceptions of social responsibility in the US

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Social responsibility (SR) has been of continuing interest in the U.S. and around the world. Organizations make a wide variety of SR decisions that represent differing viewpoints. While a number of definitions of SR exist, many of these definitions indicate that SR decisions may be viewed as existing of various facets, such as legal/regulatory, financial/economic, ethical, environmental, and voluntary. While drivers of SR have been proposed, there has been limited research at a micro-level on how individuals perceive SR activities by the organizations where they work. Based on a prior qualitative study (Thornton and Byrd, 2013) that found SR decisions are related to several traits and influenced by relationships, a model was proposed and tested in this research. The traits found relevant in the qualitative research were conscientiousness, especially in the sense of being responsible, and self-efficacy. Relationship quality was assessed based on positive and negative emotional attractors as proposed in intentional change theory. Perceptions of individuals in management and non-management showed that relationship quality mediated the effect of conscientiousness and general self-efficacy on the SR. Because there are multiple facets, the author made use of Carroll's (1991) pyramid of SR to identify activities that business owners and managers consider relevant. The findings indicate that conscientiousness is related to specific SR activities in the areas of legal/regulatory, ethical and discretionary dimensions while general self-efficacy is related to financial/economic and legal/regulatory dimensions. The presence of relationship quality enhanced the effects of both conscientiousness and general self-efficacy on the various SR dimensions. This suggests that individuals perceived SR activities along different traits and that enhancing these traits might improve perceptions of SR decisions.

Keywords: social responsibility, relationship quality, general self-efficacy, conscientiousness, individual perceptions

OPEN ACCESS

Edited by:
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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *10 September 2014*
Accepted: *26 May 2015*
Published: *10 June 2015*

Citation:
Thornton JC (2015) The effect of relationship quality on individual perceptions of social responsibility in the US. Front. Psychol. 6:781. doi: 10.3389/fpsyg.2015.00781

Introduction

Social responsibility (SR) has been the subject of numerous studies (Bowen, 1953; Aguinis and Glavas, 2012). Most research has focused on large companies and organizations (Williamson et al., 2006) while research into smaller companies has lagged, especially in the U.S. (Dean et al., 1998). European literature has focused on small and medium enterprises (SMEs) in terms of management (Jenkins, 2006), resources (Aragón-Correa et al., 2008), and drivers and determinants (Darnall et al., 2009). A summary of these dissimilarities are as follows.

Fassin (2008) suggests that small firms do not have the resources or capabilities of performing SR activities at the same level as large firms. While Jenkins (2006) indicates that there is more dependence on the values and traits of the owners and senior managers in terms of SR resulting in different responses compared to large firms. A leading driver for small firms is their employees and families as opposed to external stakeholders (Murillo and Lozano, 2006; Darnall et al., 2009).

While there are many definitions for SR (Dahlsrud, 2008), the author uses a broad definition proposed by Bowen (1953, p. 6) that businesses have an obligation to society to ". . .pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society." The major issue with a broad definition is in determining what an organization might consider the most appropriate policies or objectives that should be addressed. The concept of saliency, developed by Agle et al. (1999) is an attempt to provide a way for organizations to determine which issues should be addressed. They propose that the owners/managers evaluate each issue based on their perception of power, legitimacy, and urgency of specific stakeholders. Based on this, power is seen as the influence of the stakeholder on the organization, legitimacy is based on the perceived relationship quality and urgency is the perception of how the stakeholder sees the issue.

Thornton and Byrd (2013) developed a social empathy model of SR, finding four distinct dimensions of SR that SME owners and managers found important. The dimensions correspond to financial/economic, legal/regulatory, ethical, and discretionary. Internally, the focus is on relationships with employees, suppliers and customers. Externally, the focus is on the community and local/regional issues. This study focuses on the question of how individuals perceive SR actions in the presence of relationship quality. This research also examines whether conscientiousness and general self-efficacy affect SR equally or differentially.

Conceptual Framework

According to the theory of reasoned action, individuals make decisions based on two major factors, the beliefs and attitudes about the behavior and subjective norms (Ajzen and Fishbein, 1980, 2005). Influences of personal beliefs and attitudes of people relate to their personality, their perception of the various alternatives available, and anticipation of the outcome of the action/decision. Subjective norms reflect the opinions of significant others about the action/decision. It includes the desire for organizational members to "fit in" and comply with these norms. Individuals make decisions from among a limited number of alternatives that they know, learn or experience through interactions with others. In terms of beliefs, managers and owners will anticipate congruence of consequences of actions/decisions with these shared norms and beliefs. Both internal and external norms affect these forces (Ajzen and Fishbein, 1980, 2005). While these occur within individuals, the consequences can be for the entire organization and its strategy (Conley and Williams, 2005; Cordano et al., 2009).

In evaluating SR decisions, Campbell (2007) claims that one reason may be to exploit tax or other group incentives. These in turn may aid the organization or justify its entry into specific professional societies. Others argue that involvement in SR may be a way to strategically position the firm (Keim, 1978; Besser and Miller, 2004). Others claim that it has motivational and marketing value in that it attracts employees (Rupp et al., 2006; Rodrigo and Arenas, 2008) or helps the organization in its image in the community (Bowen, 2000, 2002).

Using a grounded theory approach, Thornton and Byrd (2013) found that owners and managers of SMEs used social and personal values as well as experience in making decisions about SR. They found relationships often triggered compassionate and visionary SR responses from the organization toward individuals or groups both internally or externally. The study also found that owners and managers who were aware of key stakeholders and confident were more likely to enact SR. This is supported by prior research into personal values (Nonis and Swift, 2001), management attitudes (Marshall et al., 2005), and personality (Hogan et al., 1996; Moberg, 1999; Giberson et al., 2005) and their effect on SR decisions.

Social Responsibility

According to Carroll (1991), every business performs SR activities that are economic and compliance oriented since these are required to remain viable. Carroll (1991) argues that ethical and philanthropic SR dimensions are voluntary in nature. There is some disagreement with Carroll's original concept of four overlapping dimensions (Schwartz and Carroll, 2003) since the original publication, including that they are poorly defined and that philanthropic responsibilities are potentially not a true form of SR. Schwartz and Carroll (2003) note that the four factor model "remain (s) a leading paradigm of CSR in the social issues in management field." Dahlsrud in an evaluation of 37 definitions of SR found five conceptual dimensions that occurred with frequencies greater than 50% (stakeholder, social, economic, voluntariness, and environmental dimensions). This lends support to a multidimensional conceptualization of SR.

Thornton and Byrd (2013) found, in interviews with business owners and managers that they want to do the right thing for their employees, customers, and society at large. In particular, many organizations want to make a difference or create an impact on society. Interviews with managers and owners conducted by Thornton and Byrd (2013) found that ethical treatment of employees/customers, recycling/cost reduction, legal compliance, and volunteering/philanthropy were the most frequently discussed decisions for SME engagement. These decisions were mapped to Carroll's four dimensions of financial/economic (recycling/cost reduction), legal/regulatory (compliance), ethical (employee/customer treatment), and discretionary (volunteering/philanthropic).

Relationship Quality and SR

For SR decisions and actions to occur, there have to be norms and values supporting and even encouraging them. The norms are expressed through how people act with each other and the nature of their relationships. Boyatzis (2008) and Schwartz and Carroll (2003) describe how sustained, desired change emerges

through a complex system. The emergence of each stage in the process in organizations appears to be invoked by a tipping point in the mood of the people in the organization that Boyatzis (2013) referred to as shifts between a negative and a positive emotional attractor (see other papers in this special topic for more detailed explanation of these states and their dynamics). Thornton and Byrd (2013) found in interviews that owners and managers in about 1/3 of the cases indicated that they began or increased SR after a negative emotional event focused them on a particular issue.

While the ultimate decision may rest with upper management, people in an organization would have to value and perceive the desirability and justification of the decisions and actions in a similar manner. This is where the nature and quality of their relationships become the enabling factors. Each person is pulled into a mood state by the degree to which they believe their relationships as having shared compassion (SC), shared vision (SV), and a shared overall positive mood (OPM). These are the norms in the relationships that may enhance the likelihood of seeing the desirability for SR or not, and possibly which dimension SR is more important to them. The perception that relationships in the organization are shared means that individuals perceive that the image of the ideal or desired future of the organization is common (Boyatzis, 2013). This shared relationship means that a degree of trust and caring for each other in the organization and that a common or shared view of the future is hopeful and bright.

If there is a sense of shared purpose or vision, people feel a common context and direction. They also experience a positive emotional attractor (PEA) mood state, which is both psychological and physiological (Schwartz and Carroll, 2003). It is the this mood state, characterized by positive affect, increasing intensity of it and neurological activation of the networks, that enables a person to be more open to new ideas, people and moral concerns (Boyatzis et al., 2014). Openness to new ideas and moral concerns can invite SR thoughts and values. The author proposes that relationship quality creates an opening for broader thinking about the organization's purpose and role in society and the community, resulting in expansion of the mental models of key stakeholders to be broader than investors do.

Relationship quality has been linked to succession in family businesses (Overbeke, 2010) as well as longer term financial success of family businesses (Neff, 2011). Clayton (2009) reported perceived SV one of the two most significant predictors of championing behavior in mergers and acquisitions, and SV was the strongest predictor of the other mediator, autonomous motivation. A patient's perception of the quality of their relationship to the physician was shown to mediate treatment adherence for Type II Diabetics (Khawaja, 2012). Pittenger et al. (2012) found that the quality of the relationship between managers and information technology teams enhanced the perception of organizational engagement. In addition, Eisenberg and Miller (1987) argue that when positive emotions are stronger than negative emotions, there is an increase in pro-social behavior. According to Brief and Motowidlo (1986), positive affect has been repeatedly shown to have a positive effect on pro-social behavior, such as helping others. They also note that negative affect does not always lead to decreased pro-social behavior.

The nature of the relationships among those in an organization communicates emotions as well as norms and values. Positive relationships appear to invoke a more open rapport that considers not only the needs and interests of others but the broader community due to the nature of the neural and hormonal arousal (Boyatzis et al., 2014). In this manner, SV, SC, and shared OPM might enhance SR decisions and actions. This has been related to more individualistic ways of thinking about the world (Boyatzis et al., 2000).

Individual Traits

Thornton and Byrd (2013) found that individual CEOs/Owners of SMEs are influenced by their own prior success in attempting new and different things and that prior success led to a sense of self-efficacy in many arenas, but in particular when addressing SR. According to Bandura (1982, 1991, 1998), self-efficacy is the sense that a person believes in their own ability to perform an activity successfully and suggests that self-efficacy would predict future activities within the same general realm, such as SR. Penner et al. (1995) found that self-efficacy played a strong role in why individuals act in a pro-social manner. They suggest that this may be due to people believing that their actions are effective in helping others. They also believe that the consequences of their decisions and actions are their own responsibility. The author posits that self-efficacy is strengthened by relationship quality since relationships are often seen as providing legitimacy to SR related issues and activities. Therefore, the following hypotheses were developed for this study:

H1a: Relationship quality will mediate the positive relationship between self-efficacy and SR.
H1b: Relationship quality will mediate the positive relationship between self-efficacy and legal SR.
H1c: Relationship quality will mediate the positive relationship between self-efficacy and ethical SR.
H1d: Relationship quality will mediate the positive relationship between self-efficacy and Philanthropic/Discretionary SR.

According to Roberts et al. (2005) conscientiousness is often viewed as a broad personality domain made up of a variety of somewhat similar concepts that are related including: industriousness, order, self-control, responsibility, traditionalism, and virtue. Conscientiousness is associated with conformity and self-regulation (Peterson and Seligman, 2004) leadership and effectiveness (Barrick et al., 1993) and as an expression of virtue (Aguilera et al., 2007). Conscientiousness has been used as a predictor of organizational citizenship behavior at individual (Organ and Ryan, 1995) and organizational (Taylor et al., 2010) levels. Brief and Motowidlo (1986) note that conscientiousness, in terms of perseverance, diligence and putting forth extra effort, is prosocial organizational behavior. Conscientiousness is also seen as conforming to values of the organization (Podsakoff et al., 2000) which can be thought of as individual initiative. Thornton and Byrd (2013) found evidence that CEOs/managers were concerned

with doing the right thing and making responsible decisions. CEOs/managers worked to promote a sense of responsibility in their employees and an understanding of why it is important to give back. Based on the results of Thornton and Byrd (2013) that people want to do the right thing (be virtuous) be responsible for their actions and persevere, the author hypothesizes that individuals will perceive economic, legal, ethical, and philanthropic/discretionary SR as being related to conscientiousness and that this relationship will be strengthened by relationship quality. Therefore, the following hypotheses were developed for this study:

H2a: Relationship quality will mediate the positive relationship between conscientiousness and SR.
H2b: Relationship quality will mediate the positive relationship between conscientiousness and legal SR.
H2c: Relationship quality will mediate the positive relationship between conscientiousness and ethical SR.
H2d: Relationship quality will mediate the positive relationship between conscientiousness and Philanthropic/Discretionary SR.

Materials and Methods

The use of self-report data is recommended by Abbott and Monsen (1979) as having a significant advantage in obtaining data for SR. Podsakoff and Organ (1986) noted that while self-reports may be considered soft data, they are useful for obtaining data related to past behaviors, personality traits, perceptions, and demographics, although researchers should be aware of potential issues present in self-report data. Podsakoff and Organ (1986) noted that one way of increasing reliability is to make the responses anonymous in nature. Therefore, a self-administered on-line survey was used to obtain perceived behaviors, personality traits and demographics of individuals. The survey was designed to avoid collecting any information that might be used to identify specific organizations or individuals resulting in a significant amount of anonymity for respondents. The study was IRB exempt at the University where I was doing my doctoral program, but all human subjects ethical protocols were followed.

Measures

Relationship Quality

To assess the quality of the relationships the positive and negative emotional attractors (PNEA) survey developed by Boyatzis and Oliver (2008) was used to measure the three dimensions of interest: perceived SV, perceived SC, and perceived shared positive mood (PM). The PNEA scale consists of 20 items measured using a 5-point Likert scale: SV (eight-items), SC (six items), and OPM (six items) and has been shown to have good psychometric properties with Cronbach alphas of 0.94, 0.83, and 0.91, respectively, (Pittenger et al., 2012).

General Self-Efficacy

The general self-efficacy scale used was developed by Chen et al. (2001). It consists of eight items scored using a 5-point Likert scale. This scale is unidimensional according to Chen et al. (2001) and exhibits good internal consistency and reliability ($\alpha = 0.86$–0.90) in prior work.

Conscientiousness

The conscientiousness scale used was obtained from the international personality item pool (Goldberg et al., 2006), based on the work of Saucier (1997). This scale, consists of ten items (five items reverse scored), was evaluated using a 5-point Likert scale. It was found to have good reliability and internal consistency ($\alpha = 0.75$) according to Saucier (1997).

Social Responsibility

Social responsibility behavior was assessed through two separate scales. One scale developed by Maignan and Ferrell (2000) based on Carroll's (1991) four dimensions of SR consists of four scales: economic, legal, ethical, and philanthropic. The other scale was developed by Goll and Rasheed (2004) measures discretionary SR. Each scale used a 5-point Likert scale. According to Maignan and Ferrell (2000), the composite reliability (CR) of the overall four dimensional construct was greater than 0.85 and the Cronbach alpha was 0.94. The discretionary SR scale had good psychometrics, with an internal consistency of 0.74 in the original sample (Goll and Rasheed, 2004).

Potential control variables selected based on a review of literature included: job tenure, company tenure, and individual age. Demographic information collected included: current job (management/non-management), company ownership (public/private), and gender. Respondents were asked to identify if the company was a U.S. or foreign company, and to select their industry (food or beverage).

Sample

The target population for this study includes both publicly and privately owned organizations in the US food and beverage industry. This industry was selected based on the industry focus on customer service and product quality. The data collection was conducted on-line using Qualtrics, Inc. software. The initial data were collected from 308 people. One hundred and ten cases were dropped because the surveys were less than 50% complete. Twenty cases were from outside the US and dropped for consistency of the sample and to control for culture. Eleven cases had more than 500 employees and were dropped to control for size of organization. Ten cases were missing demographic information, and eight cases were from non-food or beverage industries.

The final sample consisted of 149 respondents, with a mean age of 40.4 years (SD 14.3 years), 84 were female, 81 were in management positions, representing 11 public companies, and 138 private companies (including non-profits).

Preparatory Data Analysis

The presence of multivariate non-normality was excessive for use with covariance-based structural equation modeling (SEM), exceeding the level suggested by Byrne (2010) of less than 7. Thus, further analysis of the data was conducted using partial

TABLE 1 | Latent factor correlations ($n = 149$, Cronbach's α on the diagonal).

Variable	Mean	SD	1	2	3	4	5	6	7
Relationship quality	0.035	0.98	**0.76**						
General self-efficacy	4.11	0.82	0.43	**0.89**					
Conscientiousness	3.76	0.92	0.29	0.08	**0.80**				
Discretionary social responsibility (SR)	3.53	1.05	0.43	0.17	0.47	**0.89**			
Ethical SR	3.73	1.03	0.59	0.14	0.41	0.62	**0.83**		
Legal SR	4.00	0.89	0.56	0.31	0.32	0.53	0.55	**0.80**	
Economic SR	3.62	0.98	0.41	0.34	0.34	0.58	0.52	0.58	**0.71**

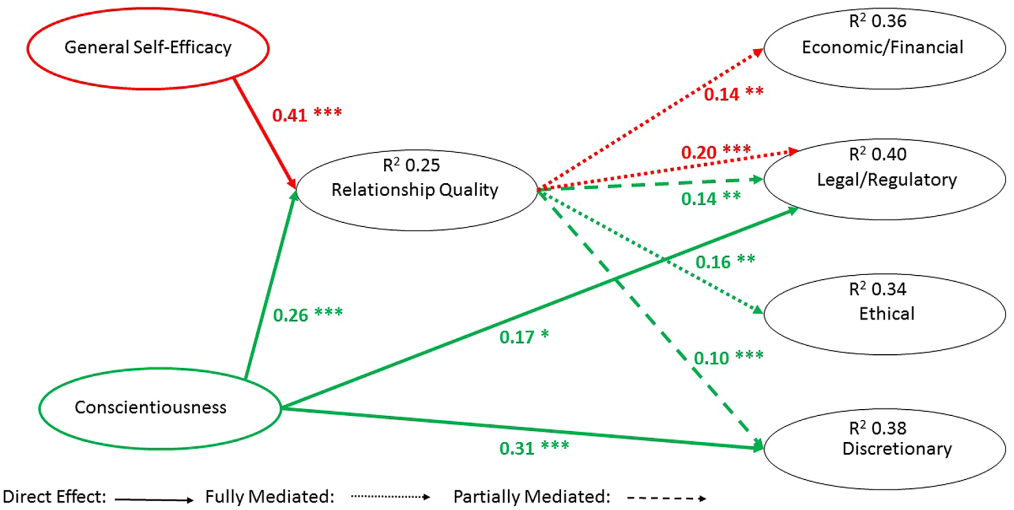

FIGURE 1 | Results of structural equation modeling (SEM). *$p < 0.05$, **$p < 0.01$, and ***$p < 0.001$.

least squares structural equation modeling (PLS-SEM), which is non-parametric and robust (Ringle et al., 2005; Hair et al., 2010).

A confirmatory factor analysis (CFA) of the data was completed in SmartPLS. When used for CFA, PLS provides evidence of convergent and discriminant validity of the measurement model. In particular, the program provides factor loadings for each measurement and *t*-statistics for the significance of the loading to the latent variables. Measurement variables that had loadings that were not significant were dropped from the analysis.

The final measurement model showed good discriminant validity with no evidence of significant cross loading by measures on other factors. Convergent validity is demonstrated by average variance extracted (AVE) values above 0.50 and CR values that are greater than AVE values, while discriminant validity is demonstrated by loadings of individual variables only on the appropriate latent variables. **Table 1** provides the construct correlations, means, SD, and Cronbach alphas. While there is always some bias related to surveys, allowing individuals a choice of completing a survey results in fewer external validity threats.

Common Method Bias/Variance

Because the data were gathered using a single instrument, the presence of common method variance (CMV) may be a potential bias. CMV was assessed using the Lindell and Whitney (2001) marker variable technique. CMV was non-significant at a 0.05 level of significance.

Structural Analysis

The data from this study were analyzed using SmartPLS v2.0 M3 (beta; Ringle et al., 2005). The PLS method provides standardized betas and R^2 values relative to the outer and inner models, where the outer model represents the measurement model and the inner model represents the structural model. Bootstrapping determined the level of statistical significance (*t*-statistics), AVE, CR, Cronbach alpha (α), communality, and redundancy in the model. The reliability, validity, betas, and R^2 values indicate good model fit. The fit assessment was performed using a blindfolding technique as discussed in Tenenhaus et al. (2005). According to Wold (1982), the model is run while a selected construct is removed at specified intervals ranging between 5 and 10, where the interval is not divisible into the sample size. An omission factor of seven was selected for this evaluation. This allowed the creation of cross-validated communalities (Q^2) for each latent variable, where the Q^2 values (greater than zero) indicated that the latent variables were well constructed and results were relevant and predictive (Tenenhaus et al., 2005).

TABLE 2 | Summary of hypotheses tested.

Hypothesis	Direction	Support	Std. β (α)	Mediation	Sobel (α)
H1a: *Relationship quality will mediate the positive relationship between general self-efficacy and economic SR.*	+	Yes	0.14 (0.003)	Full	2.70 (0.003)
H1b: *Relationship quality will mediate the positive relationship between general self-efficacy and legal SR.*	+	Yes	0.20 (<0.001)	Full	3.51 (<0.001)
H1c: *Relationship quality will mediate the positive relationship between general self-efficacy and ethical SR.*	+	No	Not significant		
H1d: *Relationship quality will mediate the positive relationship between general self-efficacy and discretionary SR.*	+	No	Not significant		
H2a: *Relationship quality will mediate the positive relationship between Conscientiousness and economic SR.*	+	No	Not significant		
H2b: *Relationship quality will mediate the positive relationship between Conscientiousness and legal SR.*	+	Yes	0.14 (0.002) 0.17 (0.038)	Partial Direct	2.80 (0.002)
H2c: *Relationship quality will mediate the positive relationship between Conscientiousness and ethical SR.*	+	Yes	0.16 (0.002)	Full	2.93 (0.002)
H2d: *Relationship quality will mediate the positive relationship between Conscientiousness and discretionary SR.*	+	Yes	0.10 (0.003) 0.31 (<0.001)	Partial Direct	2.74 (0.003)

Results

The results of the analysis shown in **Figure 1**, include standardized betas, *p*-values, and type of mediation present.

Figure 1 shows direct and mediated paths that are significant based on the hypotheses tested, with the presence of the mediating variable. **Table 2** provides the results of the hypothesis testing showing hypotheses that are supported, if the support was direct or mediated, and the type of mediation.

Using Cohen's f^2 (Soper, 2012), the effect size of the regression coefficients was determined to be moderate for relationship quality (0.33), and large for economic (0.57), legal (0.52), ethical (0.61), and discretionary (0.66) SR. The data indicate that a significant positive correlation exists between conscientiousness, general self-efficacy, and the various SR dimensions and that Relationship quality strengthens this effect. The mediation effect was evaluated following the method of Baron and Kenny and the effects were assessed using the Sobel test (Baron and Kenny, 1986; Hayes, 2009; Soper, 2010).

Discussion

The purpose of this study was to assess selected individual characteristics and relationship quality in their effect on individual perceptions of SR decisions along four conceptual dimensions. The major contribution of the study suggests that efforts at stimulating increases in SR might focus on fostering self-efficacy and conscientiousness along with creating higher quality relationships in terms of SV, compassion and PM within organizations as opposed to a broad appeal to social conscience. The findings indicate significant positive direct relationships of self-efficacy and conscientiousness with different SR dimensions. These connections are strengthened through the relationship that individuals perceive to exist within their organization.

This study found that conscientiousness, manifested as being responsible, is positively related to legal and discretionary SR both directly and when partially mediated by relationship quality. Conscientiousness is related to ethical SR and fully mediated by relationship quality. The link between conscientiousness and economic SR is not significant. This could be due to the essential pragmatic nature that would drive economic SR with its enhanced beliefs in individual effort. This tendency to see things as individualistic may be at odds with a more socially concerned sense of duty emerging from conscientiousness.

Self-efficacy is positively related to economic and legal SR and fully mediated by relationship quality. Regarding economic SR, this complements the non-significant findings for conscientiousness explained above. The stronger relationship of self-efficacy to economic and legal SR does seem to be a function of more individualistic and utilitarian nature of economic perspectives (Boyatzis et al., 2000). Legal SR is often a more task-oriented perspective, rather than the more philosophical and larger scale perspectives involved in ethical and discretionary SR.

These findings suggest that regardless of individual dispositions people perceive SR, the quality of one's relationships enable multiple aspects of SR. Further research may show how SR can be motivated through emotional and social contagion. The full mediation of ethical SR is indicative of emotional involvement through SV pulling the individuals toward a focus on future opportunities (Goleman et al., 2001; Goleman, 2006). In such settings, relationships with a SV and compassion arouse intrinsic motivation. Howard (2006) noted that the creation of positive emotions serves to pull a person toward the ideal self or their personal vision, shaping the response toward goals and behaviors that correspond to our intrinsic values and behaviors. This deflates, somewhat, the argument that ethical and discretionary SR is only a form of marketing or image self-interest by the organization.

Based on the positive aspects of SV, compassion, and PM, it would appear that various dimensions of SR might be experienced as intrinsic motivators of the SR of organizations. Dutton et al. (2007) argue that compassion is particularly important in organizations, since it increases interconnections between employees leading to greater levels of trust and

enthusiasm to acting in a positive manner. Relationship quality serves to create a linkage between individuals and the organizations resulting in the organization noticing issues, feeling with others and finally taking action on those issues.

Limitations

One limitation of this study is the size and nature of the population surveyed. The relationships to different dimensions of SR discovered may be different in large companies, public sector organizations or non-profits. The use of a single type of data (self-report) is known to create potential for CMV, which was addressed in this study using a marker variable technique (Lindell and Whitney, 2001).

Implications for Practice and Research

Further research is needed to test the linkage between individuals and organizational SR along specific dimensions, especially in terms of the effect of positive and negative emotions. In addition, subsequent research should investigate other personality dispositions, like agreeableness, to determine if they have an impact of different facets of SR, or even traits like general mental ability. Given the results of this study, a follow-up study should examine the differential effects of SV, SC, and shared PM. It would also be desirable to study composite views of people in an organization on their perceptions of each SR dimension and relate this to individual traits and perceptions.

Conclusion

The appeal to stimulate more SR along each of the four dimensions in organizations would be enhanced if people worked on the degree of SV and compassion in their relationships. Whether a person acts with SR is often attributed to some individual characteristic, trait, or value. This study examined how the nature of relationships may alter perceptions of corporate responses leading to different dimensions of SR activities. In this sense, the development of better relationships in terms of SV, compassion, and PM may help promote various forms of SR. As discussed by (Kanov et al., 2004), the sense of SC serves to link the individual responses within the organization to the overall response of the organization to the feelings and needs of others. This has a strong effect on the sense of responsibility (conscientiousness) that people have when they make decisions and may lead to more caring organizations.

Acknowledgments

I am indebted to the two reviewers, whose suggestions helped to strengthen this paper. I appreciate the comments of Dr. Scott Taylor, one of the co-editors that also helped to focus the revised paper. I would also like to thank my colleagues, Michael Luthy, Ph.D. and J. T. Byrd, Ph.D. for their review and comments on the paper.

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in PSYCHOLOGY

ORIGINAL RESEARCH ARTICLE
published: 08 December 2014
doi: 10.3389/fpsyg.2014.01400

Personal vision: enhancing work engagement and the retention of women in the engineering profession

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This study examines how personal vision enhances work engagement and the retention of women in the engineering profession. Using a mixed method approach to understand the factors related to the retention of women in the engineering profession, we first interviewed women who persisted and women who opted out of the profession (Buse and Bilimoria, 2014). In these rich stories, we found that women who persisted had a personal vision that included their profession, and that this personal vision enabled them to overcome the bias, barriers and discrimination in the engineering workplace. To validate this finding on a larger population, we developed a scale to measure one's personal vision conceptualized as the ideal self (Boyatzis and Akrivou, 2006). The measure was tested in a pilot study and then used in a study of 495 women with engineering degrees. The findings validate that the ideal self is comprised of self-efficacy, hope, optimism and core identity. For these women, the ideal self directly impacts work engagement and work engagement directly impacts career commitment to engineering. The findings add to extant theory related to the role of personal vision and intentional change theory. From a practical perspective, these findings will aid efforts to retain women in engineering and other STEM professions.

Keywords: personal vision, ideal self, engagement, self-efficacy, women engineers

INTRODUCTION

> *"We've always been reluctant to publish numbers about the diversity of our workforce at Google. We now realize we were wrong, and that it's time to be candid about the issues. Put simply, Google is not where we want to be when it comes to diversity, and it's hard to address these kinds of challenges if you're not prepared to discuss them openly, and with the facts. So, here are our numbers…"*

With this statement posted on its website in May 2014, Google admitted that its international workforce was 70% men and in the US, 61% white (Google, 2014). Beyond that, Google committed to increasing diversity and relevant to our study, discussed its commitment to retaining and advancing women. This announcement set off an avalanche in the technology world with at least 13 other technology corporations voluntarily sharing their diversity statistics and also committing to create a more inclusive workplace (Mangalindan, 2014).

At a time when the US labor force is 47% women and 52% of managers and professionals are women (Bureau of Labor Statistics, 2014a), we seek to understand those factors that enable women to achieve in technology-driven organizations where women continue to be under-represented. We focus on women in engineering because it is the profession where women are most under-represented—only 10% in 2013, according to the US Bureau of Labor Statistics.

Researchers describe the under-representation of women in science, technology, engineering and math (STEM) as complex and the result of the interplay between individual, institutional, social and cultural factors (National Research Council, 2007). However, the few studies available on professional STEM women working in industry focus on why women leave (Frehill, 2008; Hewlett et al., 2008; Singh et al., 2013).

Using a mixed method approach, this study seeks to understand how and when women persist in STEM careers. We begin by using narratives from a qualitative study on women who persisted and women who left the engineering profession (Buse and Bilimoria, 2014). We use these narratives to frame a model built on theories of the ideal self as a personal vision (Boyatzis and Akrivou, 2006), engagement (Kahn, 1990), and the kaleidoscope career (Mainiero and Sullivan, 2005). We empirically test this model with a sample of 495 women with engineering degrees. We argue that understanding those women who do persist will not only aid in developing practical interventions to support the retention of women in engineering and other STEM professions, but also adds to theory development related to personal visioning, engagement, and women's careers.

THEORY, HYPOTHESES, AND METHODS

THEORY DEVELOPMENT AND HYPOTHESES

More than 80% of all engineers are employed in business and industry (National Science Foundation, 2011). Many of the firms that employ women as engineers also employ women in other professions where women are well represented including accountants and auditors (60%), human resources (70%), public relations managers (60%) and purchasing agents (67%). And while

women leave these professions (Hewlett and Luce, 2005), the rate of exodus is higher in the STEM professions (Hewlett et al., 2008). The available studies on women engineers describe a difficult work environment (Jorgenson, 2002; Miller, 2004; Gill et al., 2008; Powers et al., 2009; Watts, 2009). Bias, barriers and discrimination confront women in the workplace, resulting in a decision to leave the engineering profession (Frehill, 2008; Hewlett et al., 2008; Singh et al., 2013).

Despite the well documented difficulties in the workplace, some women do persist in these technology-driven and male-dominated workplaces. Because of the lack of theoretical frameworks related to career persistence, especially for women professionals, this work began with a qualitative research study including semi-structured interviews with women in the engineering profession: 21 women who persisted and 10 who opted out (see Buse et al., 2013). From a detailed analysis of the narratives, we provide evidence to develop the hypothesized model (**Figure 1**) that explains persistence for women in the engineering profession, taking as given the generally difficult work environments faced by women engineers as described above and extensively in the literature.

THE IDEAL SELF AS PERSONAL VISION

In this section, we begin by sharing examples of the narratives of the women engineers discussing their career decisions. We next discuss the intentional change theory, or ICT (Boyatzis, 2008), and show how these narratives can be explained using the ICT and in particular, how one's personal vision conceptualized as the ideal self-impacts career decisions for women engineers. This section ends with three hypotheses on factors impacting the ideal self, and how the ideal self-impacts career persistence.

A chemical engineer with more than 17 years' experience left the profession and went back to school to be certified as a math teacher. When we interviewed her, she was teaching 6th grade math in the school her three sons attended. Here, she discusses how her ideal self did not include her profession as an engineer. The sudden passing of her father caused deep reflection, motivating her to leave the engineering profession.

> *There are certain things that kind of trigger (change) in life; I think you reflect upon really doing what you should be doing, and my dad passed away suddenly in May of 2005. What am I doing with my kids? . . . what do I want to be, and I really didn't feel like I was giving back enough because so much of your time is spent at work and not really concerned in serving the community. . . . I realized I wasn't happy anymore.*

Here, a former engineer, now a college business professor, describes how her work as an engineer did not align with her personal vison of leaving a legacy and impacting others. She describes a stark tipping point allowing her to realize this lack of alignment and motivating her to leave engineering.

> *And he holds it up, and there's a list of maybe 15 names, each one has a date next to it that goes back at least one name per year on this list—maybe two names in one year or something. And I said, "What's this a list of?" And he goes, "This is the list of the suicides in this company." . . . I wanted to leave a legacy, and all I saw was stock prices going up and down, but because I was so detached from how what I did was affecting the world in any way, it just—that's why my soul hurt. (Now) I've got this ability to make an impact (as a college business professor).*

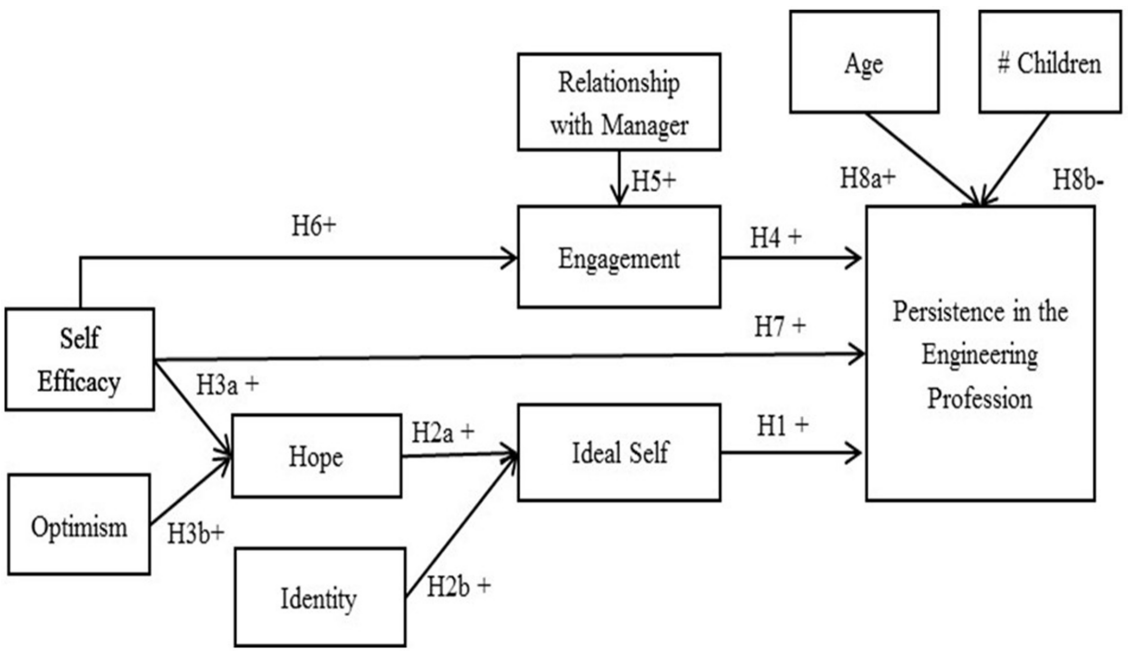

FIGURE 1 | Hypothesized model of factors impacting women's persistence in engineering.

And, a self-described stay-at-home mom with 11 years in engineering describes how her personal vision did not include her engineering career once she became a mother. The birth of her first child was the tipping point for leaving engineering.

> *It (engineering) really wasn't what I wanted to do. It was just something to get out of mom's house…I always knew I would leave. Because my mom worked, so that was something I'd always planned to stay home with my child.*

Intentional change theory (ICT), as theorized by Boyatzis (2008), includes the ideal self and the real self as two discoveries important to an individual's efforts to intentionally develop skills and to sustain any desired change. First, conceptualized as the basis for internal, emotional comparisons (Kolb and Boyatzis, 1970; Higgins, 1987), the ideal self can be described as one's personal vision, specifically about who the person wants to be and what she would like to accomplish in life. The real self is who the person is at the present time. When one recognizes discrepancies between the ideal self and the real self, a motivational force for change occurs. Often, these discrepancies are described as tipping points (Gladwell, 2000).

In our interviews with women who opted out of the engineering profession, we found support for this theory of change. Conversely, when the ideal self and the real self are in-sync, there is motivation for maintaining a current state. Those women who persisted in engineering, described themselves in engineering terms, as expressed by an enginering consultant with 28 years in the profession:

> *I'm a hopeless geek. I can really—I love solving problems. I love working with users. My husband tells me that it's like I am so analytical about everything that he just wants to run from the room screaming sometimes. I love to solve problems; I actually have the toolset now, where the technology generally is easy for me. And I'm actually really, really good with people and facilitating communications among disparate groups.*

And, an engineering manager with 28 years of experience discussed her work:

> *I really like what I do. There was just something about these industrial gas plants I just really like and enjoy. I don't know how to explain it. I just have a passion for the plants.*

According to the intentional change theory (ICT), the person engages in behavior in pursuit of their desired end state or the ideal self (Boyatzis, 2008). Efforts and, at times, sacrifices are made in the short term to accomplish more important longer-term goals as reflected in the ideal self (Boyatzis and Akrivou, 2006). In this study, it is proposed that the ability to maintain a current state or career requires an investment of energy toward a personal vision of oneself in that profession. This aspect of the ideal self has the potential to explain why women persist in a male-dominated profession, especially in light of the literature describing the extreme difficulties women experience (Frehill, 2008; Hewlett et al., 2008; Fouad and Singh, 2011). Thus, we hypothesize that:

Hypothesis 1: The ideal self positively impacts persistence in the engineering profession.

The ideal self is considered to have three major components: an image of a desired future, hope, and one's core identity (Boyatzis, 2008). This study focuses on hope and identity. Hope is defined as the feeling that something desirable is likely to happen and is proposed by Boyatzis as constituted by self-efficacy and optimism. In other words, hope is the perceived capability to derive pathways to desired goals and motivate oneself to those pathways (Snyder et al., 1996). As a result, we hypothesize:

Hypothesis 2a: Hope positively impacts the ideal self.

The concept of the core identity comes from strength-based approaches and is the awareness of one's strengths. Identity is defined as an unconscious set of enduring individual characteristics and includes one's strengths, context and resources. Identity is relatively stable and is a compilation of a person's enduring dispositions, involving a set of individual characteristics. Core identity is theorized as the third component of the ideal self and is defined as one's set of enduring individual characteristics (Boyatzis and Akrivou, 2006). The core identity is theorized to be relatively stable over time and includes one's roles, underlying the historical and continuing aspects of a person's ideal self. As a result, we hypothesize:

Hypothesis 2b: Identity positively impacts the ideal self.

Higher levels of individual resourcefulness lead to congruence between goals and achievements (Bakker and Demerouti, 2008). Self-efficacy and optimism have been acknowledged as some of these personal resources. Hope relates to goals and the identification of strategies to achieve these goals (Gallagher and Lopez, 2009). The ideal self is hypothesized as being emotionally powered by hope, where hope is caused by one's level of self-efficacy and optimism (Boyatzis and Akrivou, 2006). Thus, we hypothesize that:

Hypothesis 3a: Self-efficacy positively impacts hope.
Hypothesis 3b: Optimism positively impacts hope.

ENGAGEMENT

The question, "Why have you stayed in your engineering career?," provided detailed descriptions of meaningful and challenging work that resulted in making the women engineers feel valuable because of the unique skills they brought to the workplace. Many provided examples of situations where they influenced a course of events and where their interactions with others provided a sense of accomplishment. These accounts fit Kahn's theory of work engagement (Kahn, 1990) and we build three hypotheses related to engagement, as shown in in **Figure 1**.

An engineering consultant who worked 28 years in the engineering profession told us she persisted because she found meaning and purpose in her work developing technology for military applications related to communications and intelligence:

I can keep doing this. I can put up with all the crap. And then it sort of hit me that everybody is somebody's brother or father or son or cousin or whatever. And every single one of these guys and gals is there. Whatever it is that I can help bring to the fight to make sure that they're coming home to their three little toddlers or whatever.

A process engineer with 16 years of engineering experience discussed feeling valuable and the challenges of her work as a process engineer in a manufacturing facility:

I feel needed. I feel like if I didn't show up to work—maybe not one day; maybe not a week, but if I was gone for a month, I would be missed. There are a lot of things that I can do, that I'm the only person who can do those things. The controls, I did the programming (to control a new machine) all on my own, I was really proud of that. . . I stay in engineering because I just really love it. I love it! I love the challenge. I love coming in and having different things to do every single day. I love the people that I work with; I have a great support team.

An RandD manager with 18 years of experience discussed the challenges, the novelty, and fun in engineering:

I enjoy what I do. I enjoy the challenges. I enjoy the people. I like the fact I can travel and see something new. . . So I couldn't imagine doing something else. I can't imagine anything else that would be this much fun on a regular basis.

A manufacturing manager with 25 years of experience discussed a temporary leave from her engineering career when she moved to France with her two children and her husband as he worked there on a 2-year assignment. Here, she describes why she returned to the engineering profession:

I really enjoy technical things. With two kids in college I need to be working and I want to be working. One of the things I really felt when I wasn't working after France was I felt like there was a part of me that was dying. I like technical challenges. I like thinking about things. I like working in spreadsheets and dealing with technical issues. That part of me wasn't being tapped into at all, and I really missed it. I did enjoy some of the other things I was doing, but I think my bigger passion is for technical things.

A process engineer, who was about to retire after a 30 year career in engineering, on why she stayed:

Well, I think because the good times have definitely outweighed the bad ones, and it really is a very good group of people. I think having had the opportunity to do a number of different things keeps you from getting bored with it because just having the growth, being able to come in every day, and I'd learn something every day. Sometimes I'd learn a lot; sometimes I'd learn a little; sometimes I'd learn things I really didn't want to know. But at the end of the day, there's something new that you've taken back.

Kahn (1990), credited with first defining the term engagement in a work role, theorized that work could provide a sense of meaning when employees felt worthwhile, useful and valuable. The meaningfulness is influenced by tasks, roles and work interactions. Tasks within a role that provide challenges or autonomy and have clear goals, influence engagement as do roles that carry status or influence. Work interactions that provide employees respect and a sense of worthwhileness promote engagement.

The notion of engagement in a work role has become popular in practice as engagement has been related to organizational benefits. Within the academic literature, the discussion of engagement is relatively new and is somewhat confusing as researchers provide various definitions and precede engagement with one of three modifiers: employee, job, or work. For example, Saks (2006, p. 603) uses the term employee engagement and defines it as a "distinct and unique construct that consists of cognitive, emotional and behavioral components that are associated with individual role performance." Rich et al. (2010) use a similar definition, but use the term job engagement. Schaufeli and Bakker (2004) discuss engagement as the opposite of job burnout where engagement is characterized by vigor, dedication and absorption. High levels of energy, as well as a willingness to invest effort in one's work and to persist in the face of difficulties, characterize vigor. Where dedication is described as a sense of significance and challenge, absorption is characterized by being fully and happily focused in one's work. Sonnentag et al. (2012) prefer work engagement and define it as a positive and fulfilling work-related state of mind that is characterized by vigor, dedication and absorption. Others simply use the term "engagement" (Maslach and Leiter, 2008), as will be used here. No matter which term is used, engagement is portrayed as positive and fulfilling as related to a work role.

As Kahn (1990) described, engagement is an investment of cognitive, emotional and physical energies in role performance. It is a key mechanism that explains relationships between individual factors and benefits to organizations (Rich et al., 2010). Engagement is explained as a motivational concept and emphasizes relationships with behavioral consequences. For example, previous research shows that work engagement is positively related to organizational commitment and negatively related to intention to quit (Saks, 2006).

The women interviewed in our qualitative study discussed facing adversity and how it made them question their career choices. However, they prevailed in the profession because they found meaning and challenges, felt needed and valued, and were able to use their unique skills and capabilities. As Kahn (1990) had theorized, work provided them a sense of meaning and a sense of being worthwhile, useful and valuable. Meaningfulness is influenced by tasks, roles and work interactions. Tasks within a role that provide challenges or autonomy and have clear goals influence engagement, as do roles that carry status or influence. Work interactions that provide employees respect and a sense of worthwhileness promote engagement.

Women who persist describe finding meaning in their engineering careers, being continuously challenged, and having positive interactions with others, resulting in feelings of value and worthwhileness. Thus, engagement is hypothesized to be the process by which women persist in an engineering career despite adversity.

Hypothesis 4: Engagement positively impacts a woman's persistence in the engineering profession.

In the interviews with women engineers who persisted, we found no evidence that one's manager, supervisor or boss directly impacted their choice to persist in engineering. However, there was evidence that a difficult manager may push women into leaving the engineering profession. For example, a 35 year old woman who previously worked 12 years in engineering, discussed the reasons she left after having her first child:

> *Her parting words (on taking maternity leave) to me were—don't do anything without talking to me first, which told me she'd find me something else, part time. Actually, that's how I read it. So I went in to maternity leave, fully thinking I was going to go back doing something part time. Then, I went in about two months into maternity leave, and she's like nope, you have to come back full time or nothing, which was really frustrating because (Company X) preaches all over the Internet about diversity…Then, we (my husband and I) decided that I would stay home, and it was actually really hard because I wasn't mentally prepared. I think I had some post-partum depression, and it was winter. It's just a major life change, and I kept thinking that that woman—that mean woman at Company X—is going to decide my future—and she did. She had decided my future by not letting me come back.*

And for a college business professor who previously worked 11 years in engineering, it seemed to be all about her bosses' impact on her:

> *Well, I had some good bosses, but some very bad bosses. I think that it's so important to your career…is who you're working for. I think I had very little confidence, and I kind of waited for the other shoe to drop that somebody was going to find out that I really didn't know what was going on, and so if I had a boss who wasn't confident in me, who treated me with no respect, then I got into that completely…I needed to have somebody tell me I was good before I believed it.*

In addition to the data we collected via interviews above, a number of recent empirical studies have focused on the development of factors impacting engagement, concluding that the relationship with one's supervisor is directly related to one's level of engagement (Bakker and Bal, 2010; Rich et al., 2010). Coaching from one's supervisor and performance feedback impacts engagement (Schaufeli and Bakker, 2004) as does perceived supervisor support (Saks, 2006). Thus, we hypothesize that:

Hypothesis 5: A positive relationship with one's supervisor positively impacts work engagement.

In response to our question on why she stayed in the engineering profession, a technical manager with 30 years of experience in engineering describes how the ongoing assignments created a synergistic effect between her belief in herself and persisting in the profession:

> *They kept giving me assignments that I thought were challenging because it's not the industry (as the reason I stayed), I'm not an auto lover. I appreciate the vehicles and whatnot, the technology, but some people are car buffs and that's why they stay. I'm not a car buff, but they were giving me assignments that were brand new. You know, Greenfield, nobody had done before. This is a whole new job, this is a whole new thing that we need to now deal with…And I think that if I believe I can do something then I can do it. And just because somebody tries to stop me, it's usually not enough.*

Because engaged employees experience positive feelings, there is a natural association with personal resources including self-efficacy (Bakker and Demerouti, 2008), where self-efficacy is the belief in one's ability to succeed (Bandura, 1977). Previous research has shown that self-efficacy is an antecedent to engagement (Christian and Slaughter, 2007). Thus, we hypothesize:

Hypothesis 6: Self-efficacy positively impacts work engagement.

In the interviews, it became clear that self-efficacy played a key role in persistence.

A technical manager with 30 years of experience, said the following on why she stayed:

> *It has to be something built into my personality or I'm just so stubborn that I refuse to leave when they want me to leave. My father would tell you that I'm really stubborn and so I have to put that one on the list. I think the other thing is that…I happen to believe in myself even when no one else does.*

Another technical manager with 24 years of experience discusses herself and why she stayed:

> *So I took an interview and they sent me for psychological screenings…One of the things the guy told me was that my personality is such that I have confidence, I'm willing to go out on a limb and do whatever…I stayed because I think it's a personality thing. My nature is to make the best of what I've got. If I have options to steer my way towards one thing or another towards something I enjoy more, as compared to just quitting and leaving and going someplace else. Also in my personality is a lack of willingness to feel like I failed at something. In a way, quitting makes me feel like I've failed. I'd much rather try to actually influence something than to just quit it.*

In our qualitative study, we found many examples of women expressing self-efficacy related to finding new work opportunities, dealing with work issues and managing the work/life interface. In contrast, women who opted out of engineering careers told stories where uncertainty, confusion, self-doubt or low confidence predominated. Thus, we hypothesize:

Hypothesis 7: Self-efficacy positively impacts persistence.

Findings from previous studies show that women leave professional careers at a higher rate than men and that four in 10 highly qualified women leave work voluntarily at some point in their careers, influenced by both push and pull factors (Hewlett and Luce, 2005). Push factors include the lack of job satisfaction, lack of opportunity and excessive demands, while pull factors include family pressures and personal health. Among highly qualified women off-ramped from their careers, Hewlett and Luce (2005) found 93% intending to return. Mainiero and Sullivan (2005) use the term "kaleidoscope career" to distinguish women's varied career patterns from men's more linear patterns. Women are more

apt to construct careers that suit their own objectives, needs, and life criteria and more often make choices influenced by relationships and self-fulfillment (O'Neill and Bilimoria, 2005). These models are of particular relevance to both work and non-work realms and salient to this study addressing women's retention in the engineering profession as they explain career interruptions, gaps, topping out, and opting out.

The kaleidoscope career model discusses career decisions based on three parameters: authenticity, balance and challenge. As a kaleidoscope has three mirrors that create an infinite number of patterns, the kaleidoscope career model has three unique parameters reflecting an infinite number of career patterns of a woman's career (Mainiero and Sullivan, 2005). The kaleidoscope career model discusses how women's career decisions include interconnected aspects such as children, spouses, aging parents, friends, and work colleagues. Transitions occur throughout a woman's life and these transitions (such as having children) may impact career decisions and persistence in the engineering profession. Based on these insights, we hypothesize that:

Hypothesis 8a: Age positively impacts persistence for woman in the engineering profession.
Hypothesis 8b: Number of children negatively impacts persistence for woman in the engineering profession.

METHOD

IDEAL SELF PILOT STUDY

The ideal self has been theorized as one's personal vision (Boyatzis and Akrivou, 2006) and we sought to empirically validate the theory with a measure for the ideal self. The development of the measure used the research paradigm as suggested by Churchill (1979). The initial instrument contained 32 items built on theory that were measured on a 7-point Likert scale. Doctoral students at a Midwestern university completed the initial instrument and participated in a focus group to provide feedback. Twenty items were selected for appropriateness, uniqueness, and ability to convey the concept of the ideal self (Boyatzis et al., 2010). Next, a pilot study was undertaken to assess the validity and reliability of the measure. The survey instrument included the 20 items along with demographic questions. Respondents were asked to "think about your ideal life in 10–15 years" and how it might include, "your legacy," and "sense of purpose." The survey was distributed to members of four non-profit organizations familiar with the first author ($n = 96$) and to business students at a Midwestern university ($n = 16$), resulting in 112 completed instruments.

Analysis of the pilot data yielded a scale with five theorized factors as shown in **Table 1** and detailed in the Supplementary Material. The ideal self-hope factor includes eight items relating to one's feelings of possibilities; the ideal self-sense of purpose scale includes four items assessing relative priorities related to one's legacy or calling; the ideal self-holistic vision assesses family and relationships using four items; the ideal self-deeper meaning with two items relates to one's values; and the ideal self-fun includes two items relating to the importance of fun in leisure.

PARTICIPANTS AND PROCEDURES

A survey was developed, based on the hypothesized model in **Figure 1**, including the 5-factor ideal self-scale (Boyatzis et al., 2010). Data was collected from professionals with engineering degrees by sending an email with the survey link to approximately 20 executives, managers, and engineers who were past work colleagues, schoolmates and/or friends of the first author. The email asked them to take the survey and to forward the survey to anyone they knew who had an engineering degree. Included in the original emails, were executives in four Fortune 500 companies that employ a considerable number of engineers. Following receipt of the email, several professional groups sent the link to their members and/or included the survey link in e-newsletters. These included several sections of the Society of Women Engineers, Phi Sigma Rho (an engineering sorority), and the IEEE (Institute of Electrical and Electronic Engineers) Women in Engineering Network, resulting in 495 surveys used in the analysis.

MEASURES

Persistence in an engineering career was measured several ways within the survey. First, the respondents were asked if they had ever chosen to leave an engineering career, with responses simply "yes" or "no." Next, we asked about years employed as an engineer and what current position was held with choices of engineering, engineering manager, higher level position normally afforded one based on a successful engineering career, and other options related to leaving the engineering profession including returned to school full time, stay-at-home mother etc. For use within the structural equation model (SEM), the construct career commitment (Blau, 1999) was adapted for the engineering profession as a representation for career persistence. As described by Blau, a profession is a type of occupation where characteristics such as expertise, autonomy and regulation of its member transcend employing organizations which describes engineering. Career commitment was originally developed by Blau (1985) as a differentiating construct from organizational commitment and

Table 1 | Pilot study measurement model and correlations for the ideal self as a 5-factor scale[a].

	Measure	CR	AVE	1	2	3	4	5
1	Ideal self-hope	0.897	0.526	**0.832**				
2	Ideal self-sense of purpose	0.861	0.608	0.445	**0.758**			
3	Ideal self-holistic vision	0.847	0.581	0.270	0.527	**0.758**		
4	Ideal self-deeper meaning	0.822	0.698	0.458	0.362	0.371	**0.654**	
5	Ideal self-fun	0.852	0.743	0.369	0.561	0.561	0.351	**0.565**

[a] *n = 112. Reliability coefficients are reported along the diagonal.*

for this reason, suits the current study on women persisting in the engineering profession, not necessarily in a specific job or a specific organization. Reliabilities for the scale have been reported at 0.82 and greater and have been examined for age, tenure in career, and marital status (Blau, 1988, 1999; Goulet and Singh, 2002; Duffy et al., 2011). The four items used in the present study were: (a) "I definitely want a career for myself in engineering or technical management"; (b) "If I could do it all over again, I would choose to work in engineering; (c) "I would recommend a career in engineering to others"; (d) "I am not disappointed that I ever entered the engineering profession." Items were scored on a 5-point scale 1 = I disagree a lot to 5 = I agree a lot.

Each of the five ideal self-scales were included in the survey, using a 7-point scale where 1 = Strongly Disagree and 7 = Strongly Agree. These are detailed in the Supplementary Material. For example, the ideal self-hope scale included eight items such as: "I feel inspired by my vision of the future"; and "My vision reflects many possibilities."

For engagement, the Utrecht Work Engagement Scale (UWES) work and well-being survey (Schaufeli et al., 2006) was adapted using 15 items such as (a) "At my work, I feel bursting with energy"; (b) "I find the work that I do full of meaning and purpose"; (c) "Time flies when I am working"; (d) "To me, my job is challenging" and (e) "I get carried away when I am working." Items were scored on a 7 point basis with 1 = Never, 2 = Almost Never (A few times a year or less), 3 = rarely (Once a month or less), 4 = Sometimes (a few times a month), 5 = Often (Once a week), 6 = Very Often (A few times a week), and 7 = Always (everyday).

The Schwarzer and Jerusalem (1995) general self-efficacy scale was used as it is designed to assess self beliefs related to coping with difficult demands in life. For women in the engineering profession, these difficult demands include, but are not limited to difficult work situations and work-life issues (Frehill, 2008; Hewlett et al., 2008; Fouad and Singh, 2011; Buse et al., 2013). The scale was developed to explicitly refer to personal agency and has been used in thousands of studies showing discriminant and convergent validity. Specific items used included: (a) "I am confident that I could deal efficiently with unexpected events"; (b) "Thanks to my resourcefulness, I know how to handle unforeseen situations"; (c) "If I am in trouble, I can usually think of a solution"; (d) "I can usually handle whatever comes my way." Items were scored on a 4-point basis with 1 = Not at all True, 2 = Hardly True, 3 = Moderately True and 4 = Exactly True.

For optimism, we used the LOT-R or life orientation test revised (Scheier et al., 1994) adapted to five items: (a) "If something can go right for me, it will"; (b) "I'm always optimistic about my future"; (c) "I usually expect things to go my way"; (d) "I usually count on good things happening to me"; and (e) "Overall, I expect more good things to happen to me than bad." Scoring for the LOT-R was on a 5-Point scaled with 1 = I agree a lot to 5 = I disagree a lot.

The hope state scale developed by Snyder et al. (1996), was used in this study. The six-item scale included (a) "If I should find myself in a jam, I could think of many ways to get out of it"; (b) "At the present time, I am energetically pursuing my goals"; (c) "If I should find myself in a jam, I could think of many ways to get out of it"; (d) "At the present time, I am energetically pursuing my goals"; (e) "There are lots of ways around any problem that I am facing now"; (f) "Right now I see myself as being pretty successful"; (g) "I can think of many ways to reach my current goals"; and (h) "At this time, I am meeting the goals that I have set for myself." An 8-point scale was used for scoring where 1 = Definitely False 2 = Mostly False 3 = Somewhat False 4 = Slightly False 5 = Slightly True 6 = Somewhat True 7 = Mostly True, and 8 = Definitely True.

As defined by Cheek et al. (2002), core identity is an unconscious set of enduring individual characteristics. Identity was measured using three items: (a) "Knowing that I continue to be essentially the same inside even though life changes"; (b) "My self-knowledge, my ideas about what kind of person I really am"; and (c) "My personal self-evaluation, the private opinion I have of myself." The 5-point scale used for scoring was: 1 = Not important to who I am 2 = Slightly important to my sense of who I am 3 = Somewhat important to my sense of who I am 4 = Very important to my sense of who I am and 5 = Extremely Important to my sense of who I am.

Leader–Member Exchange was chosen to measure a woman's perceived relation with her manager (Graen and Uhl-Bien, 1995). Seven items were included such as (a) "Do you know where you stand with your leader…do you usually know how satisfied your leader is with what you do?" with scoring as 1 = Rarely 2 = Occasionally 3 = Sometimes 4 = Fairly Often 5 = Very Often; and (b) "How well does your leader understand your job problems and needs?" with scoring as 1 = Not a bit 2 = A Little 3 = A Fair Amount 4 = Quite a Bit 5 = A Great Deal.

DATA ANALYSIS

Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were employed to verify the uni-dimensionality, the validity, and the reliability of the model constructs. SPSS for Windows (PASW Statistics Gradpack 17.0, 2009) was used to conduct the EFA on the measures using principal axis factoring and Promax oblique rotation method. CFA and the SEM were completed using AMOS. Mediation was tested using the criteria established by Preacher and Hayes (2008).

RESULTS

DESCRIPTIVE STATISTICS

The means, standard deviations, reliabilities and correlation between the study variables are shown in **Table 2**. All variables have acceptable reliabilities including two of the newly developed ideal self-scales which exceed the 0.60 exploratory criteria (Hair et al., 2010).[1]

The confirmatory factor analysis showed that the model had acceptable fit with $n = 495$ where $\chi^2 = 2844$, $df = 1230$, $\chi^2/df = 2.32$, CFI = 0.904, RMSEA = 0.052, PCLOSE = 0.152.

[1]Descriptive statistics are included in **Table 2** for the constructs that have significant effects in the structural equation model (**Figure 2**). The ideal self-hope and the ideal self-sense of purpose are shown because they significantly impacted engagement. Since the other three ideal self-scales did not have any impact they are not included in **Table 2**.

Table 2 | Means, standard deviations, cronbach's alphas and correlations for the model variables[b].

		Mean	*SD*	1	2	3	4	5	6	7	8	9
1	Self-efficacy	3.45	0.44	**0.81**								
2	Identity	4.09	0.64	0.20	**0.67**							
3	Optimism	3.81	0.78	0.33	0.15	**0.87**						
4	Hope	6.59	0.86	0.56	0.18	0.48	**0.87**					
5	Ideal self-hope	5.99	0.81	0.28	0.16	0.37	0.49	**0.91**				
6	Ideal self-sense of purpose	5.37	1.19	0.28	0.24	0.31	0.43	0.59	**0.79**			
7	Leader–member exchange	3.60	0.84	0.17	0.02	0.20	0.26	0.17	0.06	**0.92**		
8	Career commitment to engineering	4.03	0.89	0.23	0.14	0.21	0.34	0.26	0.17	0.22	**0.80**	
9	Engagement	5.47	1.14	0.29	0.14	0.31	0.47	0.38	0.36	0.36	0.37	**0.96**

[b] *n = 495. Reliability coefficients are reported along the diagonal.*

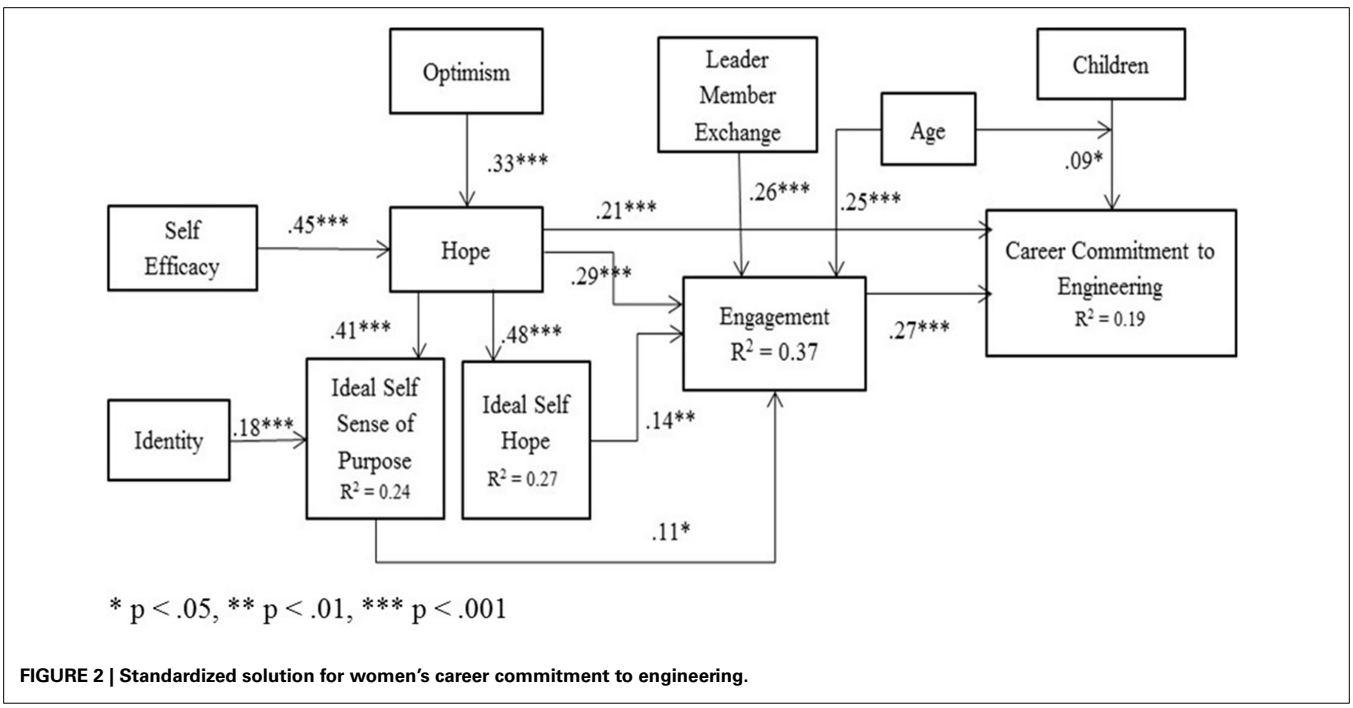

FIGURE 2 | Standardized solution for women's career commitment to engineering.

Convergent and discriminant validity were established using the criteria from Hair et al. (2010).

SURVEY RESPONDENTS

The sample of 495 women with engineering degrees was further analyzed to understand differences related to age, employment status, marital status, and number of children. **Table 3** summarizes the employment of the 495 women by age. Forty-six percent of the respondents had described their current employment an engineer. Twenty-five percent described themselves as technical managers and 14% were executives. Sixteen percent described their current role as not an engineer, nor in any position related to engineering, with 37 women or 7.4% identifying their current job as non-engineering, five were unemployed and looking, one was unemployed and not looking, five self-described themselves as stay-at-home moms, one was retired, one was a student in a non-engineering degree program, 14 were in school seeking another engineering degree, and 13 listed "other."

It is important to note that more than 49% of the women were 35 years of age or younger.

Numerous engineering degrees were identified including chemical engineering (46%), mechanical engineering (12%), electrical engineering (8%), civil engineering (5%), industrial (4%), and biomedical engineering (4%). **Table 4** summarizes the demographic data related to age, marital status and number of children. In total 25% never married, 18% were married with no children, 45% were married with children, 6% divorced or separated, and 5% living with a partner. Forty seven pwercent of the women engineers had no children, 11% had one child, 29% had 2 children, 10% had 3 children, and 2% had four or more children. Women 30 years of age and younger comprised 36% of the participants. Only 4% of these women (30 years of age and younger) had children while 77% of women ages 31–50 years of age had children. Women ages 31–50 years of age comprised 53% of the participants with women 51 and older comprising 10% of the participants and 75% of them reported having children.

Table 3 | Employment statistics by age for women with engineering degrees.

Sample			Current employment				Years worked in engineering							
Age range	**N**	**%**	**Engineer**	**Manager[a]**	**Executive[b]**	**Other[c]**	**Never**	**1–5**	**6–10**	**11–15**	**16–20**	**21–25**	**26–30**	**30+**
21–25	84	17%	54	6	3	21	7	77	0	0	0	0	0	0
26–30	96	19%	61	11	9	15	5	63	28	0	0	0	0	0
31–35	65	13%	33	14	11	7	0	8	34	23	0	0	0	0
36–40	61	12%	25	20	10	6	1	2	9	34	0	0	0	0
41–45	76	15%	22	29	12	13	2	2	9	9	26	28	0	0
46–50	63	13%	23	23	13	4	2	0	3	6	10	28	14	0
51–55	44	9%	7	18	9	10	0	1	2	4	1	6	15	15
56–60	5	1%	0	4	0	1	0	0	0	0	2	1	2	0
61+	1	0.20%	1	0	0	0	0	0	0	0	0	0	0	1
All	495	100	226	125	67	77	17	153	85	76	39	63	31	16
			46%	25%	14%	16%	3%	31%	17%	15%	8%	13%	6%	3%

[a] *"I am currently employed in a technical management or engineering management role."*

[b] *"I am currently employed in a position that was a normal promotional move from my engineering career (but not in engineering or technical management)."*

[c] *Not an engineer or any position related to engineering or unemployed or a student.*

Table 4 | Marital status and number of children for women with engineering degrees.

Sample			Marital status				Children				
Age range	**N**	**%**	**Single**	**Married**	**Divorced**	**Living with partner**	**0**	**1**	**2**	**3**	**4+**
21–25	84	17%	63	14	1	6	81	2	1	0	0
26–30	96	19%	37	52	0	7	80	10	5	1	0
31–35	65	13%	14	47	2	2	28	9	22	6	0
36–40	61	12%	4	49	7	1	8	8	33	10	2
41–45	76	15%	4	64	6	2	17	11	33	11	4
46–50	63	13%	5	50	4	4	9	8	35	10	1
51–55	44	9%	2	36	4	2	11	6	13	11	3
56–60	5	1%	0	2	3	0	0	0	2	2	1
61+	1	0.2%	0	0	1	0	0	0	1	0	0
All	495	100	129[a]	314	28	24	234	54	145	51	11
			26%	63%	5.7%	4.8%	47.3%	10.9%	29.3%	10.3%	2.2%

[a] *Includes 3 widows.*

ANALYSIS FOR COMMON METHOD BIAS

Common method bias (CMB) is a concern when conducting self-reported research as it refers to variance that is attributable to the measurement method rather than to the constructs. Most researchers agree that common method variance is a potential problem in behavioral research (Podsakoff et al., 2003). To determine if the common method for data collection impacts the measurement model, Pavlou et al. (2007) discuss examination of the correlation table of the latent variables and CMB may be present if correlations are above 0.90. As shown in **Table 2**, the correlations of the study variables are all below this 0.90 standard. Further to assess for methods bias a confirmatory factor analysis was conducted in which the baseline model included a CMB factor where each item was converted to a single item construct (Podsakoff et al., 2003). Each of these single item constructs is linked to a common method factor (CMF). The variance associated with the measurement model was more than 2.5 greater than the variance associated with the CMF and it is concluded that common method variance does not bias the results of this study.

DIRECT EFFECTS WITHIN THE STRUCTURAL EQUATION MODEL

Figure 2 shows that hypotheses 2a, 2b, 3a, 3b, 4, and 5 are supported as there are direct significant effects within the SEM. Career commitment to engineering is positively impacted by engagement with $\beta = 0.27$, $p < 0.001$ (H1) and hope $\beta = 0.21$, $p < 0.001$. Engagement is significantly impacted by leader–member exchange $\beta = 0.26$, $p < 0.001$(H2), age $\beta = 0.20$, $p < 0.001$, hope $\beta = 0.28$, $p < 0.001$, the ideal self-hope $\beta = 0.14$, $p < 0.01$ and the ideal self-sense of purpose $\beta = 0.11$,

$p < 0.05$. The ideal self-sense of purpose is positively impacted by hope $\beta = 0.36$, $p < 0.001$ (H5a) and identity $\beta = 0.15$, $p < 0.001$(H5b). Hope is positively impacted by self-efficacy $\beta = 45$, $p < 0.001$(H6a) and optimism $\beta = 0.33$, $p < 0.001$(H6b).

No support was found hypotheses 8a or 8b as career commitment is not directly or indirectly impacted by either age or number of children. There was an interaction effect of age and children as described in **Figure 2**.

MEDIATION TESTING

Hypotheses 6, and 7 are supported by mediation testing using the method suggested by Preacher and Hayes (2008). Engagement fully mediates the following relationships to career commitment: leader–member exchange, self-efficacy (H7) and optimism. Engagement partially mediates the impact of hope on career commitment. Additionally, we found that hope fully mediates the impact of self-efficacy and optimism on engagement. H1 is not supported; instead, we find that the ideal self-hope and the ideal self-sense of purpose directly impact engagement which directly impacts career commitment. **Table 5** includes the direct, indirect and total effects of leader–member exchange, self-efficacy, hope and the two ideal self-constructs on engagement and career commitment to engineering.

INTERACTION EFFECT

Since no support was found for age and number of children directly impacting career commitment (H8a and H8b), we tested for an interaction effect. The interaction of age and number of children was found to influence career commitment as shown in **Figure 3**. For those women with fewer children, career commitment to engineering decreases with age. For women with more children, career commitment to engineering increases with age.

MODEL FIT

The model, as shown in **Figure 2**, is found to have acceptable fit (Hu and Bentler, 1999; MacCallum and Austin, 2000; Hair et al., 2010) with $\chi^2 = 46.6$, $p = 0.004$, $df = 24$, $\chi^2/df = 1.942$, RMSEA = 0.044, pclose = 0.690 and CFI = 0.984.

DISCUSSION

This study contributes three important findings to the literature on personal vision, work engagement and women's careers. First, the study empirically validates that a personal vision, as operationalized as the ideal self, is comprised of self-efficacy, optimism, hope and core identity and that the ideal self directly impacts work engagement. Second, the study shows that work engagement is the mediating mechanism linking career commitment to self-efficacy, hope, and leader–member exchange. Lastly, we find that a woman's career commitment is influenced not only by work engagement, but is impacted by her relationship with her manager and an interaction effect between her age and number of children.

A key contribution of the study is that these findings support theoretical development that the ideal self is comprised of identity and hope, with self-efficacy and optimism components of hope (Boyatzis and Akrivou, 2006). As theorized by Boyatzis (2008), change occurs when one acknowledges discrepancies between one's ideal self and one's real self. The acknowledgement often results from a tipping point, where women discover that their real self is not aligned with their ideal self. This discovery motivates them to leave engineering careers. For the women who persisted, they described themselves in engineering terms and discussed their work in engineering as challenging and meaningful. Their ideal self was aligned with their real self, here conceptualized as work engagement. The ideal self directly impacts work engagement and greater work engagement results in greater commitment to engineering.

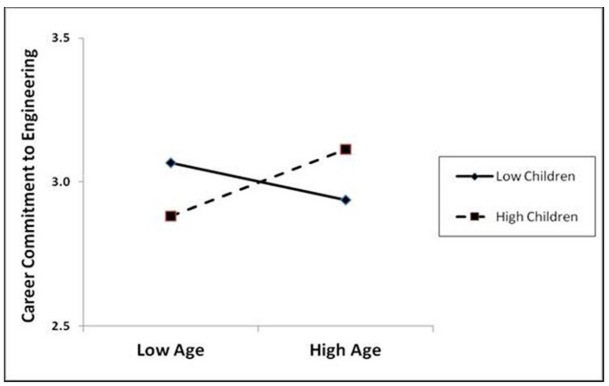

FIGURE 3 | Interaction effects of age and children on career commitment to engineering.

Table 5 | Direct, indirect and total effects of variables on work engagement and career commitment to engineering.

	Engagement			Career commitment to engineering		
	Direct	Indirect	Total	Direct	Indirect	Total
Self-efficacy		0.18**	0.18**		0.14**	0.14**
Optimism		0.13**	0.13**		0.10*	0.10*
Hope	0.28***	0.12**	0.40***	0.21***	0.10*	0.31***
Ideal self-sense of purpose	0.10**		0.10**		0.03	0.03
Ideal self-hope	0.14**		0.14**		0.04	0.04
Leader–member exchange	0.26***		0.26***		0.07*	0.07*

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

The present study also contributes to understanding how work engagement is a mediating mechanism related to women's persistence in engineering. Engagement in a work role has become popular in practice as engagement has been related to organizational benefits (Saks, 2006). Here, we add empirical evidence to recent work that views engagement as a motivational concept with behavioral consequences (Rich et al., 2010), as women who are engaged in their engineering work are more likely to persist in their engineering career. The retention of these women in the engineering profession not only benefits organizations, but benefits women and society as a whole (Margolis et al., 1999/2000). Women benefit economically as the number of engineering jobs will continue to grow and salaries are relatively high (Bureau of Labor Statistics, 2014b). Organizations and society benefit from the broadened perspective and diversified talent women bring to the field (Margolis et al., 1999/2000).

The results of this study not only validate prior theory on factors impacting engagement but add to theory, as age, hope, optimism and the ideal self are shown to be impact work engagement. Self-efficacy and the relationship with one's manager also impact engagement, supporting earlier theoretical development and empirical studies (Saks, 2006; Bakker and Demerouti, 2008; Rich et al., 2010).

Our study extends previous research on women's careers by addressing why women persist as opposed to identifying the reasons women leave professional roles (Hewlett and Luce, 2005; Frehill, 2008; Hewlett et al., 2008; Fouad and Singh, 2011). Most importantly, the findings from the present research study show that the reasons women persist are not the inverse of the reasons women leave. Previous research shows that women leave the engineering profession in large measure because of difficult work conditions and environments (Frehill, 2008; Hewlett et al., 2008) and specifically due to the lack of supportive organizational practices (Singh et al., 2013). Yet, women who persist in engineering face the same challenging work conditions and environments but overcome these challenges (Buse et al., 2013). The women who persist do so because they are engaged in their work. The challenges, novelty and meaningfulness they find in their work seem to allow them to overcome difficult workplaces.

While the kaleidoscope career model (Mainiero and Sullivan, 2005) suggests that women trade challenge for balance, this study suggests that if women are appropriately challenged and find meaning and engagement in their work, they will find the appropriate balance.

The findings related to marital status and number of children may surprise those who theorize that women leave the workforce for marriage and children. Most women in the study's sample were married (63%), and for women over 30 years of age, 79% were married. More than three quarters of the women over 30 years of age had at least one child and 63% had two or more children. Further, the number of children had no direct impact on either engagement nor on career commitment, but an interaction effect occurred such that women with more children increased their commitment to engineering as they aged. In contrast, only age had an impact on engagement with older women being more engaged in their work, supporting the earlier discussion that women who persist do so because they find meaning and challenge in their work. The differences in the responses related to age are important in this study and augment theoretical development related to women's career patterns.

PRACTICAL IMPLICATIONS

As mentioned at the beginning of this paper, corporations including Google are seeking a more diverse workforce. Based on this study, we offer three broad practical suggestions to improve recruitment, retention and advancement of women in engineering and other STEM professions. First, these findings emphasize the importance of professional and leadership development for women in STEM professions. Next, the study emphasizes how important work engagement is for STEM women to persist in their profession. Lastly, we emphasize the need for supporting relationships in organizations that include STEM workers.

Our first suggestion is that women in the STEM professions have the opportunity to create a personal development plan. As found in our study, women who could articulate a personal vision were more likely to be engaged in their work and committed to the profession. Formalizing the development plan through a process aids in understanding of her role and her future work.

Ely et al. (2011) recommend development programs designed specifically for women in leadership. These types of programs enable women to understand how their careers are impacted by second generation gender bias. We urge organizations to provide professional and leadership development opportunities for women in STEM occupations. These programs should be developed to provide women with the opportunity to develop a personal vision and to help them understand how bias impacts them in the STEM professions. Additionally, skills and competencies important to achieving their vision can be developed, including self-efficacy. These development programs are likely to give organizations a differential advantage when recruiting women to their organizations. The programs will enable STEM women working in their organizations to recognize and overcome barriers to achievement. Hope is a powerful motivating emotion. As we found, women who are hopeful are more engaged at work and committed to the STEM professions.

In our interviews with women who persisted in the engineering profession, we heard stories of how the work provided ongoing challenges, novelty and the opportunity for continuous learning. Higher levels of work engagement lead to higher levels of commitment to the engineering profession. For corporations seeking to recruit and retain women engineers, the work should be emphasized and matched to the women's background and interests. Our own experience is that women are often placed into roles such as quality engineering, which requires less technical skills and no direct line to advancement.

Supporting relationships are needed in any workplace. The under-representation of women in engineering, with only 1 in 10 engineers being women, creates an environment where women are the minority and often do not get the support they need from their managers or their colleagues—as we found in our study. Organizations seeking to retain and advance women engineers

should provide mentors and sponsors to aid women in the workplace.

Our study shows that women who have support from their leaders are more engaged at work and more likely to persist. Our own experience in industry has been that people who are successful in technical roles are the ones promoted to leadership roles. Skills needed to be good at technology are not the same skills that allow one to be a good leader. We recommend that all leaders in organizations be provided with leadership development to ensure that women (and men) are supported in the workplace.

This study aligns with the work of other researchers who suggest organizational changes are necessary to retain women in the STEM professions (National Research Council, 2007; Bilimoria et al., 2008; Hewlett et al., 2008; Fouad and Singh, 2011; Bilimoria and Liang, 2012). Organizations should recognize the compelling business case associated with increasing gender diversity at all levels of the organizations including the number of women in senior leadership (Catalyst, 2004; Ernst and Young, 2009; McKinsey and Company, 2010). This study shows that organizations wanting to recruit, retain and advance STEM women should provide women with the opportunity for personal development, ensure that the work is challenging and novel, and that women are matched with managers and mentors who provide support.

DIRECTIONS FOR FUTURE RESEARCH

Future studies are recommended to explore how one's personal vision impacts career and life choices. The ideal self-scale can be used to empirically validate relationships between a personal vision and these choices. Studies are also recommended that can explore additional antecedents for the ideal self. Continued theory development related to one's ideal self and how one creates and maintains a personal vision is recommended with empirical studies to support the theory.

Researchers are encouraged to continue to develop theories and empirical support for factors impacting women's persistence in professional careers including engineering. Particularly, factors related to engagement in the workplace and contextual factors that aid organizations in retaining women should be explored, including additional individual factors as well as institutional, social and cultural factors (National Research Council, 2007). This work is especially recommended for women engineers as well as women in other STEM professions as it would build upon the current findings and support practical solutions to the enduring problem of women's under-representation in these professions. Research is also recommended comparing the current findings on women in the engineering profession to their male peers. Finally, additional research is recommended on how self-efficacy and self-confidence are developed within professional roles, and how educational programs at the undergraduate and graduate levels as well as workplaces can facilitate their development.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: http://www.frontiersin.org/journal/10.3389/fpsyg.2014.01400/abstract

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 22 September 2014; accepted: 16 November 2014; published online: 08 December 2014.

*Citation: Buse KR and Bilimoria D (2014) Personal vision: enhancing work engagement and the retention of women in the engineering profession. Front. Psychol. **5**:1400. doi: 10.3389/fpsyg.2014.01400*

This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology.

frontiers in
PSYCHOLOGY

ORIGINAL RESEARCH ARTICLE
published: 18 November 2014
doi: 10.3389/fpsyg.2014.01322

Antecedents of organizational engagement: exploring vision, mood and perceived organizational support with emotional intelligence as a moderator

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As organizational leaders worry about the appalling low percentage of people who feel engaged in their work, academics are trying to understand what causes an increase in engagement. We collected survey data from 231 team members from two organizations. We examined the impact of team members' emotional intelligence (EI) and their perception of shared personal vision, shared positive mood, and perceived organizational support (POS) on the members' degree of organizational engagement. We found shared vision, shared mood, and POS have a direct, positive association with engagement. In addition, shared vision and POS interact with EI to positively influence engagement. Besides highlighting the importance of shared personal vision, positive mood, and POS, our study contributes to the emergent understanding of EI by revealing EI's amplifying effect on shared vision and POS in relation to engagement. We conclude by discussing the research and practical implications of this study.

Keywords: vision, mood, engagement, emotional intelligence, individual differences, psychological climate

INTRODUCTION

Employee engagement has quickly become an important construct in organizational studies (e.g., Crawford et al., 2010; Rich et al., 2010; Gruman and Saks, 2011; Saks and Gruman, 2014). Empirical research suggests that employee engagement drives a number of positive individual and organizational outcomes (Saks and Gruman, 2014), including, for example, job performance (Rich et al., 2010), job satisfaction (Saks, 2006), and helping organizations reach their potential through business growth and profitability (Saks, 2006; Macey et al., 2009). Moreover, employee engagement is viewed as a source of competitive advantage (Kular et al., 2008), has become a catalyst for rethinking performance management systems (Gruman and Saks, 2011), and is used as a tool for improving talent management (Macey et al., 2009).

In spite of what we have learned so far about employee engagement, there is still a clarion call for more work to be done (e.g., Christian et al., 2011; Saks and Gruman, 2014). One under investigated area relates to the possible antecedents of employee engagement. For example, Saks (2006) pointed out "...there is little empirical research on the factors that predict employee engagement" (p. 604). More recently, Macey and Schneider (2008) lamented that "potential antecedents and consequences of engagement...have not been rigorously conceptualized, much less studied" (p. 304).

Our purpose is to address the need for further research on the antecedents of engagement. We first define employee engagement and review the current research on its antecedents. In doing so, we show that little has been done to explore the complex socio-psychological antecedents of engagement. Next, we test the association of two psychological climate factors and organizational support with employee engagement and whether individual characteristics moderate the relationship with engagement. Specifically, we investigate the association of (1) shared personal vision and shared positive mood (climate factors), (2) perceived organizational support (POS), and (3) peer-rated employee emotional intelligence (EI) with organizational engagement. Finally, we discuss the research and practical implications and contributions of these results and propose directions for further research.

THEORY AND HYPOTHESES

ENGAGEMENT

To date the definition of engagement still lacks universal agreement (Kular et al., 2008), but most refer to Kahn's (1990) definition, which denotes employee engagement as "the harnessing of organization members' selves to their work roles" (p. 694). More recent definitions tend to define employee engagement as an emotional and intellectual commitment to the organization (see Saks, 2006) and a representation of the level of personal commitment employees are willing to make or to invest in their job (Macey and Schneider, 2008). Others have noted that employee engagement represents the amount of discretionary effort employees will exhibit in their job (Frank et al., 2004). Similar constructs to employee engagement have also been presented like "work engagement" ("a relatively enduring state of mind referring to the simultaneous investment of personal energies in the experience or performance of work," Christian et al., 2011, p. 95) and "job engagement" ("the investment of an individual's complete self into a role," Rich et al., 2010, p. 617), resulting in some initial discussion exploring the difference between work, job and, employee engagement (see Christian et al., 2011).

Drawing on the denotation of engagement being role related, Saks (2006) suggested that there are work roles (job engagement) and the role of being an organizational member (organizational engagement) that comprise employee engagement. These two forms of engagement were operationalized by using items that assess an employee's "psychological presence in their job and organization" (Saks, 2006, p. 608). For the present study, we explore how individual characteristics impact one's commitment to and connection with their role as an organizational member. Our particular interest is the connection one feels with something relatively more distant from themselves (i.e., the organization) as opposed to something more in their direct control (i.e., the job). At a time when employee engagement is still in decline in the United States in spite of a recovering economy and when globally 40% of employees still report they are unengaged (Aon Hewitt, 2013), organizations are clamoring to figure out how to strengthen the connection between the organization and their employees. We are curious as to what individual characteristics drive a person's commitment to and affiliation with the organization they join. Thus, we focus on organizational engagement (herewith called engagement or employee engagement) in this study.

Antecedents of engagement

Recently scholars have started to explore the potential antecedents to employee engagement. Drawing upon social exchange theory (Cropanzano and Mitchell, 2005), prior research has found that job-related factors such as job characteristics and organizational support positively influence engagement (Kahn, 1990; Saks, 2006; Kular et al., 2008). In one of the earliest studies to look at the antecedents of engagement, Saks (2006) suggested that POS, perceived supervisor support, reward and recognition, procedural justice, and distributed justice were possible antecedents. As noted by Saks and Gruman (2014), most of the work on the antecedents of engagement has focused on measuring perceived work conditions, "neatly organized as job demands and job resources" (p. 167). These job demand (e.g., job task) and job resources (e.g., job control, job autonomy, job feedback, etc.) variables are not without their limitations (Saks and Gruman, 2014). For example, much of the research on employee engagement has focused on the job task, but "although the task is central, it is the degree to which the person can implement his or her preferred self in the work that is key" (Macey and Schneider, 2008, p. 21).

In contrast, Rich et al. (2010) found that value congruence, POS, and core-self evaluations had direct effects on engagement and that engagement mediated the impact of these three factors on the performance of firefighters. These scholars argue that engagement "reflects simultaneous investment of cognitive, emotional, and physical energies in such a way that one is actively and completely involved in the full performance of a role" (p. 622). We are interested in further understanding what "emotional energies" and individual characteristics, related to one's "preferred self" and vision of a preferred, ideal future, lead to engagement. It is on this line of inquiry that our work builds.

Thus, while the aforementioned work on the antecedents of employee engagement represents a significant initial step toward understanding the drivers of engagement, it provides an incomplete explanation for the complex socio-psychological phenomenon engagement represents. If employee engagement is driven by an employee's level of psychological presence in and emotional commitment to their role as organizational member, then a better understanding of the psychological drivers (e.g., aspirations, hopes, mood, etc.) and emotional and social capabilities of an employee should help identify other key antecedents of engagement. For example, it would seem that an exploration of antecedents that measure "the degree to which the person can implement his or her preferred self" (Macey and Schneider, 2008. p. 21) would be a critical antecedent of employee engagement.

SOCIO-PSYCHOLOGICAL ANTECEDENTS

Psychological climate has been defined as the "perceptions that assess the significance and meaning of work environments to individuals" (James et al., 2008). A key influence on the perceptions employees have about the organization is the emotions employees feel (James et al., 2008). Emotions play a central role in nearly all action. Emotions excite interest, focus attention, alert the need for change, and move people to act (Fredrickson, 2001). Emotions also influence how people cope with challenge and threat, set new goals, learn new behaviors and draw on others for help or support (Fredrickson, 2001; Fredrickson and Branigan, 2005). The fields of positive psychology (Seligman and Csikszentmihalyi, 2000) and positive organizational scholarship (Cameron and Spreitzer, 2012) have accentuated a relational and contextual perspective to emotion: the extent to which an organization's climate is emotionally positive or negative to an individual.

Intentional Change Theory (Boyatzis, 2008) postulates that both positive emotions play an important part of the push-pull affecting a person's behavior through the neuro-endocrine, emotional, cognitive, and perceptual systems. In groups and organizations, the overabundance of positive to negative emotion forms a critical ratio as to the engaging nature of the environment, helping employees to open their minds and hearts, as well as increase the constructive aspects of social contagion (Fredrickson, 2001; Cameron, 2008). Further, others have suggested that the presence of positive personal dimensions of hope, vision, compassion, and overall positive mood are the essential components of an overall positive emotional climate (Fredrickson, 2001; Boyatzis, 2008; Cameron, 2008). These personal dimensions predict how open people are to others and others' ideas, the degree to which they feel connected to and involved in both their work and with others, and how resilient they will be in moments of setback or failure. Thus, assessing these positive dimensions may present an important link to levels of employee engagement. Namely, as employees feel like the organization shares their personal vision for their work and feel positive about and supported by the organization for whom they work, they will likely be more engaged in their role as organizational members.

As a way of classifying these personal factors, Boyatzis (2008) grouped personal hopes, dreams, possibilities, positive outlook, and self-directed learning goals that make up one's ideal self into what he called the "positive emotional attractor" (PEA, see Boyatzis, 2008). For the purposes of this study, we operationalize the PEA as *shared personal vision* and *shared positive mood.*

We propose these two psychological climate factors will have a positive association with engagement. Shared vision captures the positive emotions employees feel about the organization's view of the future and management's commitment to reach a particular, clearly defined vision or purpose. Shared positive mood captures how employees feel about their work in the organization and the organization itself. High quality, positive relationships at work engender positive emotions, which can increase both individual and organizational commitment and effectiveness (Dutton and Ragins, 2007). Thus, we propose that these two climate factors enable shared, high quality connections with those one works with and to one's work, to in turn promote higher engagement. In support of this direction of inquiry, one recent study found a strong relationship between employees' shared positive mood and their level of engagement (Wijhe et al., 2011). We hypothesize the following:

Hypothesis 1

Shared personal vision positively associates with organizational engagement.

Hypothesis 2

Shared positive mood positively associates with organizational engagement.

PERCEIVED ORGANIZATIONAL SUPPORT

Perceived organizational support is defined as "a general belief that one's organization values [employees'] contributions and cares about their wellbeing" (Saks, 2006, p. 605; *cf* Rhoades and Eisenberger, 2002). In addition to the socio-psychological climate factors as possible key antecedents to engagement, Saks (2006) was the first to test the association between POS and engagement. He found support for a positive relationship between POS and engagement. Surprisingly, this line of inquiry has not been extended. We could not find additional studies that used POS as an independent variable and testing its relationship with engagement as a dependent variable.

Following our interests and the literature reviewed earlier, we retest Saks' (2006) original hypothesis that proposed POS will have a positive association with engagement. More importantly, in addition to retesting Saks' (2006) initial finding, we seek to extend his work in the present study by examining the relationship between EI, POS, and engagement (discussed in more detail later). In sum, we hypothesize the following:

Hypothesis 3

Perceived organizational support positively associates with organizational engagement.

EMOTIONAL INTELLIGENCE

As a distinguishing individual capability, EI has caught the attention of scholars and practitioners alike (e.g., Goleman et al., 2002; Matthews et al., 2002; Ashkanasy and Daus, 2005; Mayer et al., 2008; O'Boyle et al., 2011; Walter et al., 2011). Some have acknowledged that much of the increased scholarly interest in EI is likely related to the mounting research showing the predictive and construct validity of EI (e.g., Ashkanasy and Daus, 2005; O'Boyle et al., 2011).

To date, most research has intelligence and motivation as relatively separated constructs (e.g., Kanfer and Heggestad, 1997; Kanfer and Ackerman, 2000; Schmitt et al., 2003). Certainly EI is not *g*, but EI combines affective and cognitive abilities, therefore cognitive processes are a significant part of EI. From their study on determinants of work motivation, Kanfer and Ackerman (2000) concluded: "The results of this study add to the growing body of evidence demonstrating the independence of individual differences in motivation and individual differences in intellectual abilities—as indexed by measures that aim primarily at assessing *g*" (p. 480). In their review, Schmitt et al. (2003) concluded that personality (not intelligence) was the primary predictor of motivation.

Under the current conceptualization of EI, there are three primary domains of research (Caruso, 2003). The first of these three treats EI as a set of interrelated intellectual abilities related to using emotional information. This domain is similar to models of general intelligence (Mayer and Salovey, 1997). The second domain is a trait approach that treats EI as a set of traits for adapting and coping. This domain is similar to models of personality and dispositional traits (Bar-On, 2000).

Finally, the third domain is a behavioral approach based on behavioral competencies. Similar to leadership competency models, this approach is related to combining affective and cognitive abilities. Under this third, behavioral domain (Boyatzis, 2009), EI is defined as the ability to be aware of self and use that awareness to influence one's behavior. The resulting behaviors derived from strong EI are observable and measurable; therefore, this behavioral approach to EI has been operationalized using competencies that predict individual and team performance (see Offermann et al., 2004; Hopkins and Bilimoria, 2008; Boyatzis, 2009).

Competencies have been defined as learned capabilities that contribute to effective performance at work (McClelland, 1973; Boyatzis, 1982). A competency is any measurable characteristic of a person that differentiates level of performance in a given job, role, organization, or culture (Boyatzis, 1982). This competency approach to EI combines affective and cognitive abilities, but EI competencies are fundamentally different from competencies like technical skills, which rely solely on cognitive abilities based in the neocortex. Emotional intelligence is the ability to recognize, understand and use emotional information about oneself that leads to or causes effective or superior individual performance. Emotional intelligence exists when employees consistently demonstrate behaviors related to EI competencies, such as emotional self-awareness, emotional self-control, and adaptability, by drawing upon emotional information to influence behavior.

As an important component of employees' emotional energy and preferred self, few studies have closely looked at association between interpersonal capability and employee engagement. Yet, some have suggested that behavioral competencies like communication skills and the ability to give upward feedback impact employee engagement levels (Kular et al., 2008). To our knowledge no one has looked at the emotional and social behaviors that might impact employee engagement; but, there is compelling evidence showing clear connections between EI and job performance (e.g., O'Boyle et al., 2011). Therefore, it makes sense that there may be

a relationship between employee engagement and the emotional capability on the part of the employee. High EI should enable an employee to form, develop, and manage positive relationships with others (Goleman et al., 2002). Strong relationships at work should then lead to stronger connections with one's organization (Dutton and Ragins, 2007).

Emotional intelligence as a moderator

There has been little research relating EI to psychological climate. Some initial results show that managers' EI positively correlates with climate (Momeni, 2009). Further, "evidence does suggest that EI has potential to help scholars better understand leadership emergence, specific leadership behaviors, and leader effectiveness" (Walter et al., 2011, p. 55). As noted earlier, a positive climate can create an environment where people feel engaged and committed to their work and their organization. On the other hand, when the climate is negative and emotions are toxic, employees disengage from work, morale suffers, and performance drops (Frost, 2003). Still, as a meaningful, multi-faceted construct, engagement has not been sufficiently explored as it relates to EI.

How one performs in his or her job has been linked to the person's level of engagement (e.g., Salanova et al., 2005; Ho et al., 2011) and employee engagement has been shown as a key predictor of individual, team, and business performance (e.g., Harter et al., 2002; Crawford et al., 2010; Gruman and Saks, 2011). Similarly, EI predicts job performance (O'Boyle et al., 2011). Latham and Pinder (2005) observed: "Research now shows that traits predict and/or influence job search and choice of job, as well as job performance and satisfaction. These traits include extroversion, conscientiousness, self-regulatory and self-monitoring strategies, tenacity, core self-evaluations, and goal orientation" (p. 488).

The behaviors that compose EI competencies help employees gain self-knowledge and engage in self-regulation to effectively facilitate relationships with others. Because EI is centered on understanding and managing self and employee engagement is about connecting oneself to one's role as an organizational member, we surmise that EI will help facilitate the connection of self to an organizational role. We found one study (Ravichandran et al., 2011) that looked at the relationship between EI and work engagement and found no direct relationship.

We surmise that EI will impact engagement but, as noted earlier, prior research has not found this relationship to be one of a direct association. In contrast, we believe EI will have an "amplifying" role in its association with psychological climate factors, POS, and employee engagement. By "amplifying," we mean to suggest EI increases the positive association of POS and psychological climate factors on engagement. We theorize that as an individual characteristic, EI does not have a direct association with organizational engagement because EI is centered on the self, particularly the self-awareness and self-management aspects of the self. On the other hand, POS, shared personal vision, and shared positive mood are constructs that assess how employees feel about the organization and their role as organizational members. This level of assessment of comparing self to one's organizational role will be enhanced the more self-knowledge an employee possesses. As employees are clear about who they are, what they value, what they aspire to be, what they are good at doing, what type of support they want and need, for example, they can make more accurate judgments as to whether their goals and aspirations are being met.

Therefore, we believe EI will amplify the association between POS, mood, and vision and engagement. For example, EI can help an employee understand his or her personal vision and to assess the degree to which this vision is shared. EI likely empowers self-management to reconcile concerns about possible disconnects between an employee's personal vision and the employee's role as an organizational member. As the association between vision and one's organizational role weakens, for example, EI can enable an employee to recognize and appreciate this disconnect and use self-management behaviors like emotional self-control and/or adaptability to rectify and strengthen the relationship. As EI increases, clarity and management of one's vision and mood increases, which can in turn increase engagement. In sum, we propose that EI serves as a "check and balance" to amplify the association between POS and climate factors and engagement that would not be possible without the self-awareness and self-management capability that EI provides.

Therefore, we predict there will be positive association between EI, psychological climate, POS, and employee engagement such that EI will amplify the positive association shared vision, positive mood, and POS have on organizational engagement. In sum, the hypotheses that follow are designed to test the moderating role we believe individual characteristics (EI) play in amplifying psychological climate factors and POS that associate with engagement.

Hypothesis 4

Emotional intelligence positively increases the association of personal shared vision on organizational engagement.

Hypothesis 5

Emotional intelligence positively increases the association of shared positive mood on organizational engagement.

Hypothesis 6

Emotional intelligence positively increases the association of POS on organizational engagement.

RESEARCH METHOD

SAMPLE

Data were collected from one for-profit public company and one not-for-profit educational institution, both headquartered in a Midwestern state of the United States. These two consenting organizations agreed to provide full access to directly contact organizational members for possible participation in a web based data collection effort. In total, 638 engagement surveys were sent between the two organizations with a 44.7% response rate. Thus, 285 employees completed the engagement survey. The Institutional Review Board approved the Informed Consent and ethical conduct of the study at the third author's university, and all protocols governing the use of human subjects were followed.

The for-profit company provided email addresses to all personnel in their Information Technology department while the not-for-profit institution provided email addresses for all of its

administrative personnel. The web-based survey was administered over a 1 month period. The engagement, POS, and climate surveys started with the request for each employee to provide up to seven names of their co-workers that could rate the employee's EI. An EI survey was then sent to each of the persons nominated. 798 co-workers completed the EI survey rating 238 study participants. Follow-up reminders were sent twice during the survey period.

After linking the climate, engagement, POS, and EI surveys, and retaining those cases that had complete data on all analysis variables, we obtained an analytic sample of 231 cases. Job tenure (time in *current job*) was measured ordinally on a scale ranging from 1 ("less than 1 year") to 4 ("more than 10 years"). The modal response for job tenure was "between 1 and 5 years." As noted in **Table 1**, employees in the for-profit organization had job tenure of 2.32, whereas those in the not-for-profit organization had job tenure of 2.73. Work experience was measured on a scale of 1 ("less than 1 year") to 4 ("more than 10 years"). The modal response for each organization was "more than 10 years."

Table 1 shows that employees in the for-profit organization had a mean score of 3.46; whereas, those in the not-for -profit organization had a mean score of 3.93. Salary was measured on a scale of 1 "less than 20,000" to 4 "more than 100,000." The modal response for each organization was "between 50,000 and 100,000." In terms of salary, the for-profit organization had a mean score of 2.89; it was 2.62 for the not-for-profit organization. There was a substantial difference in the gender makeup of the two organizations; respondents from the for-profit organization were 65% male, whereas respondents from the not-for-profit organization were 25% male. Finally, we found that in the for-profit organization, 4% were clerical workers, 69% were individual contributors, and 27% were managers. For the not-for-profit organization we found that 43% were clerical workers, 16% were individual contributors, and 41% were management.

Table 1 | Demographic profile of the respondents by company type.

Variable	*Mean (SD)*
Manufacturing (for profit)	
Job tenure	2.32 (0.94)
Work experience	3.49 (0.83)
Salary	2.89 (0.79)
Gender (male)	0.65
Role in Organization	
Clerical[a]	0.04
Individual contributor [a]	0.27
Management[a]	0.69
Community college (not-for-profit)	
Job tenure	2.73 (0.95)
Work experience	3.93 (0.25)
Salary	2.62 (0.78)
Gender (male)[a]	0.25
Role in Organization	
Clerical[a]	0.43
Individual contributor[a]	0.41
Management[a]	0.16

Manufacturing n = 158; community college n = 73.
[a] *For categorical variables the mean is proportion in category.*

MEASURES

Psychological climate, POS, and organizational engagement survey items used a five-point Likert scale, ranging from strongly disagree to strongly agree. We measured EI using a seventy-two item survey (discussed later). The climate factors were assessed with the PNEA Survey developed by Boyatzis based on earlier work (Boyatzis, 2008) and consisted of shared personal vision (eight items; e.g., "I feel inspired by our vision and mission" and "Management emphasizes a vision for the future") and shared positive mood (five items; e.g., "This is a great place to work" and "Working here is a joy"). Alpha reliabilities for the two scales were as follows: *shared personal vision* (0.89) and *shared positive mood* (0.87).

The POS scale contained three items adapted from Saks' (2006) scale. POS assesses the degree to which employees feel that the organization supports who they are [i.e., "My organization really cares about my well-being, "My organization strongly considers my goals and values," and "My organization shows little concern for me" (reverse scored)]. The resulting POS scale had an alpha reliability of 0.88.

Using Saks (2006) engagement instrument, we retained four items to measure *organizational engagement* (e.g., "Being a member of this organization is exhilarating for me" and "Being a member of this organization is captivating"). The resulting scale had an alpha reliability of 0.90.

The EI variables were derived from the *emotional and social competence inventory* (*ESCI*), a 360-degree (or multi-rater) assessment (Boyatzis and Goleman, 2007). The test has shown desirable reliability and validity (Wolff, 2007), good model fit, and convergent and divergent validity at the scale level in a sample of more than 67,000 test takers (Boyatzis and Gaskin, 2010). A variety of performance and job outcome validation studies are reviewed for this test and its earlier versions in Boyatzis (2009).

The *ESCI* is designed for an individual employee's manager(s), peers, and subordinates to rate the employee on 72 items. The survey items measure 12 distinct emotional and social competencies. As noted earlier, we invited study participants to select up to seven peers to rate them.

For the current study, we only used the EI scales. Because we were assessing aspects of the interpersonal climate through the perception of shared vision and POS, we believed we would likely have some overlap with the social intelligence behaviors and risk multicollinearity with the personal vision, POS and engagement measures. As a result, we chose to focus on the EI competencies rather than the SI competencies in our study. Further, when reviewing prior research, we concluded that among the EI competencies, emotional self-awareness seems to be predominantly an internal observation. This would make others' observation of a team member's emotional self-awareness more of a projection or attribution based on features other than observed behavior.

Conceptual logic based on past EI research (e.g., Taylor and Hood, 2011) indicates that these dimensions could be further

combined into EI variables. We combined *adaptability/positive outlook*, *achievement orientation,* and *emotional self-control* to form a measure of EI. The resulting scale had an alpha reliability of 0.89.

To test the research hypotheses, we estimated path models using AMOS with simultaneous estimation of engagement. We tested the moderation hypotheses (i.e., H4–H6) using interaction terms.

Because there has been little attention devoted to the antecedents of engagement, there is not much theory to suggest which control variables may be most important. Given engagement is strongly connected to how one feels with their experience at work, it made sense for us to control for the type of organization one works for (for-profit versus not-for-profit), the type of work one does (e.g., clerical versus managerial), and the amount of time in one's current role. We also chose to control for how much money an employee earns since one report noted that pay is a key driver of employee engagement (Aon Hewitt, 2013). Finally, we also empirically examined the relevance of gender and years of work experience as potentially important control variables, suggested by Cohen et al. (2003). In sum, all estimated models control for work experience, job tenure, salary, job type, organizational type, and gender.

Bivariate correlations, means and standard deviations for the analysis variables are presented in **Table 2**.

To further ensure the validity of the measures, we conducted a confirmatory factor analysis. The measurement model had 23 manifest variables specified as indicators of five latent constructs. All factor loading paths were positive and significant at the 0.001 level. Our measurement model for subsequent analysis had a good fit (Chi square 470, 219 df, IFI 0.930, CFI 0.929, RMSEA 0.071). The model had a PCFI of 0.737, indicating that the model was parsimonious and had acceptable fit.

RESULTS

Table 3 displays the results of our hypotheses testing. In all models, we added interaction terms separately to the model to aid interpretation and reduce concerns of multicollinearity.

Model 1 in **Table 3** is the main effects model (i.e., no interaction terms added). The main effects model allowed us to determine which variables have direct effects on engagement. As reported earlier, prior research (Ravichandran et al., 2011), has not found EI to have a direct effect on engagement. We found a similar result in that model 1 shows EI ($b = -0.06$, $p > 0.05$) does not have a significant association with organizational engagement. On the other hand, hypotheses 1, 2, and 3 are supported in that shared personal vision ($b = 0.24$, $p < 0.01$), shared positive mood ($b = 0.46$, $p < 0.01$), and POS ($b = 0.24$, $p < 0.01$) all have positive, significant associations with engagement. Finally, Model 1 explains 54% of the variability in organizational engagement.

Model 2 adds the interaction terms of EI*shared personal vision to the model. **Table 3** shows that EI*shared personal vision has a significant positive association with organizational engagement ($b = 0.31$, $p < 0.01$). This coefficient suggests that increasing levels of EI amplify the relationship between shared vision and engagement; thus, we find support for hypothesis 4. **Figure 1** shows this interaction graphically. As can be seen from **Figure 1**, the slope for individuals with high levels of EI is steeper than the slope for individuals with lower levels of EI. In fact, **Figure 1** indicates that individuals with high EI and low shared vision are less engaged in their organizations; yet, individuals with high EI and high shared vision are more engaged.

Model 3 in **Table 3** adds the interaction terms of EI*shared positive mood to the model. Model 3 shows that EI*shared positive mood does not have a significant association with organizational engagement ($b = 0.01$, $p > 0.05$). As a result, we rejected hypothesis 5.

Model 4 in **Table 3** adds the interaction terms of EI*POS to the model. EI*POS does have a significant positive association with organizational engagement ($b = 0.16$, $p < 0.05$). This coefficient suggests that increasing levels of EI amplify the relationship between POS and engagement. As a result, we accepted hypothesis 6. **Figure 2** shows this interaction graphically. As can be seen from **Figure 2**, the slope for individuals with high levels of EI is steeper than the slope for individuals with lower levels of EI. **Figure 2** indicates that individuals with high EI and low POS are less engaged in their organizations; yet, individuals with high EI and high POS are more engaged.

In sum, we found that peer-rated EI moderates the association of shared personal vision and POS with organizational engagement but does not do so with shared positive mood.

DISCUSSION

THEORETICAL CONTRIBUTIONS

Our primary contribution is we have confirmed POS's impact on engagement and have introduced two additional antecedents (shared personal vision and shared positive mood) to engagement worthy of additional further research. We have extended prior

Table 2 | Means, standard deviations, and correlations for the studied variables[a].

	Mean	SD	1	2	3	4
(1) Shared personal vision	4.02	0.73				
(2) Shared positive mood	4.37	0.68	0.61**			
(3) Organization engagement	3.80	0.84	0.59**	0.65**		
(4) Perceived organizational support	3.99	0.97	0.61**	0.54**	0.59**	
(5) Emotional intelligence	4.20	0.48	0.23**	0.29**	0.20**	0.27**

[a] *n = 231; **p < 0.01.*

Table 3 | Unstandardized regression coefficients for organizational engagement.

	Model 1	Model 2	Model 3	Model 4
Company	−0.02 (0.11)	−0.02 (0.11)	−0.02 (0.11)	−0.03 (0.12)
Gender	0.01 (0.09)	0 (0.09)	0.01 (0.09)	0 (0.09)
Clerical	0.11 (0.14)	0.06 (0.14)	0.11 (0.14)	0.08 (0.14)
Manager	0.19 (0.10)	0.19 (0.10)	0.19 (0.10)	0.20 (0.10)*
Work experience	0.03 (0.07)	0.04 (0.07)	0.03 (0.07)	0.04 (0.07)
Time in current role	0.06 (0.05)	0.08 (0.04)	0.06 (0.05)	0.08 (0.05)
Salary level	−0.01 (0.07)	−0.02 (0.07)	−0.01 (0.07)	−0.02 (0.07)
Emotional intelligence	−0.06 (.09)	−1.29 (0.44)**	−0.09 (0.48)	−0.68 (0.29)*
Shared personal vision	0.24 (0.08)**	−1.08 (0.47)*	0.24 (0.08)**	0.25 (0.07)**
Shared positive mood	0.46 (0.08)**	0.46 (0.08)**	0.43 (0.46)	0.46 (0.08)**
Perceived organizational support	0.24 (0.05)**	0.26 (0.05)**	0.24 (0.05)**	−0.43 (0.31)
EI × shared personal vision		0.31 (0.11)**		
EI × shared positive mood			0.01 (0.11)	
EI × perceived organizational support				0.16 (0.07)*
Constant	−0.17 (0.44)	4.87 (1.83)**	−0.06 (1.96)	2.26 (1.19)
R^2	0.54	0.56	0.54	0.55

*n = 231. Standard errors are in parenthesis. *p < 0.05; **p < 0.01.*

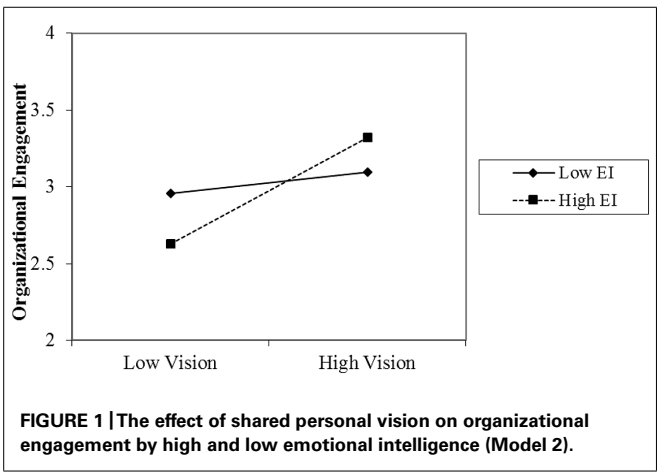

FIGURE 1 | The effect of shared personal vision on organizational engagement by high and low emotional intelligence (Model 2).

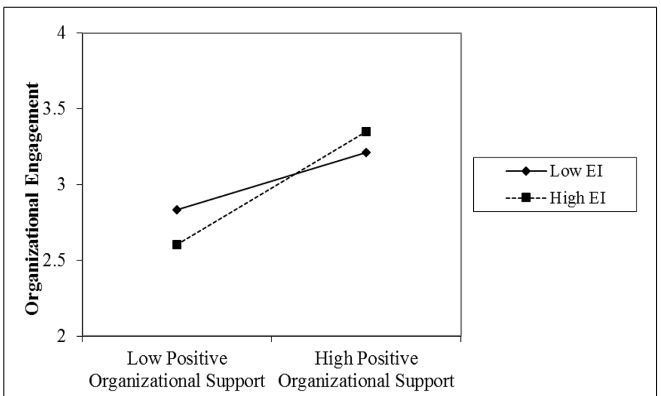

FIGURE 2 | The effect of perceived organizational support on organizational engagement by high and low emotional intelligence (Model 4).

theory by considering the association individual characteristics (EI), POS, and psychological climate factors (i.e., shared personal vision and shared positive mood) have with organizational engagement. Our research contributes to the understanding of engagement by revealing shared vision and shared positive mood have positive, direct associations on engagement. As an additional highlight of our results, this is the first study, to our knowledge, that presents EI as having an amplifying relationship between our predictor and outcome variables. Most prior studies on EI have only explored its role as an independent or dependent variable.

Our research emphasizes engagement's role as a construct that is self-driven. This can be seen from Kahn's (1990) original definition of employee engagement: "the harnessing of organization members' selves to their work roles" (p. 694). Even the construct we drew upon for our measure denotes engagement in a similar way: the connection one feels in his or her role as an organizational member. This assesses the degree to which *individuals* are "attentive and absorbed" in their work (Saks, 2006). The self-awareness and self-management dimensions of EI work with psychological climate factors to activate an employee's ability to harness the self to one's organization, but it seems EI does not do that by itself. Although EI alone is about awareness and management of self, it appears insufficient to directly harness the self to one's organization.

As we noted at the start of this paper, very limited work has been done to examine the relationship between EI and engagement. We found only one study that explored these relationships (Ravichandran et al., 2011). Although the researchers used a different

measure of EI (i.e., Schutte et al., 1998) and a different measure for engagement (i.e., Schaufeli et al., 2006) than the measures used in this study, they too did not find a significant direct effect between EI and engagement. EI may drive job performance (O'Boyle et al., 2011), but, as we found, it does not seem to directly drive engagement. With only these two studies assessing the direct association of EI on engagement, we see the relationship between engagement and EI as an important area for further research.

We also proposed EI would interact with psychological climate factors such that EI would have an amplifying effect on the relationship between climate factors and engagement. In fact, our results indicate that for organizational engagement, shared vision indeed has an amplifying pattern whereby when individuals have high EI, shared vision strengthens the level of engagement. Those with high EI would, as our data show, be dissatisfied and therefore less engaged in a relational climate with low shared vision. In sum, EI is an important moderator in amplifying the association of shared vision with organizational engagement. As noted earlier, Boyatzis (2009) and others (Goleman et al., 2002) defined EI as the ability to understand self and to use that understanding to effectively manage self. It is conceivable that EI enables greater clarity and understanding of climate factors and assists potentially distant climate factors, like shared vision, to become internalized and valued such that the interaction with EI produces greater organizational engagement.

Perhaps individuals use their EI to clarify and make use of their shared personal vision to strengthen their commitment to and connection with their organization. Organizational engagement items such as "one of the most exciting things for me is getting involved with things happening in this organization," connote a connection beyond the functional area of one's job. Therefore, it is understandable to see a significant and positive relationship between organizational engagement and the interactions of EI with POS and shared vision. EI may help the self (with its values, goals, aspirations, hopes, etc.) clarify how the vision and purposes of the organization relate to the self and to then, in turn, increase the connection one feels to the organization.

For years organizations have created vision and mission statements and research has supported the importance of their use in organizations (e.g., Baum et al., 1998); indeed, research has shown that vision statements are related to organizational growth and performance (e.g., Baum et al., 1998; Kantabutra and Avery, 2010). One of the great leadership challenges is how to help employees connect with an organization's vision such that the vision becomes shared and intrinsically accepted (Kouzes and Posner, 2007). Our findings suggest that a key to that internalization of the shared vision is the level of EI the employees possess. As organizations invest in the EI development of their employees they are also likely enabling those employees to further link their personal vision with the vision of the organization to in turn increase employee engagement. Similarly, through its self-knowledge building capability, EI helps employees realize what type of support they want and need from an organization. In doing so, EI amplifies the association between POS and engagement. Without high EI, employees may struggle to know themselves and manage themselves effectively (e.g., via decisions they make about their jobs and careers) enough to recognize what type of organizational support is most important to them. If you don't know what you value and what goals are important to you, you are less likely to know if the organization you work for cares about your values and goals.

Finally, shared positive mood had the strongest direct association on organizational engagement, but it did not have an interactive effect with EI on engagement. Employees' shared positive mood is a driver that harnesses the self to the employees' work in positive ways. Thus, it is no surprise to find that when shared positive mood is high, employees feel more engaged. As noted earlier, Wijhe et al. (2011) also found a strong relationship between employees' shared positive mood and their level of engagement. This is clearly an important area for additional research.

In terms of the insignificant association between EI and mood and engagement, prior research has argued that mood, in contrast to emotions, "are weaker or diffuse, last longer,. . .and tend to elicit a wider range of cognitive and behavioral responses than do emotions because they are not targeted toward specific causes" (Rhee and Yoon, 2012, p. 224n1). In contrast, emotions (1) work to provide us specific information about what our goals are and where we stand in achieving our goals and (2) provide "amplification of goal-directed motivation" (Batson et al., 1992, p. 308). EI is focused on being aware of and managing *specific* emotions. Our items for shared positive mood assessed general feeling states from individuals about where they work (e.g., "I enjoy working here," "Working here is a joy," etc.). As a relational construct, EI may do little to directly influence the diffuse opinions about work.

LIMITATIONS

Even though the findings in our study generally support five out of six of the hypotheses, the study is not without limitations that should be considered in the design of future research. First, this study's sampling procedure was not random, opening the possibility of selection bias, as we have no way of knowing if the responses to our survey are different than those that chose not to complete the survey. Selection bias reduces the external validity of this research. Further limiting the external validity of this research is the ability to generalize differences between for-profit and not-for-profit organizations due to our sampling strategy. That is, we did not take a sample of for-profit and not–for-profit organizations but chose two that were willing to participate. Differences found between these organizations could be due to specific characteristics of these two organizations rather than differences between the for-profit and not-for-profit sectors.

Second, due to the large number of questions being asked of each respondent, we were unable to ask a full set of demographic questions (e.g., educational attainment). This characteristic of the data collection could lead to omitted variable bias if an unobserved factor is related to our independent and dependent variables.

Third, upon examination of frequency tables, histograms, box plots and distributional statistics to determine the shape of the distributions of the individual items, we found that items comprising the engagement and climate scales were not normally distributed around their mean, rather most items

in this survey showed distributions with negative skewness and high kurtosis values, a pattern caused by many respondents answering on the high end of each item. Given the non normal distributions, we will interpret inferential results (i.e., any significant tests) with caution, and it should be noted that the limited range and variance might under estimate true population associations among the variables in our model.

Finally, a common method bias analysis indicated that there was a possibility of common method bias. We suspect this is related to the non-normal variable distributions. Given this possibility, we again interpret results with caution and view it as a limitation of this research. Analyses of path models accounting for common method bias were estimated and showed no substantive differences from the results presented above.

IMPLICATIONS FOR FUTURE RESEARCH

Our research findings serve as an invitation toward a new agenda in vision, POS, EI, and engagement research. As an individual characteristic, EI plays an important role in the relationship between engagement, POS, and shared vision. We see this as a vital area for further study. As others have done recently (e.g., Rich et al., 2010), our conceptualization of engagement is one of engagement as a source of motivation.

Future research should seek to understand how shared vision, mood, and POS build on the relational aspects of engagement. In this study we examined EI. Social intelligence relies on behaviors that help people understand others and manage others effectively. Engagement has relational qualities given an organization's culture is a composite of the shared values and vision of many. It would be interesting to see if social intelligence also plays an amplifying role in its association with the variables used in this study.

We join the call for additional research on the antecedents of engagement, but our work has called attention more directly to the importance of socio-psychological factors that may drive engagement. More work is needed to understand EI as a moderator to the relationship between shared vision and POS and engagement. The importance and impact of positive emotions in organizational life is a growing area of organizational scholarship (Cameron and Spreitzer, 2012). Positive emotion inducing constructs like shared vision and shared mood and individual characteristics like EI should be further investigated given the role they play in engagement. For example, as we noted earlier, to date no one has studied the potential amplifying role EI may have with shared vision on engagement. Research examining these relationships with larger more diverse organizational samples would be a particularly important elaboration of the analyses presented here.

Leaders must be concerned with engagement in the workforce. Having a clear awareness of engagement levels is a useful predictor of behavior and performance. Future research should continue to examine engagement as an important aspect of organizations. The current study found interesting differences in the determinants of engagement (vision, mood, and POS versus EI) suggesting different processes might lead individuals to be engaged to their organizations. Future research should attempt to clarify why these processes are different and what this means for managers trying to lead their workforce in an optimum way.

IMPLICATIONS FOR PRACTICE

The purpose of our study was primarily focused on testing empirical relationships between individual characteristics, organizational support, and psychological climate factors and engagement. On the other hand, our findings do lend themselves to several practical implications. First, one of the challenges in organizations today is how to help employees believe in and become loyal to the organizational vision, see their job as important, and trust that the organization supports its employees (Kouzes and Posner, 2007). Certainly the level of authenticity of management and whether their efforts to garner employee trust and commitment are at the expense of their employees or in support of them matters, but at a time when employee loyalty is reportedly slipping worldwide (Brotherton, 2012), our findings offer help. We find that EI assumes an amplifying role for shared vision and engagement. Therefore, organizations that work to hire employees with high EI and to foster EI development in their organizations will strengthen the ties between important employees' vision, the degree they feel supported by the organization, and their level of engagement to the organization.

Next, our research also exposes the importance of fostering the emotional and socio-psychological factors of climate. Our findings reveal empirical evidence of their impact on engagement at a time when the relationship between engagement and performance are becoming well documented (e.g., Macey et al., 2009; Rich et al., 2010). Therefore, organizations should work to hold up these climate factors as important psychological elements as they do the more cognitive-based constructs like strategy, forecasting, planning, and budgeting, for example. In doing so, organizations will begin to leverage their employees engagement as an important competitive advantage.

CONCLUSION

This study highlights the importance of shared personal vision, shared positive mood, and POS as key areas for further research on engagement. This study also contributes to our growing understanding of EI by displaying EI's amplifying effect on shared vision and POS in relation to engagement. We now invite others to join the call for understanding these and other important antecedents to engagement.

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 25 August 2014; accepted: 31 October 2014; published online: 18 November 2014.

*Citation: Mahon EG, Taylor SN and Boyatzis RE (2014) Antecedents of organizational engagement: exploring vision, mood and perceived organizational support with emotional intelligence as a moderator. Front. Psychol. **5**:1322. doi: 10.3389/fpsyg.2014.01322*

This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology.

frontiers in Psychology

ORIGINAL RESEARCH
published: 10 June 2015
doi: 10.3389/fpsyg.2015.00623

Emotional and social competencies and perceptions of the interpersonal environment of an organization as related to the engagement of IT professionals

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There is a dearth of research focused on the engagement of information technology (IT) professionals. This study analyzed the relationship between emotional and social competencies and the quality of the IT professional's perceptions of the interpersonal environment in an organization as they relate to employee engagement. Validated instruments were used and data was collected from 795 IT professionals in North America to quantitatively analyze the relationship between emotional and social competencies, role breadth self-efficacy (RBSE), with the quality of the IT professional's perceptions of the interpersonal environment, and those perceptions with employee engagement. The study results indicate that specific emotional and social competencies and RBSE relate differently to the quality of the perceptions of the interpersonal environment. The study also reveals how the quality of the IT professional's perceptions of the interpersonal environment relates to how much they engage in the organization. The findings indicate that the relationship between achievement orientation and the perceived interpersonal environment was positive and the relationship between influencing others and the perceived interpersonal environment was negative. Understanding such relationships offers much needed insight to practitioners and can benefit organizations that wish to increase the engagement of their IT professionals. The findings also can support practitioners to more effectively select and develop talent with the desired motives and traits. By doing so, organizations can experience increased employee satisfaction, engagement, and retention, resulting in higher productivity, quality, and profitability.

Keywords: engagement, emotional and social competencies, interpersonal environment, shared vision, role breadth self-efficacy

OPEN ACCESS

Edited by:
Kylie Rochford,
Case Western Reserve University, USA

Reviewed by:
Cary Cherniss,
Rutgers University, USA
Loren R. Dyck,
University of La Verne, USA

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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *09 October 2014*
Accepted: *27 April 2015*
Published: *10 June 2015*

Citation:
Pittenger LM (2015) Emotional and social competencies and perceptions of the interpersonal environment of an organization as related to the engagement of IT professionals. Front. Psychol. 6:623. doi: 10.3389/fpsyg.2015.00623

Introduction

While it is widely agreed that employee engagement is critical to effectively implement strategic goals (Becker and Huselid, 2006), empirical research consistently claims that today's workers are far from fully engaged and the 'engagement gap' is estimated to cost U.S. businesses $300 billion annually in lost productivity (Kowalski, 2003; Bates, 2004; Johnson, 2004). Towers Watson (2012) found that two-fifths of today's workers are detached, and a quarter

completely disengaged, resulting in significant risk to an organization's productivity and performance goals. Information technology (IT) professionals fare the worst, with only 26% reporting full engagement and 22% admitting to outright disengagement (Treadwell and Alexander, 2011). IT's performance is plagued by missed deadlines, overrun budgets, and unrealized investments (Ellis, 2009; Johnson, 2009). This begs the question if the high level of disengagement of IT workers is contributing to the numerous performance deficits in the industry and if so, how can IT worker engagement be increased?

The nature of IT work has changed significantly over the past two decades as organizations moved toward flatter, team-based and relational organizing models. This shift in work demands that IT professionals develop more than technical skills. The literature on IT performance has largely ignored the effects of investing in the soft skills (interpersonal skills and teamwork) that IT people need to effectively operate in this new environment (Hitt and Brynjolfsson, 1994; Brynjolfsson and Hitt, 2000). Without these softer skills, it is little wonder why IT professionals are not fully engaged and appear to be working below their potential. Employee engagement is defined as a positive, work-related state of mind exhibited by high levels of energy, dedication, persistence, and happy absorption (Schaufeli et al., 2002). In line with Schaufeli et al.'s (2002) *theory of engagement,* engagement is not conceptualized as a momentary and specific state, rather "a ... persistent and pervasive affective-cognitive state not focused on any particular object, event, individual, or behavior." This research was designed to understand which emotional and social competencies and organizational factors relate to the engagement of IT professionals. The research model was tested on a sample of 795 North American IT professionals using structural equation modeling. The paper begins with a review of the pertinent theoretical foundations and an explanation of the constructs used to articulate a research model and related hypotheses on employee engagement. This is followed by an examination of the research methods deployed, and finally, an analysis and discussion of the findings, limitations, and implications for future research and practice.

Theory and Hypotheses

Employee Engagement as Absorption, Dedication, and Vigor

In line with the conceptual definition presented earlier, Schaufeli et al.'s (2002) sub- constructs of engagement (absorption, dedication, and vigor) were used as the mediating variables in the research model. Absorption is defined as a state in which a person is "fully concentrated and deeply engrossed" (Schaufeli et al., 2002, p. 75) in their work. Dedication captures a "sense of significance, enthusiasm, inspiration, pride, and challenge" (Schaufeli et al., 2002, p. 74) and both an emotional and cognitive involvement in a person's work. Finally, vigor is defined as "high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence even in the face of difficulties" (Schaufeli et al., 2002, p. 74).

Interpersonal Environment as an Antecedent to Engagement

The interpersonal environment is considered to be a subset of the organizational environment – defined as the employee's perception of the practices, policies, and processes of an organization (Ostroff et al., 2003). Research has found both direct (Corporate Leadership Council, 2004) and indirect (Iacono and Weisband, 1997; Jarvenpaa et al., 1998) relationships between the organizational environment and employee engagement, and closely related, employee commitment (Eisenberger et al., 1986). However, less research has focused specifically on the importance of the interpersonal environment. This paper claims that there is a relationship between the IT professional's perception of the interpersonal elements of the organizational environment and employee engagement.

Boyatzis (2013) claims that the interpersonal environment in an organization is comprised of three dimensions: shared vision, compassion, and overall positive mood. These three dimensions were used in the research model. Shared vision is defined as the degree to which the people in a relationship perceive that they have a shared vision, or desired image of the future. It is proposed that shared vision will positively relate to engagement because when employees have clear direction and confidence in themselves to achieve that vision they are more likely to be engaged in their work. Specifically, the shared nature of a vision will elicit feelings that support the three sub constructs of engagement: excitement and enthusiasm for their work (dedication), a sense of ownership and investment in their work (vigor), and increased absorption in their daily activities.

Compassion is concerned with the degree to which the people in a relationship perceive that they care for and trust each other. Seppala et al. (2013) claim that compassion boosts coworkers' commitment to the workplace, and level of engagement with their job, resulting in higher productivity levels. While Haidt (2012) states that to be fully engaged in your work and those you are working with, interpersonal distractions such as a lack of trust and care must be alleviated. Thus, when employees are emotionally invested in the success of each other as well as the organization, they will be more engaged. Boyatzis et al. (2013) support this arguing that compassion toward others has a psychological and physiological benefit for both the giver and the receiver. Overall positive mood refers to the degree to which the people in a relationship perceive that they shared a positive view of the present and future. The benefits of such positivity are now well established in social science literature. In particular, positive emotions widen people's outlook and scope of attention, altering people's mindsets (Fredrickson and Losada, 2005). In sum, it is hypothesized that:

> *Hypothesis 1: There is a positive relationship between the IT professional's perception of shared vision, compassion and overall positive mood, three sub-constructs of the interpersonal environment and absorption, dedication and vigor, three sub-constructs of employee engagement.*

Influence of Emotional and Social Competencies on the Interpersonal Environment

Understanding that the organizational environment influences employee engagement is of little use if we do not know how to create such an environment. As discussed earlier, the changing nature of IT work demands that IT workers develop both technical (hard) skills and interpersonal (soft) skills in order to perform at their full potential. Prior research has not identified what specific soft skills are important in the technology organization environment. More specifically, to create an interpersonal environment characterized by shared vision, compassion, and overall positive mood that increases engagement, it is the soft skills rather than the technical skills that will be critical in doing so (Saks, 2006). Thus, in this section, it is hypothesized that a number of specific emotional and social competencies will influence the IT professional's perception of the organizational environment, and consequently employee engagement.

Boyatzis (1982) defines emotional and social competencies as knowledge, motives, traits, attributes, and skills that are causally related to effective or superior performance in any given job or role. According to Boyatzis' model, highly effective workers must not only possess intellectual intelligence, but also emotional intelligence. Boyatzis (2001) and Boyatzis et al. (2001/2007) have developed a comprehensive inventory of emotional competencies (self-awareness and self-management), and social competencies (social awareness and relationship management) that together can be used to measure the higher order construct of emotional intelligence. The majority of studies that have used this measure report findings as composites (see for example Boyatzis, 2009; Boyatzis et al., 2012; Mahon et al., 2014; Quinn, 2014), While this approach is useful for understanding overarching relationships between emotional intelligence of various outcome variables, it limits our understanding of which specific competencies are most important, and rests on the assumption that all competencies are required in all environments. To examine this assumption, this study on IT professionals was designed to collect a sufficiently large sample to allow for examination of the relative impact of separate competencies. The competencies included in Boyatzis' emotional and social intelligence model are summarized in **Table 1**.

In the following section, the specific emotional and social competencies that are believed to influence the IT professional's perception of shared vision, compassion, and overall positive mood respectively of IT professionals will be examined.

Emotional Intelligence Antecedents of Shared Vision of IT Professionals

Adaptability

Today, organizations are dynamic, complex, and always changing. New leaders come and go and shared visions for the firm change with the new leaders. Such change leads to turbulence, which makes it more difficult to create and maintain a shared vision. Similar to this is the IT organization, which is arguably the fastest changing due to its ever-emerging technologies. IT professionals are both the initiators and recipients of these changes, thus their everyday work requires high levels of adaptability and cognitive flexibility. IT professionals who are high in adaptability are better able to cope with change and turbulence. Therefore, it is expected that IT professionals with high adaptability will perceive a positive relationship to shared vision.

Empathy

Information technology professionals are often called nerds, geeks, and other less than complimentary labels. Most are introverts, who are sensitive about their lack of fitting in with others. As a result, they have empathy for others and seek to work with and for those who sense their feelings and perspectives. Pavlovich and Krahnke (2012) claim that empathy enhances connectedness, which occurs through altruistic actions, which promotes pleasurable feelings and harmony and a more expansive, united, state of mind (Pavlovich and Krahnke, 2012). Thus, it is expected that empathy will be perceived to be positively related to shared vision.

TABLE 1 | Emotional and social intelligence competencies.

Competency cluster	Competency	Definition
Self awareness	Emotional self awareness (ESA)	Recognizing how our emotions affect our performance and using this is a guide to behavior.
Self management	Achievement orientation	Striving to meet or exceed a standard of excellence.
	Adaptability	Flexibility in handling change.
	Emotional self control	Keeping disruptive emotions and impulses in check.
	Positive outlook	Persistence in pursuing goals despite obstacles and setbacks.
Social awareness	Empathy	Sensing others' feelings and perspectives and taking an active interest in their concerns.
	Organizational awareness	Reading a group's emotional currents and power relationships.
Relationship management	Conflict management	Negotiating and resolving conflict.
	Coach and mentor	Taking an active interest in others' development needs and bolstering their abilities.
	Influencing others	Having a positive impact on others: persuading or convincing others.
	Inspirational leadership	Inspiring and guiding individuals and groups.
	Teamwork	Working with others toward a shared goal.

Source: adapted from Goleman et al. (2013).

Organizational Awareness

The IT organization exists to support the functioning of the enterprise and strategic business objectives. The IT professional serves the business and is deeply ingrained in its emotional currents and power relationships. Organizational awareness enables an individual to assess who is able to influence whom, allowing them to appeal to the appropriate person if influence is necessary. IT professionals interact daily with those of influence and in power to understand how technology can provide value. Thus, it is assumed that organizational awareness will be perceived to be positively related to shared vision.

Emotional Self-Awareness

Emotional self-awareness refers to a person's ability to recognize and understand his or her own emotional responses. The ability to understand and connect with others first requires an understanding of self and the ability to regulate emotion. Emotion regulation refers to "the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (Gross, 1998, p. 275). The creation of a shared vision requires an ongoing negotiation between self and others. It is through this negotiation over time that shared understanding and ultimately, a shared vision emerges. In order to be emotionally present in these negotiations, individuals must understand and have control over their own emotions. Without such an understanding, a person cannot fully engage and respond to those around them. Thus, it is expected that emotional self-awareness will be positively related to shared vision.

Achievement Orientation

An unconscious desire to do better was studied by David McClelland and his colleagues for decades and is called the need to achieve (McClelland, 1961). Although achievement orientation is related to excellence in management and leadership (Boyatzis, 1982; Spencer and Spencer, 1993; Goleman, 1998), it has also been associated with individualistic careers where daily feedback on one's own performance is clear, like in sales, engineering and IT (McClelland, 1961; Spencer and Spencer, 1993). Such a disposition focused on individual achievements and activities that bring individualized feedback is likely to detract from focusing on people, relationships and shared emotions. Meanwhile, an IT organization operates on the foundation of teams and the individual outputs of IT professionals are typically integrated with outputs of their peers and others in the business. Thus, to be most effective, the individual's tasks in IT should support common or shared goals, and by extension a shared vision. At the same time, working with others in the context of a shared vision should help provide a meaningful context for the individualistic activity of the IT professional. This shared vision helps the IT professional understand how their individual work contributes to the firm's success. Given this, it is expected that achievement orientation will be linked to effectiveness through shared vision.

Conflict Management

Information technology professionals lack interpersonal skills and creating a shared vision takes patience, strong interpersonal behaviors, negotiation, and even conflict management skills. It is expected that the ability to negotiate differences to arrive at unified solutions is particularly pertinent in the early stages of vision formation. Conflict management requires open communication, which is atypical of the introverts that populate IT. It is anticipated that conflict management to be perceived by IT professionals to be negatively related to shared vision.

Influencing Others

Information technology organizations are dominated by introverted professionals who have difficultly communicating and take action based on what they think rather without considering how others feel (Capretz, 2002). Efforts to communicate and attempts to influence others may backfire in reality and detract from the support of a shared vision, rather than the act of promoting it. Thus, it is expected that influencing others will be perceived to be negatively related to shared vision.

In sum, the following relationships between emotional and social competencies and shared vision are hypothesized:

H2: Individual emotional and social competencies of adaptability, empathy, organizational awareness, emotional self-awareness, and achievement orientation will positively and conflict management and influencing others will negatively affect the IT professional's perception of shared vision.

Emotional Intelligence Antecedents of Compassion of IT Professionals

Compassion in organizations makes people feel seen and known; helps them feel less alone, and positively affects emotional connections between people at work (Frost et al., 2000). Compassion exists when individuals of a system collectively notice, feel, and respond to pain experienced by others (Kanov et al., 2004). Since compassion is associated with a range of positive attitudes, behaviors, and feelings in organizations (Dutton et al., 2002; Lilius et al., 2003), investigating how emotional and social competencies might affect compassion is important and should be examined (Boyatzis and Goleman, 1996; Boyatzis, 2001; Boyatzis et al., 2001/2007).

Adaptability

Compassion requires people to notice, empathize, and act on the needs of others (Boyatzis et al., 2013). This requires cognitive flexibility in order to recognize that situations in which one person may be in need are not necessarily those in which another may be in need. This recognition is the first step in compassion – without it, one cannot be compassionate. Upon noticing another in need, a person needs to act on that need. Due to the cognitive flexibility of adaptable individuals, they are able to consider wide range of potential actions, which increases the likelihood that they are able to respond appropriately. Adaptable individuals are also

more capable of changing their own behavior or circumstances to accommodate the needs of others (Aronoff et al., 1994). Thus, it is anticipated that there is a positive relationship between adaptability and compassion.

Empathy

Empathy is considered as a distinct, yet closely connected construct to compassion (Kanov et al., 2004). Compassion is considered to be a broader construct than empathy, requiring a deeper connection to the person in need (Dietze and Orb, 2000). While empathy primarily involves noticing and feeling the need of another, compassion takes this a step further by acting on this need (Kanov et al., 2004; Boyatzis et al., 2013). Prior research has linked empathy to increase helping behavior (Betancourt, 1990). Since IT professionals are seen as sensitive and caring introverts, it is anticipated that IT professionals will perceive that empathy and compassion are positively related.

Organizational Awareness

Compassion is commonly conceptualized as a three-part process consisting of noticing, feeling and responding to another's needs (Kanov et al., 2004). While organizational awareness may increase the ability of a person to notice the need of another by paying attention to the emotional currents in the organization, the key role in organizational awareness in increasing perceived compassion in organizations is in the ability to respond. To be successful, IT professionals must understand the formal and informal power distributions and networks in and between organizations and how to use this to gain access to resources to respond to the needs of the business. Therefore, it is expected that organizational awareness will be perceived to have a positive relationship with compassion.

Emotional Self-Awareness

In order to detect the need or suffering of another person, we are often forced to rely on our ability to read a person's emotional state. Further, in making sense of the observed emotions or behavior of a colleague, we rely on our own experience (Weick, 1995) to understand emotional responses and reactions to assist us to notice and respond to the needs of others. Since IT professionals are introverted and very much in touch with their emotions, it is anticipated that emotional self-awareness will be perceived to have a positive relationship with compassion.

Achievement Orientation

Personality tests reveal that IT professionals are more achievement oriented than the general population (Woodruff, 1980; Wynekoop and Walz, 1998) and gain recognition through their expertise (Capretz, 2002). The work of IT is often innovative and comes with risk of failure. Since IT professionals identify closely with the work that they do (Pratt et al., 2006), they are more individualistic and therefore less focused on others. Given this, it is expected that achievement orientation will be perceived to negatively relate to shared compassion.

Conflict Management

Information technology professionals often find themselves in conflict with those in business units over approaches to development and/or requirements gathering. The ability to manage conflict in a positive way reduces the pain experienced by those involved in the conflict, and thus will likely increase perceptions of shared compassion. Compassion does not presume the absence of conflict; rather, a person with good conflict management skills can use compassion to reduce the intensity of the conflict. Thus, it is hypothesized that conflict management will be perceived to be positively related to compassion.

Influencing Others

Influencing others is the use of power to get others to comply with one's wishes or desires (Boyatzis, 1982, 2009; Spencer and Spencer, 1993). The use of this competency will likely occur when there is a power distance (i.e., boss and subordinate) or an influence task (i.e., selling something to another person). As a result, it is unlikely that more use of Influencing Others competency would be related to closer relationships. When added to the observation that the introverted IT professional is energized by an internal world of ideas, not emotion and not communicating with others (Eve-Cahoon, 2003), it is expected that influencing others will be negatively related to the IT professional's perception of shared compassion.

In sum, the following relationships between emotional and social competencies and compassion are hypothesized:

H3: Individual emotional and social competencies of adaptability, empathy, emotional self-awareness, achievement orientation, conflict management, and organizational awareness will positively and influencing others will negatively affect the IT professional's perception of compassion.

Emotional Intelligence Antecedents of Shared Positive Mood of IT Professionals

There is a plethora of literature claiming that one's mood at work affects behavior. For example, George (1991) found that a positive mood at work fosters pro-social organizational behaviors. In the next section, existing theory will be discussed, examining how emotional and social competencies influence the perception of overall positive mood.

Adaptability

The ability to adapt both to bad, good, and challenging circumstances is expected to positively relate to overall positive mood. Particularly in the fast changing technical environment, IT professionals who are resistant to change are unlikely to experience organizational life in a positive way. Thus, it is anticipated that for IT professionals, adaptability will be perceived as having a positive relationship with overall positive mood.

Empathy

Empathy involves sensing others' feelings and perspectives and taking an active interest in their concerns. Empathy has been

found to lead people to attribute negative behavior to situational factors rather than dispositional factors (Regan and Totten, 1975) and increase helping behavior (Betancourt, 1990). The attribution of negative behavior to situational, rather than personal factors decreases the intensity of the negative response for the person who is displaying empathy, thus improving their mood. For the receiver of the empathy, knowing that someone in the organization understands how you feel and is willing to see your perspective would also result in higher levels of positive mood. IT professionals work within a strong social identity group, which promotes respect and understanding, amongst peers. Therefore, it is expected that empathy will be perceived to have a positive relationship with overall positive mood.

Organizational Awareness

A positive relationship exists between organizational awareness and an employees' commitment for organization success (Gagnon et al., 2014). Organizational awareness is about understanding the power and influence in the group. Membership in IT is important to IT professionals, mimicking that of a fraternity, seeking inclusion and acceptance to belonging to the 'in-group'. Belonging is a basic psychological need (Baumeister and Leary, 1995) and is a basic, formidable, and extremely pervasive motivation. Therefore organizational awareness can lead to the fulfillment of our need to belong and is expected that IT professionals would perceive it to be overall positively related to positive mood.

Emotional Self-Awareness

The technology industry is dynamic and complex. With a constant flow of emerging trends and rapidly changing technologies, IT professionals are forced to constantly examine and upgrade their skills (Ang and Slaughter, 2000; Agarwal and Ferratt, 2002).

Information technology professionals regularly evaluate themselves against their peers. To maintain relevance and sustain marketable skills, IT professionals must reskill and reskill and reskill. One day their skills are in demand and they are being paid bonuses for their skills (Cobol Programmers in 2000) and the next quarter, the skills are no longer needed. The emotional swings of relevancy wreak havoc on the IT professional's emotions. Thus, it is expected that self-awareness will be perceived as being negatively related to overall positive mood.

Achievement Orientation

Information technology professionals take much pride in demonstrating their competence to others. Employees with a performance-approach orientation are motivated to demonstrate superior competence relative to others and to obtain favorable judgments of their achievements (Elliot, 2005). Preenan et al. (2014) found that on high-challenging tasks, employees had a higher positive mood and concluded that a performance-approach orientation elicits a positive-activating mood. Thus, it is expected that the achievement orientation will be perceived as being positively related to overall positive mood.

Conflict Management

Conflict management is the process of reducing the negative aspects of conflict while increasing the positive aspects of conflict. By managing conflict, the aim is to enhance learning and boost group outcomes, such as employee effectiveness in an organizational setting (Rahim et al., 1992). Emotions play a role in employee performance, particularly on creative tasks, as those fulfilled by IT professionals. Since the work in IT typically occurs in teams, there is potential conflict and competition for accepted ideas, a part of the creative process. Such conflict management promotes innovation and constructive contention, with likely better outcomes. Thus, it is hypothesized that conflict management will be positively related to overall positive mood.

Influencing Others

Information technology professionals are characteristically introverted and most likely to minimize both internal and external stimuli. They maintain a strong identity with individuals that are similar to them and do not actively seek to neither build relationships nor influence others. Kahnweiler (2013) claims that biggest challenge for an introvert is losing confidence and feeling powerless, further asserting that introverts try to influence others by mirroring colleagues, which is tiresome, unsustainable and usually ineffective. Given this, it is expected that influencing others would be perceived as being negatively related to overall positive mood.

In sum, the following relationships between emotional and social competencies and overall positive mood are hypothesized:

H4: Individual emotional and social competencies of adaptability, empathy, organizational awareness, achievement orientation, and conflict management will positively and influencing others and emotional self-awareness will negatively affect the IT professional's perception of overall positive mood.

Role Breadth Self-Efficacy as an Antecedent of Shared Vision, Compassion, and Overall Positive Mood of IT Professionals

Parker's (1998) *theory of Role Breadth Self-Efficacy (RBSE)* refers to employees' perceived capability to carry out a broader and more proactive set of work tasks that extend beyond prescribed technical requirements. Further, Parker claims that those that do engage in behaviors that span beyond their defined roles and assume broader responsibilities essential for organizational success are seen as more valuable (Parker, 1998). The theory of RBSE focuses on emotional behaviors presumed to change in response to the changing conditions of the organization environment (Parker, 1998). This is further supported by Den Hartog and Belschak (2007) who argue that one's organizational attachment is an important motive for an employee's engagement. Such findings support the intent of the study by examining how RBSE might have a relationship with the interpersonal environment in an organization (vision, compassion, and overall positive mood).

Information technology professionals place significance on how well their self-image aligns with what they see as representative of the greater group (Ely, 1995; Alvesson et al.,

2001) and when a high level of perceived similarity exists, they may be more satisfied with and have a higher positive evaluation of the organization. RBSE should be positively related to shared vision because perceiving that there is a shared vision makes employees more likely to believe that they know how to contribute to organizational goals by going beyond the limits of their roles. The shared vision, in a sense, provides a road map for moving into uncharted territory.

Technical self-efficacy as it relates to the IT professional focuses on the level at which employees believe in their abilities to perform in a given situation (Webster and Martocchio, 1992), while social identity theory (Tajfel, 1978) is defined as the part of an individual's self-concept derived from membership in a group where value and emotional meaning is attached. Since IT individuals value their skills and expertise, they seek others and choose situations where they can demonstrate their competence (Judge, 2002). RBSE should be positively related to compassion because in a supportive work environment, employees will expect that they will receive help, if necessary, if they go beyond the confines of their role. They also will be less afraid of failing if they do so.

Role breadth self-efficacy relates to an employee's need to feel confident in their ability to engage in proactive behavior (Parker, 1998). Loundsbury et al. (2012) argue that technically oriented professionals are open to new and radical ideas, very willing to experiment, enjoy variety of tasks, and are inclined to seek out novel experiences. RBSE should be related to overall positive mood because people tend to be more expansive in their thinking and behavior when their mood is positive. Thus, working in a setting where the mood is positive will make employees more likely to go beyond the confines of their roles.

In sum, it is hypothesized that RBSE will positively affect the IT professional's perception of shared vision, compassion, and overall positive mood:

H5: RBSE will positively affect the IT professional's perception of shared vision, compassion and positive mood, the three sub-constructs of the interpersonal environment.

The research model, as shown in **Figure 1**, visually articulates the flow of this research. Hypothesis 1 represents the IT professional's perception of the interpersonal environment through the use of three sub-constructs; shared vision, compassion, and overall positive mood and how they may relate to employee engagement, which is represented by three constructs; absorption, dedication, and vigor. Hypotheses 2–4 represent specific emotional and social competencies (adaptability, conflict management, empathy, organization awareness, achievement orientation, emotional self-awareness, and influencing others) and how they may relate to the IT professional's perception of the interpersonal environment (shared vision, compassion, and overall positive mood). Hypothesis 5 is represented by RBSE and how it may relate to the IT professional's perception of the interpersonal environment (shared vision, compassion, and overall positive mood).

Research Method

Operationalization of Construct

The operationalization of the construct drew mainly from four validated instruments that measured the independent

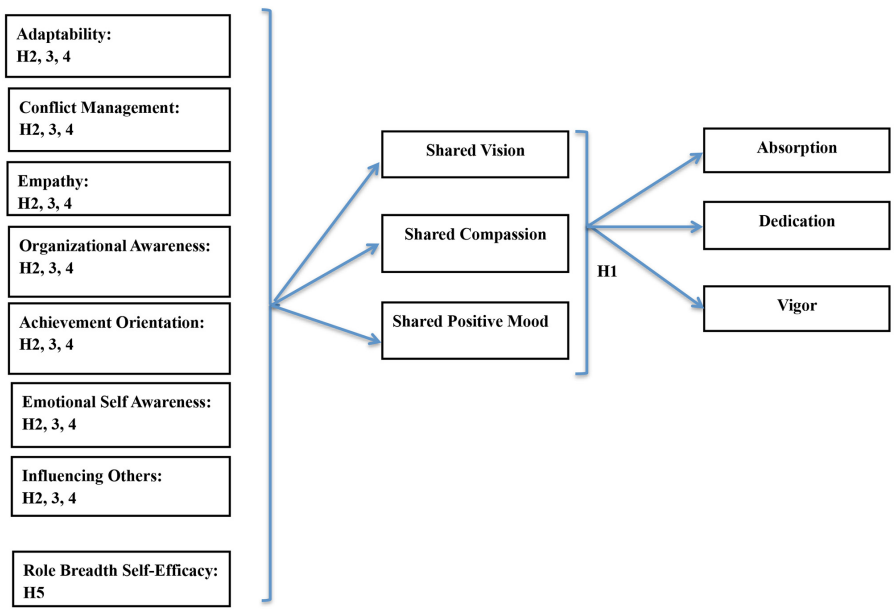

FIGURE 1 | The mode and hypotheses predicting engagement.

variables (RBSE and emotional and social competencies), interpersonal environment and the dependent variable (engagement).

To measure engagement, the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2002) was used. Three sub-constructs (dedication, vigor, and absorption) reflect the dimensions of engagement and its 17 items are scored on a 7-point Likert scale ranging from (Never Almost Never, Rarely, Sometimes, Often, Very Often, Always). The reliability and the factorial validity of the UWES (Schaufeli et al., 2002) are suitable. The Cronbach ***a***lpha reliability is as follows: Vigor (0.83), Dedication, (0.90), and Absorption (0.88). Sample questions from the UWES include:

- At work, I feel full of energy.
- I am enthusiastic about my job.
- When I am working, I forget everything else around me.

The perception of the interpersonal environment was measured by the positive and negative emotional attractors (PNEAs) instrument, which Boyatzis (2006, 2013) claims to determine the perspective of the self-organizing process, sometimes adapting to existing conditions and/or to new, emergent conditions. The PNEA construct consists of 20 questions. The construct has three sub-constructs: shared vision, compassion, and overall positive mood. The subscales of the construct are scored on a five point Likert scale (Strongly Agree, Somewhat Agree, Neither, Somewhat Disagree, and Strongly Disagree). The Cronbach alpha reliability is as follows: Vision (0.905), Compassion, (0.853), and Overall Positive Mood (0.909). Lists of questions are summed to provide a score for each sub-construct and then all three sub-constructs are summed to provide a PEANEA score.

Sample questions include:

- I do not feel trusted by my colleagues.
- I feel trusted by my colleagues.
- I care about my colleagues at work.
- I do not care about my colleagues at work.

The Emotional and Social Competency Inventory (ESCI-U; Boyatzis and Goleman, 1996) is a 72-item instrument used to measure the dimensions of emotional and social intelligence. The self-report version of the ESCI-U was used for the study. Seven of the 14 competencies of the ESCI-U were used in the study. Half of the ESCI-U competencies were not used. This was due to a concern regarding the length of the study survey instrument. Competencies were eliminated based on their perceived lack of applicability to employee engagement. This included two cognitive competencies (systems thinking and pattern recognition), two emotional competencies (emotional self-control and positive outlook), and three social competencies (coach and mentor, inspirational leadership, and teamwork). Those included in the study were: adaptability, conflict management, empathy, organization awareness, achievement orientation, emotional self-awareness, and influencing others. The ESCI-U instrument consists of a multi-item scale with a six-point response format (Don't know, Never, Rarely, Sometimes, Often, and Consistently).

Sample questions include:

- When resolving conflict, deescalate the emotions in the situation.
- Initiate actions to improve own performance.
- Understand the informal structure in the organization.

The questions in the ESCI-U instrument (Boyatzis and Goleman, 1996; Boyatzis et al., 2001/2007) demonstrate the following Cronbach alpha:

Emotional Intelligence Dimension:

- Emotional Self Awareness: recognizing one's emotions and their effects (six items): 0.771.
- Achievement Orientation: striving to improve or meeting a standard of excellence (six items): 0.705.
- Adaptability: flexibility in handling change (six items): 0.752.

Social Intelligence Dimension:

- Empathy: sensing others' feeling and perspectives, and taking an active interest in their concerns (six items): 0.725.
- Organizational Awareness: reading a group's emotional currents and power relationships (six items): 0.764.
- Influencing Others: wielding effective tactics for persuasion (six items): 0.746.
- Conflict Management: negotiating and resolving disagreements (six items): 0.636.

To assess RBSE, Parker's (1998) instrument was used. The instrument demonstrates a Cronbach alpha of 0.96. The 10-item instrument contains a multi-item scale with a response format (1-not at all confident to 5-very confident) that measures one's confidence to perform tasks tapping affective elements, such as proactivity and interpersonal and integrative competencies. Scores are aggregated to form a single scale. Sample questions from the construct include:

How confident would you feel:

- Analyzing a long term problem to find a solution.
- Representing your work area in meetings with senior management.
- Writing a proposal to spend money in your work area.

Sample

The cross-sectional study was administered online and data was collected from May through August 31, 2011. The study was approved by Case Western Reserve University's IRB. Data was collected through online surveys from IT professionals employed at global companies. Several professional IT associations were contacted for survey participants, who distributed the survey to their members. Participants were contacted via email, inviting them to participate in the study by clicking on a survey link provided. Several procedures were used to ensure high response and completion rates. This included: (a) a cover letter explaining

the need for the scholarly research and the critical role of practitioners in to create useful knowledge; (b) assurance of anonymity and individual and organizational confidentiality, and (c) access to completed survey results. Two reminder emails were sent, one email was sent after 2 weeks and a second email after 4 weeks. Since the surveys were distributed through online mechanisms, it was not possible to determine the response rate, non-response bias or to draw conclusions on the reasons for those who dropped out. Qualtrics, a web platform was used to host the survey. A total of 1,143 IT professionals completed the survey. Accounting for returned emails and incomplete responses, 795 usable surveys were included in the study, yielding a 70.0% rate for completed surveys.

Demographics

Table 2 informs us of demographics of the study's respondents. The age of respondents ranged from under 30 to over 60 years of age. Specifically, 13.5% were under 30, 24% are ages 31–40, 29.4% are ages 41–50, 25.7 are ages 51–60, and 6.6% are over the age of 60. In our sample, female participants (29.4%), paled in comparison to males (69.5%). Further, individual contributors represented a little over half (54.2%) and managers (45.3%) of the sample. With respect to experience, 42% had over 20 years of experience and fewer than 2% of IT professionals have less than 1 year. IT professionals with 1–4 years experience represented 10.8%, 12.5% of respondents had 5–10 years, 18.6% had 11–15 years, and 16–20 years of experience consisted of 13.9%.

TABLE 2 | Characteristics of respondents ($n = 795$).

	N	%
Age		
<30 years	107	13.46
31–40 years	191	24.02
41–50 years	234	29.44
51–60 years	204	25.66
Over 60 years	52	6.60
No response	7	<1.0
Gender		
Female	235	29.40
Male	555	69.50
No response	5	<1.0
Job role		
Individual contributor	431	54.21
Manager	360	45.28
No response	4	<1.0
Experience		
Less than 1 year	15	1.88
1–4 years	86	10.81
5–10 years	99	12.45
11–15 years	148	18.60
16–20 years	11	13.88
Over 20 years	436	42.38

Measurement Model

Data Screening

Relevant statistical assumptions necessary for subsequent analyses were checked and no violations of assumptions were uncovered. The data screening included handling missing data and addressing outliers and influentials. The analyses showed that the items comprising the RBSE, ESCI-U, PNEA, and UWES were normally distributed around their mean. After reviewing all of the data, a couple of outliers were found that were then removed because of cross loadings and low primary loadings.

Exploratory Factor Analysis and Confirmatory Factor Analysis

Exploratory factor analysis (EFA) was utilized to see how many factors would explain the patterns among the interrelationships of the items and reduce the number of variables into more manageable factors and examine the convergent and discriminant validity of the constructs. First, 98% of items correlated at least 0.30 or higher with at least one other item, suggesting reasonable factorability. Second, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.952, above the recommended value of 0.60, and Bartlett's test of sphericity was significant (32476.489, $p < 0.001$). There were 11 non-redundant residuals with absolute values greater than 0.05. The diagonals of the anti-image correlation matrix were all over 0.50, supporting the inclusion of each item in the factor analysis. Finally, the communalities were all above 0.40 further confirming that each item shared some common variance with other items. There were a significant number of correlations greater than 0.30 were observed, suggesting non-orthogonality. The analysis was continued with an oblique rotation using principle axis factoring (PAF). A promax rotation provided the best-defined factor structure. A factor-loading threshold of 0.40 was set (Hair et al., 2010) and the results showed all items had primary loadings over 0.60 with low and cross loadings of 0.30 or above. Due to both low and cross loading, the variables of emotional self-awareness were sequentially deleted from the analysis until an acceptable model emerged[1]. Other solutions were examined, however, the 14 factor solution, which explained 63.895% of the variance, was preferred because of its theoretical support, the 'leveling off' of Eigen values on the scree plot after 14 factors, and the number of primary loadings on their hypothesized factors. A confirmatory factor analysis (CFA) was conducted in AMOS. Using the dataset, significance and several model fit measures were tested. The original measurement model had 100 variables associated with 15 constructs. The Browne–Cudeck criterion (BCC) test of close fit was used and the BCC value was compared across the hypothesized model (Browne and Cudeck, 1993). The 90% confidence level was 0.035–0.037, lower than the saturated model, suggesting a good fit (Floyd and Widaman, 1995). Steiger

[1]It should be noted I held the tolerance for the factors to 0.7, but the ESCI instrument has been determined valid at a 0.4 or higher level. Taking this into consideration, I performed ran a second EFA leaving in the lower factor-loading as acceptable, I found that fewer questions were eliminated from the constructs, but my findings did not significantly change.

and Lind's (1980) root mean square error of approximation (RMSEA) with a 90% confidence interval was used to reflect both the fit and parsimony of the model at hand. The RMSEA was 0.035 and had a PCLOSE of 1.000. The non-normed fit index (NNFI; Tucker and Lewis, 1973), the comparative fit index (CFI; Bentler, 1990), and incremental fit index (IFI) as other goodness-of-fit measures that reflect the proportionate improvement in fit of the measurement model over a more restricted baseline model were used. The NNFI, CFI, and IFI all were "close to 0.96" indicating satisfactory fit (Hu and Bentler, 1998).

Validity and Reliability

Tests were conducted to evaluate the convergent and discriminant validity and the reliability of reflective measures. Those loadings that exceeded 0.70 on their respective factors were construed as indicative of convergent validity (Straub et al., 2004). Average variance extracted (AVE) ranged from 0.51 to 0.77, exceeding the recommended threshold of 0.50 (Fornell and Larcker, 1981) indicating acceptable convergent validity for each construct. Composite scale reliability ranged from 0.66 to 0.95, exceeding the recommended cutoff value of 0.70 (Nunnally, 1978). The correlation matrix indicated that the requirements of discriminant validity were satisfactorily achieved. Only three discrepant correlations out of a possible 98 were indicated. A second test of discriminant validity of individual items is implicit if they load higher on their own respective construct than on any other latent variable (Gefen et al., 2000; Straub et al., 2004). This requirement was met, with only two discrepancies among a possible 69. The internal consistency of the measures established the reliability by examining the Cronbach alpha and composite reliability, for each construct. Only minor issues are apparent in a few of the variables: adaptability, conflict management, empathy, and organization awareness are just below the 0.7 threshold for reliability, but this is justifiable as there are only two items for each of these factors. **Tables 3** and **4** indicate the validity and reliability and correlation results.

Common Method Bias (CMB)/Variance

Several steps were taken to mitigate, detect, and control for a common method bias (CMB). All survey items were carefully constructed and pre-tested, valid, multidimensional constructs were used (Huber, 1985). The scale anchors and format in the questionnaire were varied and a series of scale-validation processes were performed before distributions. The Harmon's test results indicated that 28% of the variance is explained by a single factor. The correlations with the common variable, when including a marker variable, were 0.34, indicating a common method variance (CMV) of 11.6%, indicating that the study does not suffer from a CMB. Multicollinearity was examined through linear regression analysis on the study constructs and low variance inflation factors (VIFs) were found; nearly all VIFs were below three and only one construct; absorption (ABS) had indicators with VIFs above 5 (but less than 10). CMV was assessed using the Lindell and Whitney (2001) marker variable test. The results indicated that just over 7% of the common variance is between unrelated latent factors. To perform the marker test, a marker EI was added, with three questions (EMP6, OA6, INF6). The tests that were performed illustrate that although there is some bias in the model, the results are reliable and valid.

TABLE 3 | Validity and reliability ($n = 795$).

		Reliability		Variance		
Construct	**Items**	**Cronbach alpha**	**Composite**	**Average extracted**	**Maximum shared**	**Average shared**
Organizational environment						
Vision	7	0.91	0.90	0.58	0.74	0.15
Compassion	3	0.82	0.83	0.63	0.32	0.09
Overall positive mood	6	0.94	0.94	0.71	0.74	0.15
Emotional/social competencies						
Adaptability	2	0.69	0.69	0.53	0.38	0.16
Achievement orientation	4	0.81	0.82	0.53	0.38	0.22
Conflict management	2	0.70	0.70	0.54	0.37	0.14
Empathy	2	0.67	0.66	0.49	0.34	0.16
Emotional self awareness	4	0.81	0.81	0.51	0.37	0.15
Influence	2	0.73	0.73	0.58	0.19	0.07
Organization awareness	2	0.64	0.68	0.52	0.25	0.11
Role breadth self efficacy						
RBSE	7	0.89	0.91	0.55	0.27	0.14
Engagement						
Absorption	6	0.95	0.95	0.77	0.76	0.19
Dedication	6	0.94	0.94	0.72	0.51	0.24
Vigor	4	0.87	0.86	0.61	0.76	0.21

TABLE 4 | Correlation matrix ($n = 795$).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
(1) Role breadth self efficacy	1													
(2) Absorption	0.37	1												
(3) Adaptability	0.09	0.38	1											
(4) Achievement orientation	0.12	0.24	0.35	1										
(5) Conflict management	0.30	0.47	0.48	0.47	1									
(6) Dedication	0.51	0.25	0.11	0.15	0.19	1								
(7) Empathy	0.62	0.60	0.37	0.23	0.52	0.34	1							
(8) Emotional self awareness	0.02	0.05	0.33	0.26	0.22	−0.09	0.02	1						
(9) Influence	0.22	0.33	0.44	0.38	0.52	0.19	0.30	0.23	1					
(10) Organizational awareness	0.05	0.23	0.38	0.37	0.26	0.13	0.16	0.34	0.29	1				
(11) Overall positive mood	0.18	0.39	0.30	0.46	0.49	0.23	0.36	0.11	0.38	0.39	1			
(12) Vigor	0.15	0.23	0.40	0.47	0.46	0.15	0.32	0.12	0.34	0.30	0.40	1		
(13) Compassion	0.17	0.10	−0.07	−0.01	0.02	0.24	0.25	−0.09	−0.02	−0.00	0.04	0.00	1	
(14) Vision	0.00	−0.02	0.11	0.10	0.23	−0.04	0.21	0.09	0.14	0.07	0.13	0.22	−0.07	1

Specification of the Structural Equation Model (SEM)

To test the hypotheses, a path model was specified in AMOS Version 18 and the maximum likelihood technique was used for its estimation. The structural equation model (SEM) tested the direct effects hypotheses of the emotional and social competencies and RBSE as related to the interpersonal environment, specifically the three sub-constructs: vision, compassion and overall positive mood and the direct effects of the perception of the interpersonal environment to engagement (absorption, dedication, and vigor).

Results

Of the 27 hypotheses, (17/27) were found to be statistically significant. Sixteen hypotheses were not supported and these

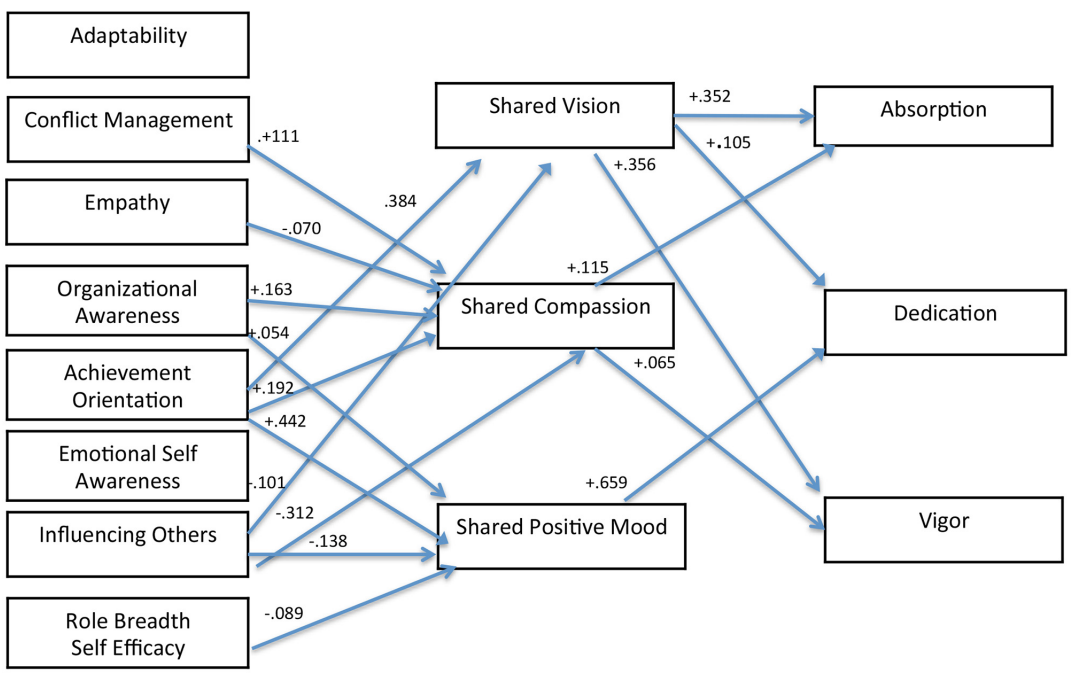

FIGURE 2 | Structural equation model (SEM) results.

were subsequently trimmed removing one non-significant path at a time from the fully identified model[2]. The final model is displayed in **Figure 2**. Hypothesis 1: Shared vision was positively related to all three sub-constructs of engagement: absorption ($\beta = 0.352$, $p = 0.000$) dedication ($\beta = 0.105$, $p = 0.005$), and vigor ($\beta = 0.356$, $p = 0.000$). Compassion was positively related to absorption ($\beta = 0.115$, $p = 0.000$) and vigor ($\beta = 0.065$, $p = 0.009$), while overall positive mood was positively related to dedication ($\beta = 0.659$, $p = 0.000$). Hypothesis 2: Only achievement orientation was positively related to shared vision ($\beta = 0.384$, $p = 0.000$), while influencing others was negatively related with shared vision ($\beta = -0.101$, $p = 0.000$). Hypothesis 3: The following competencies were positively related to compassion: achievement orientation ($\beta = 0.192$, $p = 0.000$), conflict management ($\beta = 0.111$, $p = 0.003$), and organizational awareness ($\beta = 0.256$, $p = 0.000$). Empathy ($\beta = -0.070$, $p = 0.000$) and influencing others was negatively related to compassion ($\beta = -0.312$, $p = 0.000$). Hypotheses 4: The following competencies were positively related to overall positive mood: organizational awareness ($\beta = 0.054$, $p = 0.012$), and achievement orientation ($\beta = 0.442$, $p = 0.000$). Influencing others was negatively related to overall positive mood ($\beta = -0.138$, $p = 0.004$). In summary, the relationship between achievement orientation and the perceived interpersonal environment was positive for all three sub-constructs and the relationship between influencing others and the perceived interpersonal environment was negative for all three sub-constructs. Hypothesis 5: RBSE was negatively related to overall positive mood ($\beta = -0.089$, $p = 0.000$).

Discussion

The escalating organization investment in IT has not necessarily delivered the business value expected (Brynjolfsson, 1994), with less than a third of technology projects being delivered on budget or on time and almost a third canceled or never used (Johnson, 2009). Ellis (2009) claims that 75% of global companies admit to wasting one in three dollars spent on technology projects. There are many explanations for why IT has been afflicted with performance shortcomings. This study focuses on IT professionals and their lack of engagement. The goal of the research was to leverage the findings so that they could be applied to practice. This study is important because it examined if the perception of shared vision, compassion and overall positive mood would be positively related to engagement (absorption, dedication, and vigor) and explored how specific emotional and social competencies such as empathy, organizational awareness, emotional self-awareness, achievement orientation and conflict management might positively or negatively relate to the perception of shared vision, compassion, and overall positiveshort mood.

Christian et al. (2011) assert that specific job characteristics are strongly related to engagement. Rich et al. (2010) claim that the nature of employee's behavioral contributions to their organizations is a function of job engagement. The focus on engagement relied on Schaufeli et al. (2002, p. 74) description of engagement as "a positive, fulfilling, work-related state of mind that is characterized by dedication, absorption, and vigor." Engagement is, therefore not a momentary and specific state, but "a ... persistent and pervasive affective-cognitive state not focused on any particular object, event, individual, or behavior." The study findings reveal that perceptions of the interpersonal environment relate to how IT professionals engage at work. The study uncovered that the perception of shared vision related to all three of the components of engagement: dedication, vigor, and absorption. The study findings highlight that when a vision is created and assimilated within the organization people feel a part of a cause and are dedicated to the direction that leadership is driving. It is unfortunate, because in practice, leaders still fail to provide a clear vision to their people (Gallup Inc, 2013). Vision is seen as a way to "inspire others, to motivate action and to move with hope toward the future" (Farling et al., 1999, p. 53). Schaufeli and Bakker (2004) assert that absorption is characterized by being fully and enthusiastically engrossed in one's work, whereby time flies by quickly. People feel excited when they have a shared vision and this vision connects the users. Next, the perception of shared compassion was related to vigor and absorption. These findings reveal that an interpersonal environment perceived as caring relates to the degree to which employees engage. The findings support Doty (2014) who claims that compassionate organizations have more engaged employees, generalizing that in a more compassionate workplace, employees are less stressed and more satisfied with their jobs, and turnover is lower. Building on this, Frost et al. (2000, p. 25) claim that compassion and care are not separate from being a professional or doing the work of the organization, but rather are a natural and living representation of people's humanity in the workplace." The study also uncovered that another sub-construct of the interpersonal environment; overall positive mood, is perceived by IT professionals to be positively related to dedication. An improvement in the attitude of the employees renders more produce positive outcomes, such as the employees' increased performance and higher job satisfaction (Choi, 2012), leading to improved dedication. Additionally, employees who identify with the organization are likely to be more dedicated, especially if they think there is a future. An exchange relationship exists between the individual and the organization in which dedication is exchanged in the search for the results desired, such that employees become more engaged in their work (Flaherty and Pappas, 2000).

The research revealed that achievement orientation was the most significant emotional competency to positively relate to one's perception of the interpersonal environment. Achievement orientation was perceived as positively related to all three of the sub-constructs of the interpersonal environment: shared vision,

[2]The non-significant paths were: (1) adaptability positively relates to vision, compassion and overall positive mood, (2) conflict management negatively relates to vision, (3) empathy positively relates to vision and compassion, (4) organizational awareness positively relates to vision, (5) emotional self-awareness positively relates to vision, (6) emotional self-awareness positively relates to compassion, (7) emotional self-awareness negatively relates to overall positive mood. (8) RBSE positively relates to vision and compassion, (9) compassion relates to dedication, (10) overall positive mood will positively relates to vigor, and (11) overall positive mood will positively relates to absorption.

compassion, and overall positive mood. In the study hypothesis, it was originally hypothesized that achievement orientation would be perceived by IT professionals to be negatively related to compassion. The individualistic aspect of the work in IT informed this hypothesis. IT professionals enjoy working alone and feel like that can control their work elements, enhancing their sense of belonging and desire to work harder. However, the study findings revealed that the relationship of achievement orientation to be positively related to the IT professionals perception of compassion. This supports that even though IT professionals over achieve to promote themselves, they also do it for the good of the organization. Additionally, (McCullough, 2013) argues that employees with a high achievement orientation enjoy greater job satisfaction, which is related to a more positive perception of the interpersonal environment. High achievers tend to depend on certain factors under their own control and believe that success is a choice, while less achievement oriented individuals believe that success is outside of the individual's control (McCullough, 2013).

Additionally, the study revealed that influencing others was perceived by IT professionals to be negatively related to all three of the sub-constructs of interpersonal environment: shared vision, compassion, and overall positive mood. This is supported by research on the personality of IT professionals. They tend to be introverted and work in a very specific discipline (similar to engineering and accounting). The creative, independent nature of the IT professional does not always align with traditional hierarchical, command-and-control organizations. The deployment of pure technical tasks typically does not span many boundaries beyond their organization. However, when IT professionals need to rely on their positional power to pressure others, this creates a dynamic that leads to disenfranchised employees (White, 2014). Influencing others does not appeal to most IT professionals. This finding may not be true for other working professionals and may be a distinctive finding to IT professionals.

Organization awareness was positively related to the IT professional's perception of two sub-constructs of interpersonal environment: compassion and overall positive mood. Possessing higher levels of customer service is critical for IT professionals, given increasing demands from internal customers, such as marketing and sales departments, and pressure for more integration of IT with other organizational units (Lee et al., 1995). As observed by Ray et al. (2005), customer service has become a strategic imperative, linking a firm's information technology resources and capabilities to achieving quality. IT professionals need to have keen insight into the strategies of multiple business units to be able to serve them effectively. The systems and software they create and implement serves the business and process needs of those within the organization. Having awareness of the organization builds trust and helps the IT professional to work smarter, not harder (Morton, 2014). McKenzie (2014) notes that working harder is a poor strategy and advises that a strategy that has become ingrained in the IT culture is to work smart and go home.

The research uncovered that conflict management is perceived by IT professionals to be positively related to compassion. Jordan and Troth (2004) claim that the act of integrating that occurs during conflict resolution is positive correlated with overall emotions. Since IT professionals are often misunderstood and negatively perceived by the business, IT professionals form a strong social identity with fellow workers to fight for their beliefs and demonstrate compassion for what they believe. In many organizations, IT is viewed as a cost center that does not provide much value. As a cost center, their funding is often reviewed and questioned and outsourcing of IT functions and/or downsizing are often perceived threats. To effectively deal with doubt and fear of their future employment, IT professionals must be ready and able to take on senior management as survival modus operandi.

There were three hypotheses that were not supported. Emotional self-awareness and overall positive mood were originally hypothesized to be negatively related, and in the study were not found to be related at all. The premise that IT professionals are forced to constantly reskill in the latest technologies to remain relevant was expected to be perceived as negatively related to overall positive mood. Since IT professionals are creative individuals, the idea of reskilling may appeal to some more than others, resulting in no significant relationship. With respect to empathy, a perceived negative relationship to compassion was revealed. Loundsbury et al. (2014) support this finding, claiming that IT professionals have personalities with significantly higher levels of agreeableness, tough-mindedness, and detachment. Further, they argue that IT professionals draw conclusions based on logic, facts, and data rather than feelings, values and intuition are more inclined to be analytical, objective and unsentimental when compared to other occupations.

Parker's (1998) RBSE refers to employees' perceived capability to carry out a broader and more proactive set of work tasks that extend beyond prescribed technical requirements. This study revealed that for IT professionals, no statistically significant relationship exists between RBSE and two of the three dimensions of the interpersonal environment (shared vision and compassion). The only finding, a negative relationship for RBSE and overall positive mood, was shown to be weak. The Institute for Management Excellence (2003) claims that 67% of IT professionals are introverted. The work in IT consists of independent tasks that require alone time, quiet concentration and attention focused on the work at hand, with little social interaction, which are best suited for introverts (Institute for Management Excellence, 2003). Given this, it is likely that their beliefs about their abilities to perform tasks beyond their prescribed roles may not be influenced by the perceived interpersonal environment. If the negative result for overall positive mood is real and not due to a methodological quirk, it could be that the exuberance of their coworkers actually makes the introverted IT professional somewhat uneasy, which makes them less willing to go beyond their prescribed roles. As such, reaching out and going beyond the task can be stressful for IT professionals, so they are likely to be low in RBSE. Since the RBSE of IT professionals are perceived to be negatively related to overall positive outlook, implementing interventions that focus on developing the personality characteristics associated with extraversion would support positivity in the workplace.

Implications for Future Research and Practice

This study focused on what factors might positively relate to the engagement of IT professionals, one of the least engaged populations within organizations (Treadwell and Alexander, 2011). This work underscores the importance of emotional and social competencies and supports the research of McClelland (1973), Spencer and Spencer (1993), Goleman (1998), and Boyatzis (2008) with respect to the impact of competencies on the interpersonal environment specifically, and more generally, the organizational environment as a whole. The research study was motivated by the importance of understanding how emotional and social competencies might affect the interpersonal environment, which in turn, might affect employee engagement. The negative cost to having employees that are not engaged includes lower productivity and higher turnover (Bassi and McMurrer, 2007). By contributing knowledge, practice could be positively impacted, further supported by Ramirez et al. (2001) who claim that IT organizations that earn higher returns are ones who implement employee engagement initiatives. This study provides an increased understanding of the behaviors that relate to the IT professional's perception of the interpersonal environment, and in turn, how the interpersonal environment might impact the engagement of IT professionals. This knowledge can be leveraged in practice to increase the percentage of IT professionals engaged at work. Using the specific behaviors identified as positively impacting the interpersonal environment, practitioners can apply this knowledge to several of their Human Capital Management processes. In the hiring process, organizations should implement an interview protocol that supports identifying candidates that are achievement oriented. Another behavior, organizational awareness, was significantly related to two interpersonal environment constructs: compassion and overall positive mood. These two behaviors should be added to talent development criteria and promotional processes. Having individuals with these behaviors will positively relate to the perception of the organizational environment, which in turn, will positively relate to employee engagement. The study findings also support Stajkovic and Luthans (1998) and Boyatzis (2008) who claim that the perception of the interpersonal environment impacts the level of employee engagement. On an organizational level, the study findings have important implications for those involved in the strategic planning of human capital. Leaders should be encouraged to leverage the findings to improve management practices that influence the interpersonal environment.

The research uncovered that engagement is positively impacted by each of the distinctive components of the interpersonal environment (vision, compassion, and overall positive mood). As a result, it is recommended that leaders actively communicate the organization's vision and ensure that employees understand and align with such vision. The study findings highlight that when a vision is created and assimilated within the organization, people feel a part of a cause and are dedicated to the direction that leadership is driving. Yet, leaders still fail to provide a clear vision to their people (Gallup Inc, 2013). Vision is seen as a way to "inspire others, to motivate action, and to move with hope toward the future" (Farling et al., 1999, p. 53). People feel excited when they have a shared vision. Leaders should be encouraged to evaluate the organization's culture to gain an understanding if compassion is valued, supported, and nurtured. This study revealed that compassion is significantly related to absorption and vigor, demonstrating that having employees passionate about their organization impacts how much they engage. The findings support Doty (2014) who claims that compassionate organizations have more engaged employees, generalizing that in a more compassionate workplace, employees are less stressed and more satisfied with their jobs, and turnover is lower. Finally, the findings revealed that an employee's overall positive mood was significantly related to their level of dedication. Dedicated employees become more absorbed in their work, resulting in greater work outcomes. Dedicated employees envision a future with the organization. Therefore, it is recommended that organizations create career paths and provide internal mentors to support employees to develop personal career plans. Researchers are encouraged to further explore how specific emotional and social competencies and RBSE affect engagement. Future inquiry could focus on a broader set of factors within the interpersonal environment to increase understanding of the IT professional. Finally, the research could be expanded to include other types of workers, outside of IT.

Limitations

This study has some limitations that should be noted. Although the focus on IT professionals was deliberate, it may not be generalizable to all IT professionals because the respondents were recruited and the sample was drawn from a few global companies and IT professional associations in the United States and Canada. Additional data providing further insight into the respondents such as industry type, geography, etc. could have been collected. A more global sample may have produced different results. Further, the data is self-reported and a 360° or manager feedback mechanism was not used, which could have provided a broader perspective. The survey instrument consisted of four widely used measures that were carefully selected and integrated to best reflect the theories that informed this research. Three of the measurement constructs were used in their entirety. Due to the size of the ESCI-U construct, only seven of the 14 competencies were chosen. By not using the entire measurement instrument, the overlooked dimensions may have proven significant to the findings. With respect to the findings on RBSE, the results inform that there is a RBSE has a relationship with shared vision, compassion, and positive mood.

Conclusion

This study on employee engagement is unique in its focus on IT professionals – in particular with respect to examining which emotional and social competencies and RBSE relate to aspects of the interpersonal environment and what aspects of the interpersonal environment might relate to engagement. This research can help practitioners consider which factors might help improve engagement, increase innovation, and improve performance.

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 08 May 2015
doi: 10.3389/fpsyg.2015.00442

The affect of vision and compassion upon role factors in physician leadership

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The career path for many professionals is often into a leadership role, yet many professionals do not have the competencies or inclination to lead. This study explores physician leaders as a representative group of professionals. While there have been many efforts at understanding the characteristics of effective physician leaders, a greater understanding is needed on the nature of physician leadership. The largest healthcare organization for physician leaders in the United States was surveyed to gain a greater understanding of the nature of leadership. Partial Lease Squares (PLS) was used to analyze results from 677 online surveys to understand the causal relationship of role conflict and role endorsement to participation. The findings reveal the mediating influence that positivity exerts upon participation, and offers health care leaders an opportunity to increase understanding of the social identification process that leads a higher level of professional participation, which may increase effectiveness for physicians in leadership.

Keywords: affect, role conflict, role endorsement, physician leadership, professionalism, identity

OPEN ACCESS

Edited by:
Kylie Rochford, Case Western Reserve University, USA

Reviewed by:
Anita Howard, Case Western Reserve University, USA
Deborah Anne O'Neil, Bowling Green State University, USA

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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *23 October 2014*
Accepted: *28 March 2015*
Published: *08 May 2015*

Citation:
Quinn JF (2015) The affect of vision and compassion upon role factors in physician leadership. Front. Psychol. 6:442. doi: 10.3389/fpsyg.2015.00442

Introduction

Physicians have long held leadership roles within hospitals and other healthcare organizations (Reinertsen, 1998). While there is considerable research on physician leadership from a variety of disciplines (Lobas, 2006; Chaudry et al., 2008), there is a lack of focus on the *nature* of physician leadership. This paper proposes that a key factor in how physicians understand their leadership roles is tied to the construction of a leadership identity, which shapes their understanding and enactment of their role as a leader. Identity is an ongoing process of framing, based upon interactions with others and the environment (Foreman and Parent, 2008).

The differentiation in identity from a clinician to a leader offers a unique perspective of study that could greatly impact how we understand physician leadership. The challenge for healthcare organizations concerned with improving physician leadership goes beyond selection and development (Stoller, 2009), with a greater focus needed on how physicians understand and construe their roles as leaders. As a unique group of highly educated, professionals that place such a high value in their individual role as clinicians, the nature of physician leadership is shaped by how they embrace and understand their role as a leader. The findings of this study may also be applicable to other professional services leaders who are part time and/or temporary, while they retain their professional role as an individual contributor.

To better understand the nature of physician leadership, this study seeks an understanding of the impact of role conflict, as well as role endorsement, upon physician leader participation. It offers a model, which theorizes that two aspects of positive affect (compassion and vision) mediate the relationship of role conflict and role endorsement upon participation and seeks to validate

these hypotheses based upon responses from 677 physician members of the American College of Physician Executives.

The understanding of the nature of physician leadership is an important topic to explore as it has implications at both the practitioner and theoretical level. While many theories of leadership exist, none specifically have sought to understand leadership from the perspective of an at times unwitting physician leader who is thrust into the role, which may be temporary and even part time.

This paper begins with a review of the literature on physician leadership, identity and role, positive affect and organizational participation. Building upon existing theory, a theoretical framework is developed, along with an associated set of hypotheses. The research methodology and sample are then presented, along with the analysis of results, as well as a discussion of findings. Finally, the paper concludes with a discussion of the implications to research and practice.

Theoretical Foundation

In this section, literature discussing physician leadership, the impact of positive relationships, identity and role will be reviewed.

Physician Leadership

Like many other professionals, physicians often assume part or full time leadership roles as department chairs, committee members, directors, and other administrative roles in hospitals and healthcare organizations. These leadership roles are often held within clinical departments or specific functions that operate somewhat separately from the larger organization (Lobas, 2006). There is a need for a higher level of involvement from a managerial perspective because of increasing pressure from the way medicine is "*determined,*" *"accessed,*" *"organized,*" *"monitored,*" *"delivered,*" and "*paid for,*"—and this need is being placed upon physician leaders (Montgometry, 2001).

Montgomery suggests that the intra-professional divisions between clinicians into areas of functional expertise may not be as relevant as the division of physicians into clinician and manager due to the changing structure of healthcare (Montgometry, 2001). This separation between clinical roles and physician leadership roles starts to look like two different professional groups. In addition, several physicians interviewed in this author's prior exploration cited excellent physician leaders as brilliant surgeons or outstanding researchers, not realizing the absence of including leadership competencies in their criteria for excellence. The connotation of leadership then seems to be understood by the physician as individual expertise and contributions rather leadership competencies. As far back as the fourth century BC, Plato's teachings inform us that the ideal leader is someone who commits himself to fellow citizens (Plato). The nature of physician leadership, therefore, may be explained by the focus of the profession being the physical wellbeing of their fellow citizens.

How then, can physician leaders be developed into successful organizational leaders? Physicians are educated and professionalized to value autonomy (Stoller, 2009; Blumenthal et al., 2012), yet in order to succeed as an organizational leader, collaboration and leadership competencies are necessary.

The increasingly complex environment in healthcare also requires more inter-departmental collaboration VanVactor (2012). Yet, Hall (2005) notes that there is an inherent challenge for members of different professional groups to collaborate, as they have different cognitive maps, which develop as a condition of their professionalism. Physician leaders hold a unique opportunity to serve as boundary-spanners, because they speak the language of and relate to both administration and clinicians (Sherrill, 2000). In order to bridge the gap between administration and medical staff, physician leaders must face the "tribal stigma" (Goffman, 1963) that exists between members of different social groups.

Affect

The field of positive psychology has aided in our understanding of what leads to individuals thriving emotionally at the individual, community and societal level (Seligman and Csikszentmihalyi, 2000). In this paper, we are particularly concerned with the role of affect, which Tellegen et al. (1999) define as positive and negative emotional activation. In an effort to define affect, Watson and Tellegen (1985) constructed a model with a two-dimensional structure that plots high and low positive and negative affect, as well as two other dimensions of un/pleasantness and dis/engagement. See **Figure 1** for a representation of this model. It is an important consideration that "positive affect" and "negative affect" are separate dimensions- not at opposite ends of the same continuum. Psychologists have found evidence that positive affect is not the bipolar opposite of negative affect: "it seems that a human being is not a pendulum, moving between opposite feelings" (Russell and Carroll, 1999, p. 3), rather an individual can have feelings of happiness and sadness at the same time.

Boyatzis has argued that Positive Emotional Attractors (PEA) and Negative Emotional Attractors (NEA) are critical in affecting behavior, influencing one on a cognitive, emotional, social and physiological basis (2008). Positive and negative emotional attractors are described by Boyatzis (2008) as destabilizing forces that create psycho-physiological states that drive the change process. These "strange attractors," first introduced by Lorenz (1963), "create forces that pull our behavior, attitudes, and feelings around them, but not into them (Boyatzis, 2008). According to Boyatzis (2006), experiences in the Positive Emotional Attractor (PEA) are thought to arouse neuro-endocrine systems, and this stimulation leads to higher cognitive functioning, increased openness to ideas, emotions and people, positive emotional states, and increased immune health. Conversely, the stimulation of the Negative Emotional Attractor (NEA) leads to a decrease in cognitive function, perception and immune function (Boyatzis, 2006). As noted in the Watson and Tellegen model, the PEA and NEA model is grounded in the theory that positive and negative affect are not merely bi-polar (Russell and Carroll, 1999), but instead are represented by three different dimensions (Boyatzis, 2008). Jack et al. (2013) demonstrated the neural response to coaching to either the PEA or NEA; the PEA coaching activated the parasympathetic

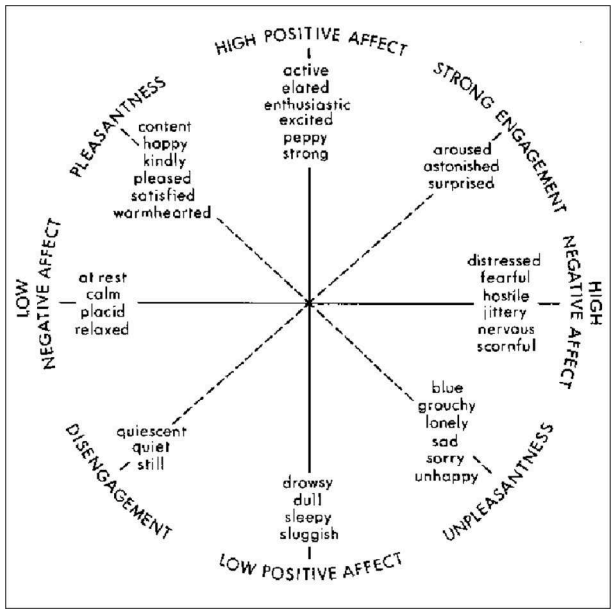

FIGURE 1 | Watson and Tellegen's (1985) **two-dimensional map.**

nervous system (PNS), while the NEA activated the sympathetic nervous system (SNS). Their results show the relationship of positive affect to behavior is a physiological one, not solely based in theory. The key is to have the proper ratio of the negative and positive attractor for effective functioning.

The PEA is related to a shared vision, compassion and overall positive mood (Boyatzis and McKee, 2005), and refers to the relationship of the leader and the followers, such that both the leader and follower are affected, and it has been shown to impact the follower's job satisfaction, organizational commitment, turnover intention, health, effort, learning, and development (Bass, 1990; Gerstner and Day, 1997; Bommer et al., 2004). Shared vision is the process in which the PEA moves between people. The perception of shared vision, one of the sub-scales of the P/NEA survey (Boyatzis, 2008), has been shown to predict championing behavior (Clayton, 2009), success in family businesses (Neff, 2011), and even increased organizational engagement (Mahon, 2010).

Compassion, another sub-dimension of Boyatzis' P/NEA measure (Boyatzis, 2008) plays a fundamental role in our human existence, and is vital to our humanity (Himmelfarb, 2001). Boyatzis (2011) define compassion as "an interpersonal process that involves noticing another person as being in need, empathizing with them and acting to enhance their well-being in response to that need." While compassion has been studied for thousands of years within philosophy, sociology and religion, its value has often been overlooked within organizations (Kanov et al., 2004). Compassion is essential as a connection between individuals within an organization (Frost et al., 2000). Just as compassion is an element in ideal physician-patient relationships (Rayburn, 2006), physicians who take on leadership roles must also value the importance of compassion in relationships with the other physicians they work with and lead.

Therefore, the following hypotheses are proposed:

Hypothesis 1. Shared vision has a positive effect upon an increased level of participation in leadership activities.

Hypothesis 2. Compassion has a positive effect upon an increased level of participation in leadership activities.

Hypothesis 3. Mood has a positive effect upon an increased level of participation in leadership activities.

Identity, Professionalism, and Role

Stets and Burke (2000) demonstrated that aspects of identity theory and social identity theory can provide a more comprehensive view of the self than either individual theory; therefore we should look to *both* theories to understand the social construction of identity for physician leaders. Central to identity is the self within the role, as well as the meanings associated with that role Burke and Tully (1977). The individual's identity is formed by the reflexive self-categorization and identification as a member of a group or role (Stets and Burke, 2000). The impact of professionalism is also explored, which is so distinct for physicians beginning with their white coat ceremony in medical school and continuing throughout their career, and how these influence role factors of role conflict and role endorsement.

Individuals define their identity through membership within various groups, such as work groups, organizations (Tajfel and Turner, 1985) and as members of a profession (Tajfel and Turner, 1985; Ashforth and Mael, 1989), and social settings determine the characteristics of people likely to be in that environment (Goffman, 1963). Physicians' social identification then places them (and others) into categories of classification within their environment and separates themselves as physicians from certain "others" in the organization.

According to Larson, the focus upon the uniqueness and specialization of the role exaggerates the "dignity" of the profession (Larson, 1979, p. 490), forming the professional self. The individual, in this case the physician, adopts an identity focused on the primary function (as a clinician), which is given a superior priority and distinction. Larson observes that professionals are "locked in by their vocational choice, by the particular mystique of each profession, and by their whole sense of social identity" (Larson, 1979, p. 490). While physicians, managers, and administrators are all members of the greater organization and health care community, each sees themselves as in terms of their profession, which "confines the professional" to that primary identity (Larson, 1979).

This social classification process begins in medical school. Physicians are not only gaining technical expertise, but are also being socialized into a profession and assuming their identity as a physician (Hall, 2005). Individuals assign themselves to a classification for emotional value (Tajfel, 1974) which is predicated on the respect that they receive (Ashforth and Mael, 1989). When they then shift into roles of physician-leadership, the majority hold on to their primary identity of physician (Montgometry, 2001). The "value" of their identity lies in their

expertise and education as a physician, which has been reinforced through their professional group.

Social identity theory explains that the process of self-categorization accentuates the similarities of those belonging to the same category and the differences of those in different categories (Turner, 1985). Thus, people are depersonalized and construed as in-group and out-group members (Hogg et al., 1995). As physicians adopt a universal persona, depersonalization is *not a negation* of identity. Instead, the individual changes the perception of his/her identity to that of the group he/she identifies with (Hogg et al., 1995). As a result of self-categorization, individuals create prototypes to represent social groups. These prototypes are defined by the greatest similarities between group members, focusing on the positive attributes of members, as well as the differences that set the group apart from others (Hogg and Terry, 2000).

Not only are physicians then confined to a professional group that excludes others, but there is reluctance to become subordinate to those outside of their group (Bate, 2000). This may even extend to their view of their own peers in leadership roles. As physicians accept leadership roles, they are expected to support organizational goals, which may be different than their own goals as clinicians, as well as those of their clinical colleagues. As a result of their professionalization, physicians themselves impact the organization by influencing the perception of the roles—including those of physician leaders—within it. Professionalism does not only impact the understanding of the role for an individual, it affects how the role influences identity. Holden et al. (2012) suggest that professional identity formation is a series of processes that includes professionalism, psychosocial identity development and formation, which transforms the individual from a layperson to physician. An understanding of how an individual understand their own identity is important in assessing the impact of role factors upon enacted behavior.

Social identity theory aids our understanding of the nature of physician leadership with respect to the multiple roles they must assimilate, which does not specifically address "roles," but does set out "to explain individuals' role-related behaviors" (Hogg et al., 1995). Through a series of reflexive social interactions, individuals acquire meaning; thus clarifying their own roles as well as the roles of others (Burke and Reitzes, 1981). A leadership role is conceptualized by the individual in response to the expectations of others (Boyatzis, 1982), and as physicians adopt their own role identity, they interact with other physicians, nurses, administrators and professionals within the organization, developing self-meaning and definition through their actions and the social structure.

The role of physician, or leader, then creates a norm for behavior as an incumbent of that role, and in turn "the self as a structure of role-identities… operate[s] as a social force, affecting the structure of society by affecting behavior in important ways" (Callero, 1985, p. 203, citing Rosenberg, 1981). The self is now considered to be "multiple, varied, changeable" and in fact may adapt to the context (Salgado and Hermans, 2005, p. 3). Thus, the construction of meaning for an individual is dependent upon relationships with other people, including an individual's meaning of self (Cross et al., 2000; Salgado and Hermans, 2005).

DeRue and Ashford (2010) proposed that, "if a person claims leadership in a setting but others do not reinforce that claim with supportive grants… leadership identity construction (is) insufficient for a leader-follower relationship to emerge," therefore it is expected that physician leaders who hold part time leadership roles, as well as full time clinical roles relate to physician managers as "tribe" members, and often not as leaders. However, the sub-constructs of the positive emotional attractor: vision, compassion and mood, may encourage a more flexible outlook for the individual to adapt their understanding of their role as a physician leader and embrace their secondary identity to engage more as a leader. See **Figure 2** for a representation of role endorsement.

Hypothesis 4. *Vision partially mediates the positive relationship of role endorsement upon participation.*

Hypothesis 5. *Compassion partially mediates the positive relationship of role endorsement upon participation.*

Hypothesis 6. *Mood partially mediates the positive relationship of role endorsement upon participation.*

Moreover, identity theory informs us that that role-identities are hierarchically positioned, thus having differing effects upon behavior (Callero, 1985; Hogg et al., 1995). Therefore, even when an individual accepts additional identities, there is still a primary identity that may inform behavior. This may be the source of role conflict for physicians.

"According to the chain-of-command principle, organizations set up on the basis of hierarchical relationships with a clear and single flow of authority from the top to the bottom should be more satisfying to members and should result in more effective economic performance and goal achievement than organizations set up without such an authority flow" (Rizzo et al., 1970). This idea was established decades ago, yet the premise still remains. Role theory offers that individuals become stressed and dissatisfied when the behaviors expected in their role are inconsistent (Rizzo et al., 1970). Role conflict therefore occurs when the expectations of the role are contradictory (Hardy and Conway, 1978). The very structure of some hospital and healthcare organizations may then create role conflict.

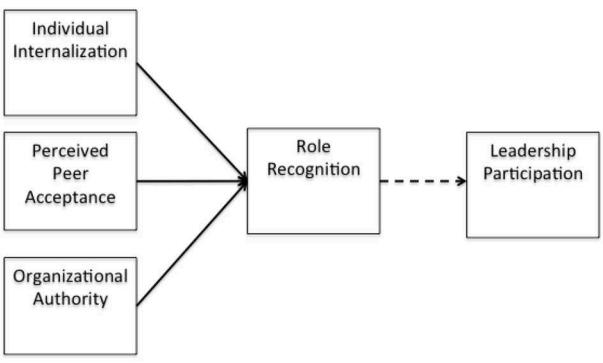

FIGURE 2 | Role recognition.

Increasing the level of participation and improving performance is in effect dependent upon a greater understanding of role acceptance and conflict. While many scholars have studied role conflict (Kahn et al., 1964; Rizzo et al., 1970; House and Rizzo, 1972; Jackson and Schuler, 1985; Friedman and Podolny, 1992), questions still remain as to what the impact of role conflict is, and how to measure the consequences.

Negative emotions, such as those associated with role conflict, are correlated with a lower likelihood of cooperation (Cremer and Hiel, 2006). Yet, job satisfaction has been found to mediate role stressors to organizational citizenship behavior. In this analysis, the impact of role conflict is of interest as one form of role stressor, and its affect upon participation, which is a sub construct of organizational citizenship behavior. Therefore, the following hypotheses are explored:

Hypothesis 7. *Vision partially and positively mediates the negative relationship of role conflict upon participation so that the relationship of compassion to participation is positive.*

Hypothesis 8. *Compassion partially and positively mediates the negative relationship of role conflict upon participation so that the relationship of compassion to participation is positive.*

Hypothesis 9. *Mood partially and positively mediates the negative relationship of role conflict upon participation so that the relationship of compassion to participation is positive.*

Methodology

To explore the nature of physician leadership, a survey-based study was conducted to validate the hypotheses. A psychometric survey methodology was used that maps individual responses to the underlying concepts within the model. In an effort to capture representative data on physician in leadership, the membership of the American College of Physician Executives (ACPE) was surveyed.

Measurement of Research Variables

To ascertain and measure the relevant dimensions of the model, this process proceeded in four stages: development of the survey instrument, development of measurement scales, pretesting to assess validities of the survey instrument and data collection from a sample of physicians with membership in the American College of Physician Executives (ACPE), the largest health care organization for physician executives in the US.

Where possible, construct items were based upon previously validated measures; otherwise, indigenous items were developed based on a review of pertinent literature and using a procedure consistent with prior studies (Churchill, 1979; Koufteros, 1999). All first-order constructs were specified with reflective indicators, except for Participation. Participation is defined by five formative indicators adapted from the work of Van Dyne et al. measure of organizational citizenship behavior Van Dyne et al. (1994), with the belief that these indicators cause participation.

Construct Development

Although most scale items were adapted from those in the existing literature with slight modifications to reflect the focus of this study, a new scale was developed to measure role endorsement.

Independent Variables: Role Conflict and Role Endorsement

Role conflict items were adapted from the work of Rizzo et al. (1970). The scale contained 15 items, which were measured on a 5 point scale ranging from 1—"Strongly Disagree" to 5—"Strongly Agree." Four role conflict items were selected that were believed to be most suited to this inquiry.

Role endorsement was informed by the author's earlier work on physician leadership and adapted from DeRue and Ashford (2010). Six items were developed to measure the claiming and granting of leadership within peer relationships, as well as from an organizational perspective.

Dependent Variable: Participation

A multi-item construct of organizational citizenship behavior was adapted using participation as a major component. The five measures of participation were adopted from the original 54 items in Van Dyne et al.'s measure for organizational citizenship behavior Van Dyne et al. (1994). These items were measured on a 5-point scale ranging from "1-strongly disagree" to "5-strongly agree."

Mediating Variable: Positive Emotional Attractor

To measure positivity, Boyatzis' PNEA scale (2008) was used, which includes three subscales, vision, compassion and overall positive mood. All items were measured on a 5-point scale with "strongly agree" at the extreme positive end and "strongly disagree" at the opposite end of each scale.

Controls

Several controls were also included, including role, tenure in role and in organization, age and gender. Rousseau and McLean Parks (1993) noted that employees who have long tenure in their organizations tend to have strong organizational ties, and it has been found that the confidence developed in a role leads to increased competence and feelings of organizational commitment (Salancik, 1977). Age and gender have also been used in numerous studies across disciplines to assess impact upon results, and these were included to ensure the accuracy of the data.

The multi-items for each of the constructs are summarized in Appendix A and the relationships of the model represented in **Figure 3**.

Sample

The population sampled was the membership of the American College of Physician Executives (ACPE)*, which is the largest organization for physician executives in the nation. The ACPE is accredited by the Accreditation Council for Continuing Medical Education and has greater than 9000 members from the United States and 45 other countries, holding roles including chief

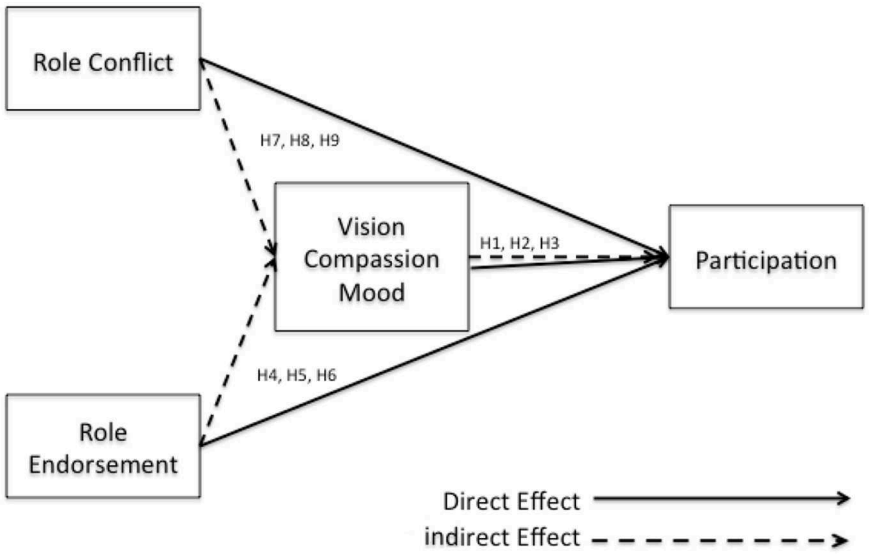

FIGURE 3 | Conceptual model.

medical officer, chief executive officer, vice president of medical affairs, directorships, as well as others (ACPE Website).

The survey was delivered online, which was emailed out to members of the American College of Physician Executives (ACPE) by the management of the organization. The ACPE has over 9000 registered members who are self-selecting into the organization, with the requirement of full members being allopathic (MD) and osteopathic (DO) physicians; dentists (DDS or DMS); and podiatrists (DPM).

Individual respondents were provided a URL to the survey, which was deployed through Qualtrics, a popular online survey research tool. Of the 9083 contacts that received the email with the survey link, 8672 emails were delivered, 2148 were tracked as opened, 1030 clicked on the link for the survey, and 936 physicians started the survey. The sample was then reviewed for missing values resulted in a final sample size of 677.

The data was collected beginning in July 2011, with 547 males and 128 females responding (81 and 19%, respectively). Of the respondents, 420 stated their leadership role as part time and 222 as full time, with the remaining responding with "not applicable." 308 (46%) of respondents stated their age as 55 or older and of that age group, 240 reported their role as full time. The American Medical Association (AMA) delegates reported 79.4% as male and 20.6% as female and 77.3% as over age 50 as of December, 2010 (AMA, 2011, Annual Meeting), suggesting that this sample is objectively representative of the population of physicians in leadership, as well as the surveyed population.

Measurement and Instrument Development

In developing the survey instrument, a list of itemized questions was sent to 10 respondents, including several physician leaders, and asked them to comment on the flow, clarity, timing, and the respondents' interest through completion rate. Two of the items were modified to ensure that exact meaning was conveyed and understood. The pre-test was then followed by asking three individuals to read the questions aloud and answer them in order to assess cognitive difficulties presented by the survey items (Bolton, 1993). The language used in one item was also adjusted for clarification.

Next, a pilot survey was conducted with 65 physicians working in four hospitals within a single healthcare organization to perform an exploratory factor analysis (EFA) for each hypothesized construct within the model. The pilot survey was carried out online. The items were found to be acceptable for factoring within each construct and no adjustments were made following this step.

Data Screening

Prior to analysis, missing values were removed related to the latent constructs. The data was screened for linearity, normality, multicollinearity, skewness, and outliers and found the data adequate for analysis. 260 data points were dropped due to missing values. There were no significant outliers, as the survey contained primarily Likert scales.

Statistical Analysis

The research model was tested using Partial Lease Squares (PLS-Graph, v3.0, Build 1060, Chin and Frye, 1998). An assumption for a covariance based SEM analysis is that the items used to measure a latent variable are reflective (Chin, 2010). "Since PLS explicitly estimates the outer weights to form construct scores, modeling formative indicators is much less problematic" (Chin, 2010, p. 664). Jarvis et al. (2003) provide a set of four decision rules based on: (1) direction of causality based on conceptual definitions, (2) interchangeability of the indicators, (3) co-variation among the indicators, and (4) nomological net of the indicators. Taken together, these rules can suggest either a reflective or formative model formulation. It was found that the dependent variable, participation, is formative in nature, therefore the use of PLS-Graph was necessary to analyze the model.

Measurement Model

Exploratory Factor Analysis- Reflective Constructs Only

An EFA (exploratory factor analysis) was performed using principal axis factoring and PROMAX rotation. Sample size was adequate with 677 usable responses across 28 items. The Kaiser-Meyer-Olkin (KMO) value was 0.932 and the Barlett's Test of Sphericity was significant ($x^2 = 8935.759$, $df = 378$, and $p < 0.000$), indicating sufficient intercorrelations for factors to emerge. The analysis was run initially by selecting factors with Eigen Values over 1. Using this criterion, five latent constructs hypothesized *a priori* in the model, emerged from the data. The constructs explained a little over 48% of the variance within the data. A sensitivity analysis was also conducted by re-running the EFA specifying 6 and 7 factors, but found considerable cross-loadings, in particular mood loaded across three factors, with both negative and positive results. As this was contrary to theory, mood was eliminated from the final model.

The pattern matrix for initial convergent and discriminant validity. Criterion was employed as designated by Hair et al. (2011), which states that factor loadings in the range of 0.3 to 0.4 are considered acceptable for interpretation of structure, and given the sample size of 677, each loading over 0.3 is considered statistically significant. The criteria used by Igbaria et al. (1995) was used to identify and interpret factors which were: each item should load 0.50 or greater on one factor and 0.35 or lower on the other factors. It was found that one item in the role endorsement construct was a bit low and had one cross loading. Yet, the cross loading was greater than 0.2 and therefore the item was retained into the confirmatory factor analysis (CFA). See **Table 6** for full results of the confirmatory factor analysis.

After eliminating one item (role endorsement item 1), 27 items measured five factors—four reflective and one formative. **Table 1** shows the reliability of each of the four reflective factors. **Table 2** provides the correlations between factors. The EFA results provided the foundation for further testing using PLS-Graph (v3.0, Build 1130, Chin and Frye, 1998).

Partial Least Squares (PLS), a structural equation modeling (SEM) technique, was used for testing the research model. PLS approach was superior to other SEM approaches for this study because of its flexibility on distributional assumptions, its small sample size requirements, and its strength on complex predictive models (Chin and Newsted, 1999). PLS is a regression-based technique with roots in path analysis (Fornell and Larcker, 1981; Chin and Frye, 1998); however, it has emerged as a powerful approach to studying causal models involving multiple constructs with multiple indicators. This approach facilitates testing of the measurement model and the structural model simultaneously. The measurement model revalidated the instrument and determined how each manifest variable's loaded on the construct that it measured. The structural model was estimated using the PLS algorithm with bootstrapping (1000 resamples).

TABLE 1 | EFA measurement model: reflective constructs.

Construct	Number of items	Loadings	Cronbach's alpha
Role conflict	4	−0.736, −0.652, −0.591, −0.541	0.728
Role endorsement	5	0.866, 0.854, 0.721, 0.695, 0.464	0.872
Vision	8	0.876, 0.853, 0.818, 0.805, 0.689, 0.604, 0.590, 0.586	0.912
Compassion	6	0.773, 0.767, 0.656, 0.620, 0.518, 0.437	0.841

Assessment of the Measurement Model

To assess the psychometric properties of the latent constructs, a PLS measurement model was created. To assess convergent validity, the internal consistency reliability (ICR), the average variance extracted (AVE), and the item factor loadings for the reflective constructs were assessed.

Estimation of Internal Consistency

The survey employed multi-item scales to measure the reflective first-order factors. The measurement properties for the reflective constructs were examined by conducting confirmatory factor analyses using PLS. To assess the internal consistency of the reflective factors, AVEs, coefficient alpha and composite reliability measures were assessed. For participation, it was not possible to assess validity and reliability, since the very nature of formative measurement renders irrelevant traditional assessments of convergent validity and item reliability.

Accordingly, as seen in **Table 4**, coefficient alpha values ranged from 0.786 to 0.887. Likewise, the composite reliabilities for all reflective measures were high, ranging from 0.831 to 0.929. The recommended level for establishing a tolerable reliability is the 0.70 threshold. All reflective construct coefficients were above 0.831 showing strong reliability.

Tests were conducted to evaluate the convergent and discriminant validity and the reliability of reflective measures.

TABLE 2 | Correlations.

	Role conflict	Role endorsement	Vision	Compassion	Participation
Role conflict	1				
Role endorsement	−0.414	1			
Vision	−0.433	0.644	1		
Compassion	−0.389	0.568	0.642	1	
Participation	−0.111	0.357	0.289	0.291	1

TABLE 3 | Path analysis, hypotheses and effect sizes.

Hypothesized relationship	$R2$	t-Statistic	f^2	Strength
H7: Role conflict → Vision	0.448	6.498	0.0598	Small effect
H4: Role endorsement → Vision	0.448	19.0748	0.4710	Large effect
H7: Role conflict → Compassion	0.348	4.7257	0.0414	Small effect
H5: Role endorsement → Compassion	0.348	14.4921	0.3037	Medium effect
H1: Vision → Participation	0.107	2.2769	0.0134	No effect
H2: Compassion → Participation	0.107	3.444	0.0269	Small effect

TABLE 4 | Mediation results of compassion and vision.

Mediated path	Path coefficient	*t*-Statistic	StdErr	Effect
H4: RE → P	0.364***	8.2065	0.0452	Partial mediation
RE → VI	0.572***	19.2890	0.0297	
VI → P	0.149*	2.2789	0.0654	
H5: RE → P	0.364***	8.2065	0.0452	Partial mediation
RE → COMP	0.495***	14.3085	0.0346	
COMP → P	0.210***	3.5177	0.0597	
H7: RC → P	0.033*NS*	0.2773	0.0433	Full mediation
RC → VI	−0.186***	6.2113	0.0382	
VI → P	0.149*	2.2789	0.0654	
H8: RC → P	0.033*NS*	0.2773	0.0433	Full mediation
RC → COMP	−0.177***	4.6366	0.0382	
COMP → P	0.210***	3.5177	0.0597	

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Convergent validity of the constructs is assessed by examining the constructs factor loadings, composite scale reliability and average variance extracted (Fornell and Larcker, 1981; Chin and Frye, 1998). Loadings in excess of 0.70 on their respective factors are interpreted to indicate convergent validity (Straub et al., 2004). A second indicator of convergence was also employed. Here, a value above 0.50 for the average variance extracted (AVE) for each construct is assumed to indicate sufficient convergence. As seen in **Table 2**, results indicate that both of these conditions have been met. Discriminant validity is demonstrated when the square root of the AVE is greater than the correlations between constructs (Bollen, 1989). Note that although two items within the participation construct were found to be not significant (PART 3 and PART 4), the items were retained, as removal would alter the nature of that formative construct.

The square root of AVEs ranged from 0.553 to 0.663 for reflective constructs. For a second test of discriminant validity, individual items may be assumed to possess sufficient discriminant validity if they load higher on their own respective construct than on any other latent variable (Gefen et al., 2000; Straub et al., 2004). This was true for all items. Based on both tests, the measures possess sufficient discriminant validity. Consequently, evidence for internal consistency and the scales reliability were provided by the results, which can be found in the appendix.

Dimensionality and Convergent and Discriminant Validity

It was expected that items belonging to the same scale would have factor loadings exceeding 0.70 on this common factor. As indicated by the results in **Table 6**, although all the loadings were statistically significant based on *t*-statistics generated from running a bootstrap on the data, none were below the acceptable threshold (0.60). Moreover, the average variance explained (AVE) was below 0.50 and considered unacceptable.

As a result of the construction of a formative variable, "conventional procedures used to assess the validity and reliability of scales composed of reflective indicators (e.g., factor analysis and assessment of internal consistency) are not appropriate for composite variables (i.e., indexes) with formative indicators" (Diamantopoulos and Winklhofer, 2001). One of those measures that is not appropriate for formative constructs is AVE, which is the measure of the amount of variance that indicators provide to the latent variable, relative to the measurement error. For those reflective constructs, AVE should be 0.50 or greater, which explains 50% or more of the variance (Chin, 2010). The composite reliability (CR) for each construct is found in **Table 6** (below). The CR for each reflective construct exceeds the acceptable threshold (>0.70) and the average variance extracted (AVE) confirms the reliability of the indicators and demonstrates convergent validity.

Common Method Bias

A test for common method bias was performed, as survey item responses were all self-reported. In order to test for common method bias, Harman's one-factor test was applied, including all items in the model in a principle components factor analysis (Podsakoff et al., 2003). If one factor accounts for the majority of the covariance, common method bias is present. Based upon Eigenvalues greater than 1, 5 factors emerged, which explained 48% of the variance, therefore it appears that there is no common method bias. The correlations matrix was also examined, as common method bias can also be assessed from these values. Correlations above 0.90 are indicative of a common method bias problem (Pavlou et al., 2007). No correlations were found to be near the 0.90 level, which suggests that there is no evidence of common method bias.

Structural Model

The test of the structural model includes estimating the path coefficients and the R^2-values. The path coefficients, which indicate the strength and direction of the relationships among the variables, should be significant and directionally consistent with expectations. The R^2, which represents the proportion of variance in the endogenous variables that can be explained by the antecedents, demonstrates the predictive power of the model. Collectively, R^2 and path coefficients indicate how well the model fits the empirical data (see **Table 3** for effect sizes). To assess whether the main effects were significant, bootstrap resampling was performed. Bootstrapping (677 resamples) was used to create sub-samples from which the *t*-values associated with various inner and outer model paths in the model were obtained (Chin, 2000).

A series of tests were run to investigate the predictive power of the structural model (Chin and Frye, 1998). The model was tested for the change in R^2, to determine the substantive impact of each independent variable upon the dependent variables. To do so, f^2 was calculated in the following manner:

$$f^2 = \frac{R^2 \; included - R^2 \; excluded}{1 - R^2 \; included}$$

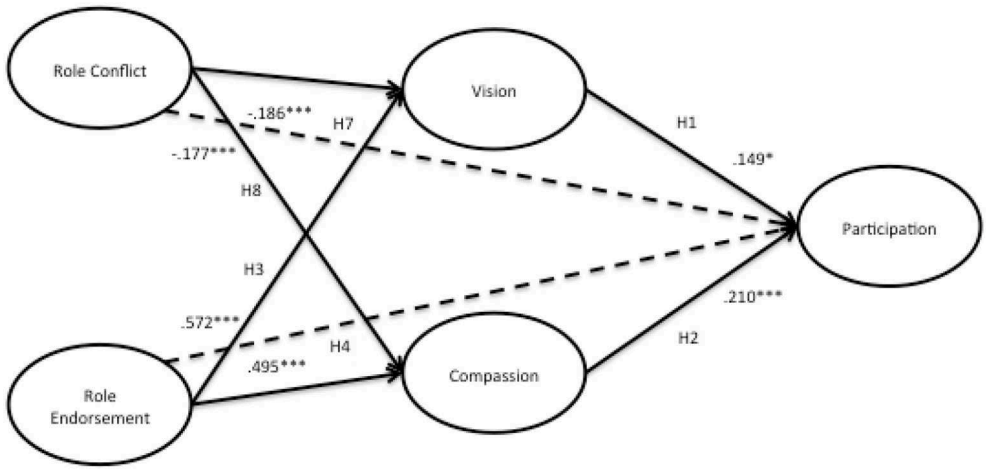

FIGURE 4 | Structural model. *$p < 0.05$; ***$p < 0.001$.

TABLE 5 | Results.

Hypothesis	Result
H1: Shared vision has a positive effect upon an increased level of participation in leadership activities	H1: Supported
H2: Compassion has a positive effect upon an increased level of participation in leadership activities	H2: Supported
H3: Mood has a positive effect upon an increased level of participation in leadership activities	H3: Not Supported
H4: Vision partially mediates the positive relationship of role endorsement upon participation, such that the effect is stronger	H4: Supported
H5: Compassion partially mediates the positive relationship of role endorsement upon participation, such that the effect is stronger	H5: Supported
H6: Mood partially mediates the positive relationship of role endorsement upon participation	H6: Not Supported
H7: Vision partially and positively mediates the negative relationship of role conflict upon participation	H7: Vision fully mediates the relationship between role conflict and participation
H8: Compassion partially mediates the negative relationship of role conflict upon participation	H8: Compassion fully mediates the relationship between role conflict and participation
H9: Mood partially mediates the negative relationship of role conflict upon participation so that the relationship of compassion to participation is positive	H9: Not Supported

R^2 represents the amount of variance in the construct that is explained by the model. Cohen (1988) recommends values of 0.02, 0.15, and 0.35 to denote small, medium, or large effects at the structural level. The causal four-steps method developed by Baron and Kenny (1986) was used to test for mediation effects, presented in **Table 4**, below. Analysis of our structural model revealed four mediated relationships where a significant independent variable (IV)—dependent variable (DV) relationship was mediated. Please see **Figure 4** for the structural model.

Findings

See **Table 5** for the effect size of each relationship. Although the amount of variance explained by Participation is low ($R^2 = 0.107$), it should be noted that this is an exploratory model. All other effects are within the appropriate range (Cohen, 1988). The hypothesized structural model was tested in PLS and the results showed two negative and four positive relationships between constructs.

The final model, shown in **Figure 4**, shows the relationships and significant paths between constructs, as well as the R^2-values for each construct. The details of the structural model can be found in the Appendix.

The results structural model testing provide evidence to support H1 and H2, vision ($\beta = 0.149^*$) and compassion ($\beta = 0.210^{***}$), have a significant and positive relationship with participation. Vision plays a mediating role in the relationship of role conflict and role endorsement to participation. The direct effect of role endorsement to participation was significant, as was the indirect effect via both vision and compassion. Moreover, role endorsement showed a significant direct effect with the vision ($\beta = 0.572^{***}$) and compassion ($\beta = 0.495^{***}$) mediators, and both vision ($\beta = 0.149^*$) and compassion ($\beta = 0.149^*$) had significant relationships with participation. These findings are therefore consistent with the hypotheses of partially mediated effects; therefore H4 and H5 are both supported.

TABLE 6 | PLS-CFA measurement model results.

Construct	Loadings or weight	Standard error	*t*-statistic	Composite reliability	Average variance extracted
Role conflict				0.831	0.553
RC1	0.8103	0.0238	15.4711		
RC2	0.8082	0.0276	14.451		
RC3	0.6396	0.0302	7.979		
RC4	0.7028	0.0282	11.35		
Role endorsement				0.907	0.663
RE2	0.6799	0.015	13.871		
RE3	0.8816	0.0089	29.3311		
RE4	0.7718	0.0103	20.4912		
RE5	0.8897	0.0090	31.4706		
RE6	0.8295	0.0096	26.5433		
Vision				0.929	0.621
VIS1	0.7027	0.0093	15.5335		
VIS2	0.7028	0.0082	16.5069		
VIS3	0.7931	0.0073	24.6386		
VIS4	0.8114	0.0068	23.5194		
VIS5	0.7949	0.0084	19.6612		
VIS6	0.8413	0.0064	26.8095		
VIS7	0.8111	0.0081	19.0003		
VIS8	0.8346	0.0075	21.0442		
Compassion				0.884	0.562
COMP1	0.7927	0.0124	18.4857		
COMP2	0.7182	0.0153	13.8153		
COMP3	0.7049	0.0139	15.7524		
COMP4	0.7980	0.0131	17.8802		
COMP4	0.6577	0.0190	9.0571		
COMP6	0.8127	0.0125	20.8252		
Participation					
PART1	0.5394	0.1217	4.4338		
PART2	0.6406	0.1264	5.0676		
PART3	0.0786	0.1233	0.6375		
PART4	0.0713	0.1094	0.6518		

Participation is a formative construct and values shown represent item weights.

It was hypothesized that the role conflict on participation would be partially mediated by both vision and compassion. Instead, it was found that the there was not a significant relationship from role conflict to participation, and role conflict showed a significant negative direct effect with the vision ($\beta = -0.186^{***}$) and compassion ($\beta = -0.177^{***}$) mediators, and as previously stated, both vision ($\beta = 0.149^{*}$) and compassion ($\beta = 0.149^{*}$) had significant relationships with participation. In summary, the results of indicate that role conflict has a direct effect on the mediators of vision and compassion, and both of these mediators has a significant relationship with participation, and that the direct effect of role conflict to participation is no longer significant. These results are consistent with the hypothesis of a full mediation for H7 and H8.

H4, H6, and H9 were not supported, as compassion, a sub-construct of the P/NEA Scale was not found to be significant.

Discussion

Insights were applied from positive psychology, social psychology and management literature to demonstrate that role factors, such as role conflict and role endorsement, are an important consideration in participation by physician leaders. Specifically, this study found support that role conflict negatively affects participation; while role endorsement has a positive relationship with participation.

These results also show support for the argument that positivity, in this instance vision and compassion, mediate the

relationship of role factors and participation. The largest effect found in this model was the relationship of role endorsement to vision, which may speak to the importance of an individual being endorsed in their role by both their peers and organization, in addition to their own certainty in their authority. This is inline with DeRue and Ashford's (2010) theory on the relational construction of identity. These findings show that including vision and compassion into the physician leadership framework, there is a noteworthy impact upon participation, which may precede effectiveness.

The findings also confirm the importance of the leader-member relationship, as it relates to the importance of the endorsement of the leadership role by peers. Specifically, the mediators of vision and compassion partially mediate the relationship of role endorsement to participation.

In testing the mediated relationship of role conflict and participation, surprisingly, full mediation was found in that that the association was completely accounted for by vision and compassion (James et al., 2006). This finding reinforces the importance of positive affect as a mediating factor for physician leaders. Boyatzis suggests that leadership development occurs in an iterative cycle of "discontinuities," which results in desired change (2008). This process is described by his intentional change theory (ICT) (Boyatzis, 2008). The shared vision of the ideal self, in this case the embracement of the secondary identity of leader by a physician, their peers and the organization in which they function, produces the desired change. These changes can occur not only at the individual level, but also at the didactic, group or organizational level, etc. (Boyatzis, 2008), therefore the opportunity exists for the healthcare organization to produce desired change that will result in the a shared vision at the group level. This shared vision is what allows for an increase in participation, and potentially effectiveness, and offers a mediating role in positively impacting the relationship of role factors, both positive and negative, to outcomes.

In the case of role conflict, the findings demonstrate the significant role that vision and compassion play within the model, as these mediating factors fully explain the relationship to participation. These results illuminate the importance of positivity in buffering role conflict, with the hope of increasing participation and potentially effectiveness. It was unexpected, however, that no significant differences were found in the model when testing for part time physician leaders vs. full time physician leaders. It was anticipated that there may be a difference in these results involving role conflict, as a previous inquiry by this author suggested that there was a distinct difference between how part and full time leaders viewed their role as it pertains to conflict. Role endorsement was also found to be an important factor in this study. DeRue and Ashford (2010) propositioned that leadership is a mutual influence process among individuals, expressly a socially constructed and reciprocal relationship between leaders and followers that is co-created and mutually reinforced.

Finally, it is curious that mood was not found to be significant in our testing, while the other two sub-scales of the P/NEA were found to be significant. It may be that mood is something physicians do not have the luxury of allowing to impact their work in life and death situations, therefore they have conditioned themselves not to allow affect from mood. With enough conditioning and time, this mood may not have a significant impact upon on a physician's behavior, whether they are acting in a clinical capacity or not.

Further research is needed to explore additional mediating factors, which may explain the relationship of role factors to participation.

Limitations

A potential limitation to this study is one that may actually strengthen the results- the fact that the sample is comprised of both part and full time physician leaders who have *self-selected* to join the ACPE due to their interest in bettering themselves as leaders. As such, these results may be even more important for healthcare leaders to consider, as even those physicians who are committed to leadership still may struggle with role factors that impact their participation. Although one may find issue with whether or not these results are representative of the entire physician leader population, the significance of the relationships in the model speak to the importance of role related factors and positivity for participation of physician leaders. The sample also is diverse with regard to roles and organization size and type, which may offer a more robust interpretation of the findings; however, a more focused study would have the ability to better analyze the impact of the organizational climate across the sample.

While great strides were taken to protect the results from common methods bias, no statistical test can guarantee such bias does not exist within these results (Podsakoff et al., 2003). If possible, an evenly distributed sample by role would be preferable, which may have led to further insight. An attempt was made at collection of 360° data; however, the responding sample of data from secondary respondents was too low to include in the results. Finally, the dependent variable, participation, could have been measured on a different scale rather a psychometric scale, which may have affected the results.

Implications for Practice and Future Research

As the first study to empirically examine the impact of relational and organizational endorsement of role, this study offers previously undiscovered insight as to the impact role perception to healthcare leaders concerned with physician leadership.

Practice

A practical implication of these findings is the understanding of the factors that influence the acceptance of a leadership identity for physicians by healthcare administrators, so that they may positively influence the interpreted psychological climate by physician leaders. If healthcare leaders know the factors that influence physician leaders to fully accept and engage in their role, they will be better prepared to assist in the development of physician leaders. Pratt et al. (2006) found that "achieving

alignment between identity and work is a fundamental motivator in identity construction" (2006, p. 255).

While psychological climate is an understanding of meaning by the individual, there are several ways in which an organization can influence that perception. At the organizational level, healthcare leaders may be informed by the impact of vision and compassion upon a physician leader's engagement and increase awareness surrounding these concepts. Leadership development workshops and programs can aid in an individual's self- awareness and an understanding of the factors that enable them to participate at a higher level and potentially become a better leader.

Physicians entering into leadership roles may also be informed by these findings. If physicians are aware of the factors that may limit or enhance how they enact their role as a leader, they may be better prepared to deal with the challenges. The basic realization that they may struggle with the acceptance of the secondary identity as a leader may alone be enough to encourage them to explore options to overcome the limitations to acceptance of that role.

Finally, these results should also inform medical school administrators and faculty members of the importance of including leadership skills and specifically emotional and social competencies into the curriculum. Chaudry et al. note "because leadership skill sets are not emphasized during training and practice, physicians, whose education is rooted in quantitative science, tend to address most problems with technical solutions" (Chaudry et al., 2008, p. 219).

Stoller et al. (2013) have suggested a curriculum to develop self-awareness in physicians, which begins as a medical student and develops the individual as they move from student, to physician, to member of a healthcare team and finally to a leadership role. I propose that this would greatly benefit a physician as they move through their career and into leadership roles; not only in developing their own emotional intelligence, but also to guide them in the process of adoption of a leadership identity and endorsement of their role.

Future Research

Future research should continue to examine the impact of role endorsement upon not only organizational participation, but also effectiveness. As well, although no significant differences were found between those in part and full time leadership roles within this study, this may be an aspect for further examination, especially with regard to individuals from a single organization.

It was anticipated going into this exploration that there may be a difference in the results involving role conflict for part and full time physician leaders; however, there were no significant differences found related to part or full time status. Therefore, a more detailed exploration of how part or full time status may be impacted by organizational climate may be beneficial.

This model only examined the linear relationships associated with the intervening effects. However, moderator relationships could be incorporated into future explorations involving these constructs.

Supplementary Material

The Supplementary Material for this article can be found online at: http://journal.frontiersin.org/article/10.3389/fpsyg.2015.00442/abstract

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

HYPOTHESIS AND THEORY
published: 15 April 2015
doi: 10.3389/fpsyg.2015.00412

Vision-based coaching: optimizing resources for leader development

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Leaders develop in the direction of their dreams, not in the direction of their deficits. Yet many coaching interactions intended to promote a leader's development fail to leverage the benefits of the individual's personal vision. Drawing on intentional change theory, this article postulates that coaching interactions that emphasize a leader's personal vision (future aspirations and core identity) evoke a psychophysiological state characterized by positive emotions, cognitive openness, and optimal neurobiological functioning for complex goal pursuit. Vision-based coaching, via this psychophysiological state, generates a host of relational and motivational resources critical to the developmental process. These resources include: formation of a positive coaching relationship, expansion of the leader's identity, increased vitality, activation of learning goals, and a promotion–orientation. Organizational outcomes as well as limitations to vision-based coaching are discussed.

Keywords: vision, leadership, executive coaching, positive emotions

OPEN ACCESS

Edited by:
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Reviewed by:
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George Washington University, USA

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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *01 December 2014*
Accepted: *23 March 2015*
Published: *15 April 2015*

Citation:
Passarelli AM (2015) Vision-based coaching: optimizing resources for leader development. Front. Psychol. 6:412. doi: 10.3389/fpsyg.2015.00412

Introduction

The practice of executive coaching has been widely adopted as a leader development strategy by organizations (Day, 2001; Feldman and Lankau, 2005; Bono et al., 2009). Executive coaching is generally defined as an individualized intervention in which a skilled professional works one-on-one with a leader to identify and achieve his or her personal development objectives (Peterson, 1996; Boyatzis et al., 2006; Coutu and Kauffman, 2009). Although these objectives primarily involve improving effectiveness at work (Feldman and Lankau, 2005), there is evidence that coaching engagements also frequently address non-work topics (Coutu and Kauffman, 2009).

Not surprisingly, the rapid growth of coaching practice has outpaced research (Bennett, 2006). Thus, many executive coaches structure their work by adopting frameworks and models that reflect popular practices in the industry rather than an empirical evidence base (Lowman, 2005). The pressure of a results-oriented business culture has exacerbated the lack of empirical evidence. Together these factors have contributed to the widespread acceptance of heavily assessment-based, goal-centered approaches to executive coaching. Traditionally, these approaches begin with presentation of assessment feedback (e.g., multirater/360-degree feedback, personality assessment data) from which goals are derived and outcomes are measured (Feldman and Lankau, 2005). Although feedback, goal setting, and progress evaluation are valuable components of a coaching process, this paper argues that an emphasis on the leader's vision for the future cultivates long-term development more effectively than an emphasis on his or her immediate goals.

This paper proposes vision-based coaching as a theory-based alternative to traditional coaching approaches. In contrast to using feedback as the primary intervention strategy, vision-based coaching emphasizes exploration and articulation of an individual's ideal self as the driver of the developmental process. Grounded in a growing body of research on intentional change theory (ICT;

Boyatzis, 2001, 2006, 2008), vision-based coaching holds that emphasizing one's personal vision evokes a growth-oriented psychophysiological state that gives rise to resources that are crucial to the developmental process. Specifically, vision-based coaching is postulated to improve over traditional approaches by accelerating the formation of positive coaching relationships, facilitating leader identity expansion, increasing vitality or energy for change, activating learning-oriented goals, and fostering a promotion-oriented self-regulatory stance in the person being coached. These motivational resources are proposed to contribute to long-term leader development and positive outcomes at the organizational level. The paper concludes by examining the limitations of vision-based coaching and offering recommendations for future research and practical implementation.

Connecting Theory to Practice in Vision-Based Coaching

Born out of a practical need to address the short-comings of existing leadership training interventions, executive coaching has evolved based on lessons of experience rather than theoretical grounding. As a result, a plethora of models exist in the practitioner literature, but relatively few have been subjected to rigorous scientific evaluation (for a review, see Grant, 2011). Although scholars have begun to link psychological traditions such as behaviorism, humanism, gestalt, and positive psychology to the coaching process in handbooks and practitioner magazines (e.g., Passmore et al., 2013), theory-based examinations of coaching phenomena are surprisingly absent from peer-reviewed journals. A recent exception is Gregory et al.'s (2011) application of control theory to explain how coaching can enhance behavior regulation via goal monitoring and feedback. The need for theory-based coaching models not only supports grounded practice but also advances the field of coaching through scholarly examination of coaching processes.

A potential shortcoming of coaching models derived from practice is their susceptibility to economic, technological, and socio-cultural influences of the business environment. For example, many coaching engagements begin with multirater (i.e., 360-degree) feedback and identification of short-term objectives (Feldman and Lankau, 2005), presumably in an effort to demonstrate return-on-investment. Additionally, popular coaching models such as GROW (Goals, Reality, Options, Wrap-Up/Way-Forward; Whitmore, 1992; Alexander, 2010) and GAPS analysis (Goals, Abilities, Perceptions, Standards; Peterson, 1996) advocate early identification of goals. These goals are derived through reflective exercises that provide information that is "personally relevant to achieving their goals" (Peterson, 1996, p. 79), such as writing a personal mission statement, values clarification exercises, or career preference assessments. Yet these models put a focus on the client's present reality, and—if used in isolation—may lead to a process of arriving at goals that circumvents the deep reflective work necessary for organizational leaders to identify their ideal selves. In fact, Jinks and Dexter (2012) suggest that many coaches "...do not spend enough time or use appropriate refinement around facilitating exploration of a broader picture of a client's preferred future before focusing on specific goals" (p. 103). Focused goals without the context of a long-term vision can result in short-term behavior modification but may lack the emotional commitment required to sustain one's strivings over an extended period of time. In executive coaching, this is of particular importance because development unfolds over the course of a leader's career, often requiring months or years to master various leadership capabilities (Lord and Hall, 2005).

Intentional change theory (Boyatzis, 2006, 2008) outlines a developmental process that occurs as leaders create enduring personal change and, hence, provides a foundation for executive coaching. Having evolved from self-directed learning theory (Kolb and Boyatzis, 1970), ICT addresses mechanisms of identity, affect, and physiology that underpin enduring behavior change. Specifically, ICT holds that sustained, desired change occurs in a dynamic, non-linear process punctuated by five discoveries or epiphanies: (1) discovery of the ideal self, (2) assessment of the real self as compared to the ideal self, (3) formulation of a learning agenda, (4) practice and experimentation with new behaviors, and (5) the support of resonant relationships (**Figure 1**; Boyatzis, 2008). Discovery of the ideal self entails articulating one's deepest aspirations, hopes, and dreams for the future, as well as positive aspects of one's core identity. The real self involves examining one's current strengths and weakness in relation to the ideal self. A learning agenda comprised of broad goals and specific actions is devised in order to bring an individual closer to his or her ideal self. Practice and experimentation is the step by which the learning agenda is implemented and refined. Finally, a set of trusting, growth-fostering relationships supports each discovery.

Fundamental to ICT is the notion that change must be *desired* to endure (Boyatzis, 2008). In situations where individuals' developmental efforts are in response to external standards, demands, or mandates, the desired end state is typically compliance or approval rather than lasting change. On the other hand, a clear image of one's ideal self provides a source of motivation and commitment to behave in ways that reduce the discrepancy between one's current state and the ideal (Higgins, 1987).

Drawing on this tenant of ICT, vision-based coaching advocates for the ideal self to play a central role in the coaching process. In practice this translates to guiding the leader through visioning exercises to explore his or her ideal self as a starting point for the coaching process. Visioning culminates with a detailed articulation of the ideal self, such as a personal vision statement. The personal vision statement then provides an artifact to be referenced and revised throughout other discoveries in the coaching process. A personal vision is distinct from goals in that it is more aspirational, holistic, and distal than goals, which tend to be more instrumental, targeted, and proximal. Goals do play a role in vision-based coaching, particularly in setting a learning agenda. In this way, vision-based coaching is not incompatible with other coaching modalities referenced above. In fact, ICT may provide a macro-structure in which more targeted coaching practices, such as motivational interviewing or cognitive-behavioral techniques, can take place.

The Role of Vision in Leader Development

The ability to create and convey a compelling vision for the organization is a cornerstone of transformational and charismatic

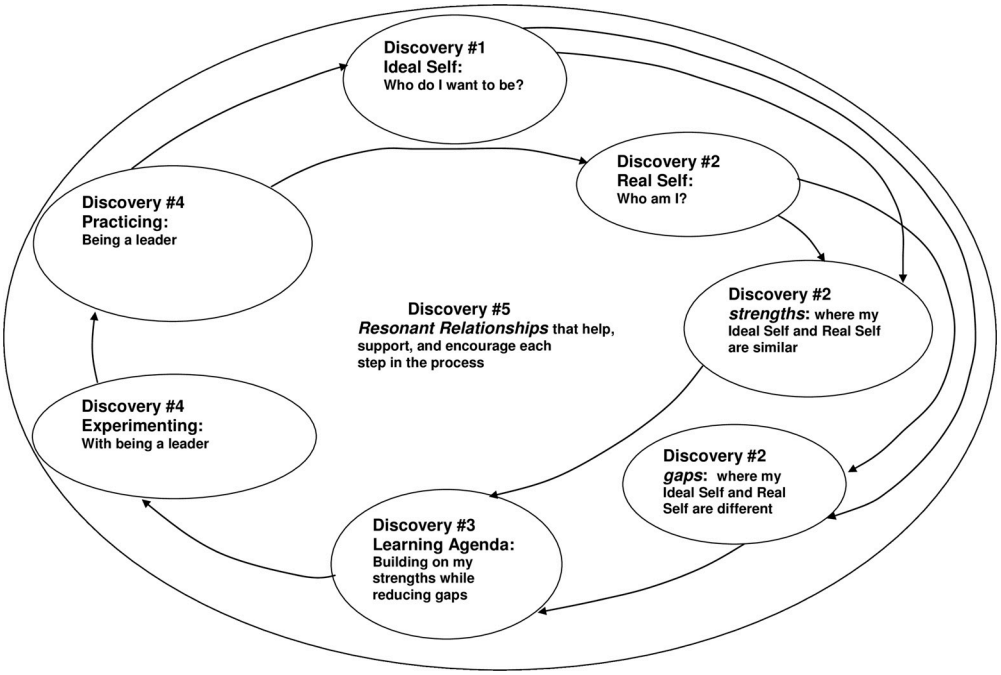

FIGURE 1 | Intentional change theory. Reprinted from Boyatzis (2008, p. 304). Copyright 2008 by the American Psychological Association. Reprinted with permission.

leadership (Conger and Kanungo, 1987, 1998; Bass and Avolio, 1993; Bass, 1998). An organizational vision is typically described as having the qualities of being idealized, future-focused, value-laden, and emotionally arousing (House, 1977; Rafferty and Griffin, 2004; Carton et al., 2014). A vision with these characteristics promotes a sense of shared identity among followers (Conger et al., 2000) and inspires ownership of the vision by clearly outlining how members play a role in the future of the organization (Stam et al., 2010).

The aim of vision-based coaching is not to focus on the organization but on the leader. Although a vision for the organization may be a component of the visioning process, discovering the ideal self necessitates exploring the leader's broader life context. Research suggests this may be foundational to articulating an organizational vision that is congruent with the leader's own values and self-image. For example, Shipman et al. (2010) found that self-reflection in late stages of formulating a vision for one's organization interfered with the ability to forecast or envision outcomes.

Vision-based coaching defines vision as the symbolic representation of one's ideal self. The ideal self, according to ICT, combines the future-focused nature of Higgins et al. (1994) *ideal self* with present state elements of Roberts et al. (2005) *best self*. Specifically, the ideal self is a possible self that is comprised of one's desired future (aspirations, dreams, passions, and purpose), core identity (values and individual characteristics), and the emotional driver of hope (Boyatzis and Akrivou, 2006). Greater awareness of the ideal self is accompanied by affirming thoughts, a connection to that which is deeply meaningful, and a sense of optimism and self-efficacy that correspond to an increase in positive emotions (Howard, 2006). The ideal self serves as a catalyst for the change process because it creates a discrepancy between one's current real self and the self to which one aspires (Higgins, 1987; Oettingen, 1995). It also gives rise to a growth-oriented psychophysiological state (Howard, 2006).

A coach assists clients in refining their personal visions through inquiry designed to evoke hope, mindfulness, compassion, or playfulness as one considers the question, *Who do I want to be?* Questions related to the ideal self encourage clients to reflect on their deepest aspirations and dreams (hope), people who have had a positive impact on their lives (gratitude and compassion), and/or their values and core identity (mindfulness). Ideal self-related questions can also have a spirit of fun and adventure (playfulness). This form of coaching has been referred to as *coaching with compassion* (Boyatzis et al., 2006, 2012).

Vision-based coaching stands in contrast to many traditional models of coaching that emphasize a client's *real self*, self-knowledge about one's current level of competence, including both strengths and weaknesses, informed by one's own assessment and the assessment of others (Taylor, 2006). Coaching that is primarily concerned with exploring the question, *Who am I now?*, tends to be prescriptive, relying on externally defined goals to guide the coaching process. Because this approach engenders short-term compliance rather than lasting change, it is referred to as *coaching for compliance* (Boyatzis et al., 2006, 2012). Although awareness of one's real self is essential to the change process, ICT argues that focusing on the real self in the absence of any exploration of the ideal self is counterproductive to the aims of coaching for leader development.

Psychophysiological States as Facilitating Mechanisms for Change

Movement through the intentional change process is propelled by vacillation between two psychophysiological states referred to as positive and negative emotional attractors (PEA, NEA; Howard, 2006; Boyatzis et al., 2015). Broadly speaking, the PEA plays a growth-oriented role in preparing the leader emotionally, cognitively, and physiologically for enacting change. The NEA, on the other hand, plays more of a protective role, signaling threats toward which resources should be allocated. Because the PEA and NEA have qualities that are both beneficial and detrimental to sustaining personal change, ICT holds that the sequencing and salience of the PEA and NEA have a profound effect on coaching effectiveness (Howard, 2006).

When the coaching process engages clients in exercises such as envisioning a desired future, reconnecting with personal values, discovering strengths, and expressing gratitude for supportive relationships, the PEA state is evoked (Boyatzis et al., 2006). The PEA state is associated with the experience of positive emotions, cognitive openness, and a greater influence of the parasympathetic nervous system on autonomic functioning (Boyatzis, 2008). Activated by experiences of hope, compassion, mindfulness, and/or playfulness, the PEA has one of two effects—either calming or energizing (Boyatzis and McKee, 2005; Ayan, 2009). The PEA is often associated with—but not limited to—discovery of one's ideal self. In the reality of executive coaching, the PEA state and the ideal self have a symbiotic relationship. Focusing on one's personal vision (ideal self) evokes a PEA state. In return, the PEA state facilitates the salience of the ideal among multiple possible selves. The PEA is a distinguishing feature of vision-based coaching and, hence, will be described in more detail in following sections.

The NEA state is associated with the experience of negative emotions, cognitive impairment, and a greater influence of the sympathetic nervous system on autonomic functioning (Boyatzis, 2008). The NEA activates the human stress response and negative emotions that arise from a focus on current deficits, fears, problems, or by a values misalignment (Boyatzis et al., 2006). The NEA is often invoked by the real or perceived need to comply with social expectations, pressures, and controls—the "ought" self—that suppress one's ideal self (Higgins et al., 1994; Howard, 2006). Certain situations that arise in the context of executive coaching are known to provoke a stronger NEA response than others. These situations involve the perception of a lack of control, the element of social evaluation, low efficacy or commitment to reaching a goal, and/or anticipation of events involving the previous three characteristics (Dickerson and Kemeny, 2004; Sapolsky, 2004; Boyatzis et al., 2009). The NEA is often associated with—but not limited to—the second discovery in the intentional change process, examining one's real self and, in particular, a focus on gaps or weaknesses. In the coaching process, the NEA can occur during evaluative processes, such as receiving and interpreting 360°feedback. In its most intense form, coaching to the NEA involves a coach imposing goals that serve the interests of an organization over the interests of the client. For example, the NEA will likely predominate when coaching is conducted with the intention of forcing leaders to change against their will or to comply with organizational mandates.

Having some negativity in the coaching conversation is natural and necessary for development. NEA states are beneficial to the change process when they call "attention to behaviors and events that compromise our effectiveness, threaten our safety, drain our resources, increase our stress, or require us to improve or protect ourselves" and are balanced by recurrent activation with the PEA (Howard, 2006, p. 663). However, highly intense or prolonged periods of NEA trigger individual defense mechanisms and may hinder or halt learning and development. Whereas passive negative emotions, such as sadness, lead to greater information processing than positive emotions, more activating negative emotions, such as anger, may lead to snap decision making and self-defeating behaviors that undermine the change process (Leith and Baumeister, 1996). In addition, negative emotions stemming from concerns of social exclusion have also been found to impair executive functioning, critical thinking, and reasoning (Baumeister et al., 2002). Prolonged periods of NEA not only hurt mental health, they also take a toll on one's physical health (Boyatzis et al., 2006).

Despite the best efforts of a coach to help a client focus on the positive, individuals tend to be drawn to the negative. This is the result of a well-documented "negativity bias," a psychological phenomenon by which negative events have a greater impact on individuals than positive events (Baumeister et al., 2001). Vision-based coaching provides a buffer to the bias for negative information by evoking PEA states first and frequently throughout the coaching process.

Affective, Cognitive, and Physiological Correlates of the PEA

As the name implies, the PEA has a positive emotional valence. Due to the temporary nature of positive emotions (Fredrickson, 2001), coaches must return frequently to the ideal self throughout a coaching engagement to ensure an overall tone of the PEA. Even fleeting experiences of positive emotions, such as joy, interest, contentment, and love, build an individual's resources to respond effectively to more negative emotional experiences (Fredrickson, 1998). Positive emotions serve as a buffer to chronic stress, providing support for behavioral, cognitive, and biological coping mechanisms (Fredrickson, 2001). Positive emotions contribute to building social bonds and increase the likelihood of cooperation and reciprocity in the coaching relationship (Barsade and Gibson, 2007). Positive emotions also facilitate persistence in learning to the point of mastery (Fredrickson, 1998; Immordino-Yang and Damasio, 2007).

Positive emotions support the developmental process through their links to cognition. For example, positive affective states increase pattern recognition capability, strengthen memory, and enhance creativity (Isen, 1987; Fredrickson, 1998). Positive emotions also broaden attention (Fredrickson and Branigan, 2005) and improve cognitive flexibility, ostensibly through the release of dopamine in the brain (Ashby et al., 1999).

The psychological components of the PEA state are embodied in its physiological correlates (Cacioppo and Tassinary, 1990). PEA states have been associated with autonomic activity that supports social engagement and recovery from stress (increased parasympathetic activity; Porges, 2003), the release of bonding

hormones (oxytocin in women and vasopressin in men; Kemp et al., 2012; McCall and Singer, 2012), and neurological activity in regions of the brain associated with social cognition (the default mode network; Jack et al., 2012, 2013b). Together, these correlates contribute to a positive physiological state Heaphy and Dutton (2008) refer to as "physiological resourcefulness."

Discerning Challenge or Threat States

As mentioned above, the PEA state can be evoked by experiences of mindfulness, compassion, hope, and playfulness (Boyatzis, 2008). These various experiences likely have unique physiological profiles. In fact, examinations of physiological arousal during real-time coaching conversations using the stress hormone cortisol (Howard, 2009) and measures of autonomic activity (Passarelli, 2014) revealed unexpected results. Both of these studies found that discussing one's vision with a coach for the first time evoked a mild stress response. This phenomenon can be explained by the Biopsychosocial Model of Challenge and Threat (Blascovich, 2007), which holds that individuals' physiological systems respond to support an assessment of either challenge or threat in active performance situations. A coaching interaction can be considered an active performance situation for both the client and the coach in that it is a goal-relevant activity whereby a certain level of performance is required to maintain wellbeing, and can be perceived in varying degrees as socially evaluative (Tomaka et al., 1993).

Depending on individuals' assessments of their own resources compared to the demands of the situation, a challenge or threat state will emerge. The "challenge" state occurs when one's perceived resources are greater than the demands of the situation, resulting in a physiological response that supports optimum performance. This conscious or unconscious appraisal increases sympathetic-adrenomedullary axis (SAM) activity and vasodilation in large skeletal muscles (decreased vascular resistance) with the end product being relatively unchanged blood pressure (Blascovich and Mendes, 2000). Alternatively, when the demands of a situation appear to outweigh an individual's personal resources, a "threat" state is produced that impairs performance through its associated physiological arousal (Tomaka et al., 1993). Threat is marked by an increase in SAM activity and in the pituitary-adrenal-cortical axis which increases vascular resistance, leading to relatively large increases in blood pressure (Blascovich and Mendes, 2000). According to this theory, both challenged and threatened individuals should exhibit increased cardiac activity during coaching conversations but will differ in vascular resistance. This suggests a reinterpretation of the finding that vision-based coaching conversations did not elicit the physiological element of the PEA state is in order. According to this view, vision-based coaching may elicit a challenge response, which—although physiologically heightened—is an adaptive strategy that allows an individual to mobilize resources necessary to engage in the process of visioning and intentional change. On the other hand, coaching that puts an undue emphasis on the problem and a client's lack of resources to address it will evoke a threat state, diverting physiological resources from the work of coaching to regulating one's own emotions and managing the stress of the situation (Mendes et al., 2007). In summary, coaching interactions represent motivated performance situations that elicit physiological challenge or threat states via emphasis on the PEA and NEA, respectively.

Proposition 1: Vision-based coaching activates a PEA state characterized by positive affect, cognitive openness, and a physiological challenge response to a greater degree than coaching interventions that do not include an ideal self-component.

Developmental Resources

The PEA state creates the conditions for the emergence of resources that facilitate enduring leader development. For the purposes of this paper, these resources are organized into two categories—relational and motivational (**Figure 2**). The relational category represents developmental resources stemming from the coaching relationship itself. To the extent that PEA states are shared between the coach and the leader, vision-based coaching offers benefits to both members of the dyad (Boyatzis et al., 2012). However, this paper focuses on the developmental resources of the leader or client, which include facilitation of relationship formation, identity expansion, and enhanced vitality. The motivational category is composed of resources derived from one's personal vision, including a concern for mastery in the goal setting process (i.e., goal-orientation) and a promotion-oriented self-regulatory focus. Resources in both categories depend on the presence of a PEA state.

Relational: Vision and Positive Coaching Relationships

The importance of the coaching relationship is not unique to vision-based coaching. Many researchers hold that it is in the context of high-quality relationships that growth and transformation occur (Josselson, 1996; Miller and Stiver, 1997; Dutton, 2003). Similarly, coaching research consistently identifies the quality of the coaching relationship as a key predictor of positive coaching outcomes (Kampa-Kokesch and Anderson, 2001; Bennett, 2006; Gyllensten and Palmer, 2007; Gregory and Levy, 2011). High-quality coaching relationships have been described in a number of ways. In a qualitative study of individuals who went through a workplace coaching process, Gyllensten and Palmer (2007) found positive coaching relationships were established on a foundation of trust and transparency, which promoted psychological safety and active participation in the process. Bluckert (2005) added rapport, support, and challenge as key elements of a successful coaching relationship. According to Gregory and Levy (2010), high-quality employee coaching relationships are evidenced by a genuineness and comfort in the relationship, as well as positive communication and the facilitation of development. When the connection between a coach and a client is marked by these positive qualities, the developmental aims of coaching are achieved more rapidly (Baron and Morin, 2009).

According to ICT, such growth-fostering relationships are the center around which desired, sustained change revolves (Boyatzis, 2008). To be clear, ICT does not suggest that effective coaching relationships require both members of the dyad to be in the PEA state at all times. In fact, recurrent activation of the PEA

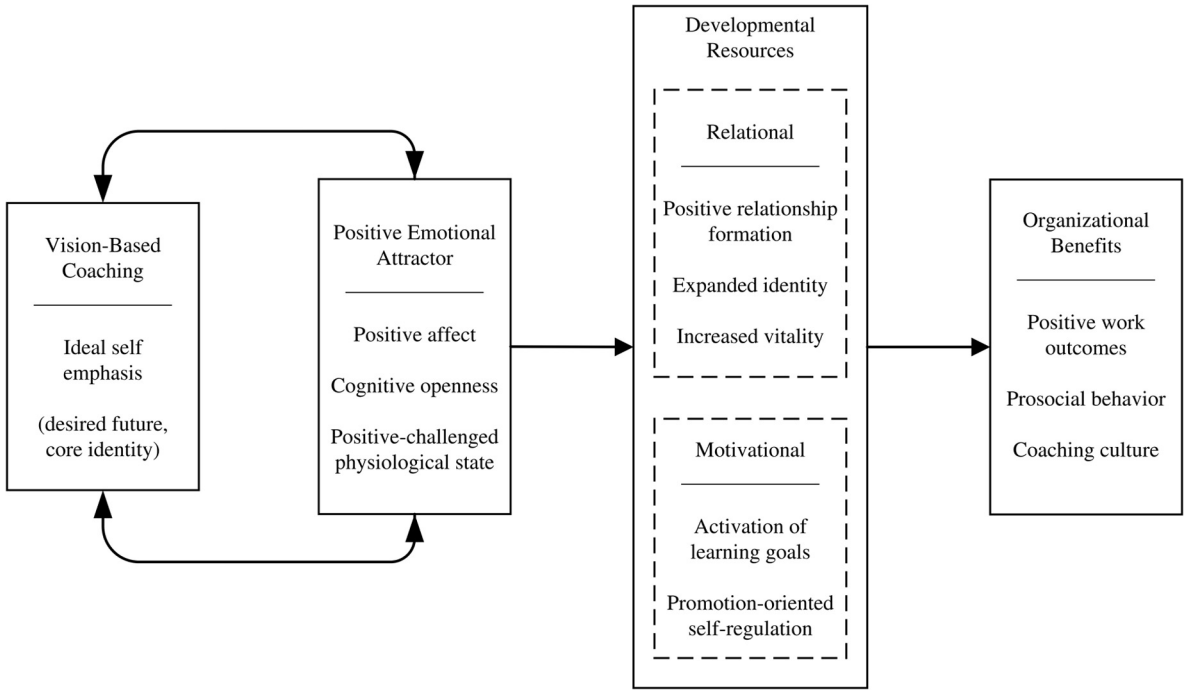

FIGURE 2 | Conceptual model of resources cultivated through vision-based coaching.

and NEA is necessary and healthy for the coaching relationship, assuming comparatively more time is spent in the PEA. Acute periods of negativity can be productive in moving a relationship forward because they signal that something in the relationship needs attention which, once resolved, strengthens the relationship. In these cases, the NEA is not a static state but part of the natural evolution of growth-fostering relationships (Jordan and Cooley, 2000). Such relationships have been found in other domains to ease career transitions (Ibarra, 2003), assist in growth and development (Boyatzis et al., 2006; Ragins and Verbos, 2006), enhance and enrich identity (Roberts, 2007), and establish interpersonal trust that facilitates learning from failure (Carmeli and Gittell, 2009; Carmeli et al., 2009). Relationships of this nature also have physiological benefits that contribute to resilience and engagement at work (Heaphy and Dutton, 2008).

Positive Relationship Formation

The ability to establish a positive relationship is paramount to executive coaching practice. Early coaching interactions are shaped by relational images, or generalized mental models about what the coaching relationship should entail and how each party should behave (Miller and Stiver, 1997). Relational images built on prior experiences of painful developmental relationships can undermine the formation of a positive coaching relationship (Jordan, 2010). Vision-based coaching offers an alternative for engaging in developmental relationships that can modify existing dysfunctional scripts.

When a coach tunes in to an individual's ideal self, the best version of themselves they aspire to be, as opposed to their shortcomings, it communicates acceptance and affirmation (Roberts et al., 2005). As the coach demonstrates the empathetic attunement, understanding and sharing in the affective-cognitive experience of the client, the client experiences safety and positive emotional bonding that reinforces the PEA state of both parties (Jordan, 1991; Boyatzis et al., 2006). The PEA state is critical when a new relationship is forming. Positive emotionality is associated with an increased range and depth of self-disclosure (Cunningham, 1988; Vittengl and Holt, 2000). Based on diary studies, those who experience greater positive emotions have more enjoyable social interactions (Berry and Hansen, 1996) and greater friendship closeness (Berry et al., 2000). In a study of college roommates who are getting to know each other in the initial weeks of school, Waugh and Fredrickson (2006) found that those who displayed greater positive emotions also experienced greater self-other overlap (interpersonal closeness) and a more complex understanding of one another. Thus, through the mediating effects of the PEA state, vision-based coaching accelerates the formation of a positive relationship between the coach and the client.

Proposition 2: Vision-based coaching facilitates positive relationship formation.

Expanded Identity

Many clients come to coaching with identity-related concerns in their leadership role. These concerns are often more salient during times of career transition. For example, individuals who have been recently promoted to a management position from individual contributor roles may never have viewed themselves as leaders. Others with deep operations management experience may be challenged by a new, more strategic leadership role. Finally,

individuals who have recently entered a new organizational culture may be challenged by a personal approach to leading that varies from the dominant leadership style. In all of these cases, vision-based coaching encourages the leader to explore parts of the self that have been ignored or suppressed by social influences. Through a relational process, the clients expand their senses of self and shape their leader identities.

Vision-based coaching strengthens the positive aspects of one's identity (Roberts, 2007). In addition to drawing out aspects of the self that are aspirational in nature, vision-based coaching helps a leader reflect on current strengths and values as a basis for personal growth. It turns the individual's attention to examples of personal effectiveness and social information that highlights one's personal characteristics at his or her best (Roberts et al., 2005). As individuals gain affirmation about these positive components, they begin to expand their self-view to be consistent with others they deem important in their lives, including the coach (Tice and Wallace, 2003). Additionally, vision-based coaching provides a secure relational foundation that facilitates feedback-seeking behavior, which can further develop one's identity (Kumashiro and Sedikides, 2005).

An expanded sense of self provides a foundation for forming, reformulating, or deepening one's self-view as a leader. This self-view, or leader identity, is a sub-component of one's overall identity that is influenced through both intrapersonal and interpersonal processes (DeRue and Ashford, 2010). By eliciting self-reflection related to one's leader identity, vision-based coaching increases the salience of this aspect of the self thereby releasing positive motivational effects. As leader identity becomes central to one's sense of self, he or she is more likely to seek out opportunities to develop as a leader (Day and Harrison, 2007). These experiences provide leaders with an increasingly sophisticated set of knowledge structures upon which they can draw to guide future behavior (Lord and Hall, 2005). Furthermore, a clear and integrated leader identity motivates individuals to behave in ways congruent with their identity (Day and Harrison, 2007). The ability to quickly and efficiently access knowledge relevant to leadership challenges translates to increased skill and maturity in one's leader identity. In a positive feedback loop, this more salient leader identity enhances the self-regulatory capacity to sustain interest in developmental activities over the months and years it takes to develop as a leader (Lord and Hall, 2005).

Proposition 3: Vision-based coaching facilitates leader identity development.

Increased Vitality

Verbal discourse about one's personal vision with a coach releases deep psychic energy (Josselson, 1996; Boyatzis et al., 2006; Fritz et al., 2011). This feeling of being fully alive and energized, referred to as subjective vitality or zest, invigorates clients to take action toward their visions (Miller and Stiver, 1997; Ryan and Frederick, 1997). Vitality can move a client to adopt a new mindset or challenge a deeply held belief, to try a new behavior, to reflect more deeply, or even to make a major life change. Furthermore, increases in subjective vitality predict sustained efforts toward behavior change (Niemiec et al., 2010).

To be certain, increased vitality is a byproduct of sharing one's vision with a coach. As coaches draw out and encourage clients' ideal selves, they transmit relational energy which evokes the PEA state and has an uplifting effect on clients (Owens and Baker, 2011). Initial results from a study examining the neurological correlates of vision-based coaching substantiate the importance of the relational interplay between a coach and client. Specifically, the study found that the ventromedial prefrontal cortex (VMPFC), a region of the brain associated with social support (Eisenberger et al., 2011) and deriving affective meaning from cognitive information (Roy et al., 2012), was activated in participants who talked to a coach about their ideal selves (Jack et al., 2013a). This region became more active as a function of the number of coaching sessions an individual had with his or her coach (i.e., the more PEA sessions a participant had with a coach, the greater the neurological response in the VMPFC). More importantly, this region was not activated among participants who were instructed to type their answers to vision-based questions into a computer rather than interacting directly with a coach. This underscores how essential the *relationship* is to empowering clients through the energizing benefits of vision-based coaching.

Proposition 4: Vision-based coaching enhances subjective vitality.

Motivational: Vision and Regulation of Goal-Directed Behavior

Although discovery of one's ideal self in the context of a resonant coaching relationship energizes positive action, creating and executing an agenda for intentional development is an integral part of vision-based coaching (Boyatzis, 2008). Thus, vision-based coaching moves beyond the articulation of one's ideal self to planning, acting, and monitoring progress toward vision-relevant goals. In the context of leader development, this is a complex task that occurs over an extended period of time (Lord and Hall, 2005). Accordingly, coaches must attend to the motivational resources that enable sustained behavior change even if the coaching engagement is relatively short.

There is evidence that both vision-based and traditional coaching approaches assist clients in setting and pursing goals to a greater extent than they would accomplish alone (Howard, 2009; Grant et al., 2010; Grant, 2012). For example, Grant (2012) demonstrated that coaching questions that focused on a problem and those that focused on a solution both helped participants feel they were moving closer to their goals. However, in addition to emotional and efficacy-related benefits of the solution-based questions, participants in this condition reported feeling significantly closer to achieving their goal and developed more action strategies for attaining it. Further, Howard (2009) studied the effects of emotional attractors in the context of live coaching sessions. Conversations characterized by both the PEA and the NEA facilitated goal setting, and goal setting was associated with negative affect in both conditions. However, negativity associated with goal setting in the PEA condition was significantly less severe than in the NEA condition. These studies suggest that the distinction between vision-based coaching and other approaches is embedded in the *nature* of the goals clients set and

the degree to which these differences affect striving toward one's goals. Specifically, vision-based coaching is posited to support complex goal pursuit by bringing aspirational goals to the forefront of clients' concerns and optimizing individual motivational orientation.

Activation of Learning Goals

Vision-based coaching helps clients formulate goals that are consistent with the long-term demands of learning and development. This occurs as the client adopts a mindset focused on enhancing one's abilities, thereby activating development-relevant goals and bringing them into focus (Dweck and Leggett, 1988). Even when the coach is physically absent, the psychological presence of a relationship partner—simply *thinking* about the coaching in his or her absence—can activate goals that are congruent with that relationship (Fitzsimons and Bargh, 2003). Thus, vision-based coaching can have a lasting effect on how clients orient toward their goals.

Research on goal orientation suggests that qualitative differences in the nature of goals are associated with differences in goal pursuit and attainment (Seijts et al., 2004). Performance-oriented goals focus on a short-term outcome by which one's ability can be demonstrated to others. These are most effective when the task is routine or straightforward and an individual already has the ability to perform effectively. On the other hand, learning-oriented goals focus on the process of knowledge acquisition and skill development and are most effective when the task is novel or requires creativity, discovery, or mastery (Seijts et al., 2004; Seijts and Latham, 2005).

Furthermore, Seijts and Latham (2005) suggest that setting a performance goal early in the change process may actually be detrimental because it deters cognitive resources from exploration and discovery necessary for learning. A study by van Hooft and Noordzij (2009) supported this assertion. They found that job seekers who took a learning approach demonstrated greater search intentions, more search behavior, and had higher re-employment probabilities than those with a performance orientation. Additionally, the motivational benefits of learning oriented goals may be most vital in helping individuals persist through adversity (Dweck, 2002; Grant and Dweck, 2003; Blackwell et al., 2007). Thus, the activation of learning-oriented goals serves as a motivational resource for leader development.

Proposition 5: Goals that rise from vision-based coaching will evidence a stronger learning orientation than performance orientation.

Self-Regulatory Focus

By emphasizing one's dreams and aspirations, vision-based coaching not only activates learning goals, but also facilitates sustained goal pursuit by evoking a promotion-focus to self-regulated behavior. Promotion is one of two motivational orientations proposed by Higgins (1997, 1998) in his theory of regulatory focus. The other is a prevention focus. Promotion-focused individuals are motivated to achieve reward, whereas prevention-focused individuals are motivated to avoid negative outcomes. Self-regulatory focus has both trait and state properties, meaning it is a stable feature of one's personality yet can also be shaped by meaningful coaching interactions (Förster and Higgins, 2005). Thus, vision-based coaching can elicit a promotion orientation because of its focus on the ideal, as well as a distal time orientation (Pennington and Roese, 2003).

When externally primed with a promotion focus, individuals represent goals as aspirations and ideals, utilize approach strategies of goal pursuit that are eager and exploratory in nature, and are concerned with self-fulfillment and growth. Conversely, those in a prevention focus represent goals as responsibilities and duties, utilize avoidance strategies of goal pursuit that are vigilant and cautious, and are concerned with security and safety (Förster and Higgins, 2005).

Promotion and prevention orientations correlate with perceptual processing style. Promotion orientation is associated with a more abstract, global processing, whereas prevention orientation is associated with concrete, local processing (Förster and Higgins, 2005). This is consistent with findings from a recent fMRI study in which PEA-based coaching was found to activate neural circuits associated with higher visual processing and global attention—the same network that is associated with promotion-oriented motivation. Accordingly, NEA-based coaching and local visual attention were found to share an overlapping network associated with a prevention orientation (Passarelli et al., 2013). Thus, the ability to see the forest rather than the trees in a promotion-oriented state arises from our neurological structure.

Promotion–orientation is not always more valuable than a prevention orientation. For instance, a prevention focus is associated with greater performance when undertaking a specialized task requiring careful attention (Förster et al., 2003), when action must be quickly initiated (Freitas et al., 2012), or when the client believes that human intelligence is fixed (Sue-Chan et al., 2012). However, a prevention orientation may undermine developmental efforts where change is required. Research by Zhang et al. (2014) documents a "prevention-repetition effect" in which individuals with either a chronic or experimentally induced prevention focus were more likely to repeat dysfunctional behaviors in an effort to maintain the status quo. Given a tendency to repeat past performance, it maybe exceedingly difficult for prevention-oriented individuals to overcome dysfunctional patterns. Readjusting one's focus to a promotion orientation may open them to considering alternatives and selecting better behaviors, thereby breaking the cycle of dysfunction. Finally, a promotion orientation is more effective in regulating behavior with regard to complex and ambiguous tasks (Förster et al., 2003). In fact, Sue-Chan et al. (2012) found that promotion-oriented coaching led to greater problem-solving performance than prevention-oriented coaching in studies conducted in both laboratory and field settings. Thus, a promotion orientation gleaned from vision-based coaching will assist in regulating goal-directed behavior.

Proposition 6: Vision-based coaching inspires state-level promotion orientation.

Organizational Benefits

Although the discussion of vision-based coaching for leader development may appear to have predominantly individual-level

benefits, there are also benefits to the organization. Vision-based coaching enhances work outcomes, inspires prosocial behavior, and "spreads" a culture of development.

Boyatzis et al. (2006) hold that vision-based coaching serves as a source of renewal for both the client and the coach. Shared PEA states replenish the psychological and physiological resources necessary to be engaged at work (Loehr and Schwartz, 2003; Boyatzis et al., 2009). Vision-based coaching reinvigorates leaders' passion for their work and encourages them to express their ideal selves in work tasks and relationships (Boyatzis et al., 2014). Increasing evidence suggests this results in positive work outcomes. For example, a recent study found that vision-based coaching engendered greater work engagement and career satisfaction among financial service executives (Van Oosten, 2013). Similarly, Cable et al. (2013) found that organizational socialization practices that emphasize a newcomer's ideal self, coupled with the perception that he or she can act authentically, resulted in greater retention, higher quality work, greater engagement and job satisfaction, and more positive work attitudes.

Vision-based coaching often elicits a heightened desire to help others through one's work or actions (Passarelli, 2014). This desire for enhanced social connections is a common outcome of growth-fostering relationships (Miller and Stiver, 1997). In the short-term, positive affect and a desire to reciprocate may result in leaders taking action that "pays it forward" by engaging in vision-based interactions with colleagues or family members (Barsade and Gibson, 2007). Furthermore, the salience of prosocial values in one's ideal self may strengthen the likelihood of this discretionary helping behavior (Grant and Dutton, 2012). As leaders themselves experiment with vision-based coaching techniques in their network, a social contagion effect occurs. The PEA state evoked through vision-based coaching spreads through the dynamics of emotional contagion, the tendency to experience and express the emotions of a relationship partner (Hatfield et al., 1994). This transfer of emotions occurs through an unconscious process in which individuals perceive and mimic each other's emotional cues, such as facial expressions, language, and movement (Cattaneo and Rizzolatti, 2009; Iacoboni, 2009), and is particularly powerful among those who share a sense of interpersonal closeness (Cwir et al., 2011). As the nature of leaders' conversations change, the culture of the organization will become more developmental.

Proposition 7: Vision-based coaching is positively associated with work outcomes, prosocial behavior, and a shift toward a culture of development.

Limitations of Visioning

Vision-based coaching advocates for the clarification of one's ideal self as a starting point for the coaching process and as an anchor for other discoveries involved in intentional change. Although vision gives rise to valuable developmental resources, we recognize that a vision alone is likely insufficient to facilitate behavior change. Rather, a clear vision of one's ideal self provides a basis for other mental processes, such as mental contrasting and process forecasting, that are germane to subsequent discoveries in ICT and essential for successful goal pursuit. Additionally, visioning "gone wrong" can be counterproductive to the aims of coaching.

Mental Contrasting

Kappes and Oettingen (2011) warn that idealized images of the future do not take into account the arduous path to attaining that future state, resulting in poorer performance than being in touch with reality. In fact, they suggest that whereas envisioning a desired future has motivational benefits related to increased positive affect, it can erroneously satisfy this need thereby decreasing effort (Oettingen, 1995). By their account, a more effective way to motivate goal-related behavior is through the process of mental contrasting, comparing one's desired future to current obstacles that might stand in the way. The contrast between the ideal and real becomes the source of motivational energy and commitment to one's goals (Oettingen et al., 2009).

In a series of studies, participants were asked to (1) imagine a desired future, (2) imagine obstacles and challenges in their current situations that stand in the way of the desired future, or (3) mentally contrast the previous two conditions. Consistently, participants in the mental contrast condition put forth more effort and performed better on the goal-relevant tasks (Oettingen et al., 2000, 2001), which underscores the importance of contrasting the ideal self with the real self in coaching. In addition, mental contrasting calibrates goal commitment with expectancy, such that goal commitment increases when expectations of success are high and *vice versa* (Oettingen et al., 2001). To the extent that vision, via its PEA correlates, buffers the natural proclivity toward negative information in real-self concerns, it may reduce the likelihood that perceived obstacles will erroneously diminish one's expectations of success thereby leading to increased goal commitment. Finally, mental contrasting research suggests that the connective tissue between expectations of success and goal commitment is physiological and psychological activation or energization (Oettingen et al., 2009). Here again, the vitality-enhancing effects of the vision-based coaching may amplify the energizing effects of mental contrasting.

Mental Simulation

Research in the areas of sports psychology and addiction suggest further limitations on the relationship between vision and self-regulation. Similar to mental contrasting, research on mental simulation suggests that mentally envisioning a desired end state is insufficient for regulating behavior toward that outcome. Mental simulation differs from mental contrasting in that it posits one must envision the steps necessary to attain a goal rather than contrast the ideal to current reality. Thus, mental simulation or process-based visioning, involves both the ideal end state and the steps necessary to achieve it (Taylor et al., 1998). Mental simulation may contain both real and hypothetical events and is typically constrained by what is plausible (Taylor and Schneider, 1989).

Mental simulation improves self-regulatory capacity by increasing the extent to which an individual believes his or her goal will be achieved (Koehler, 1991). Mental simulation also allows individuals to evaluate multiple solutions to a problem

in an environment that approximates the causal chain of events in social reality. It bolsters coping skills by allowing leaders to anticipate and mentally play out their response to high-risk situations. Finally, mental simulation is second only to physical practice in enhancing action readiness (Taylor et al., 1998). Accordingly, process-based visioning, as compared to ideal-only visioning or no visioning, has been linked to superior performance (Pham and Taylor, 1999), planning and problem solving in pursuit of a goal (Taylor et al., 1998), use of active coping strategies in stressful life events (Rivkin and Taylor, 1999), and reduced stress in physical performance situations (Weigert Coelho et al., 2014).

In terms of intentional change, mental simulation may be particularly important as a predecessor to the discovery of practice and experimentation because it allows for mental rehearsal of contextualized behavior. For example, a leader who ideally views him or herself as a charismatic orator might prepare for the next company-wide meeting by playing out how the audience would react to various ways of delivering a message.

Vision Dysfunction

Vision can interfere with leader development in certain situations. First, escape fantasies not grounded by a clear sense of reality can thwart self-regulatory efforts at development (Oettingen, 1995). Second, the psychophysiological state associated with ideal self-visioning can create openness that is too unfocused or scattered to be usefully directed (Boyatzis, 2013). Third, visioning that takes the form of rumination on painful past or anticipated future experiences can be detrimental to those suffering from mental health disorders, such as depression or post-traumatic stress disorder (Horowitz, 1976).

In addition, it may be counterproductive for a coach to use vision-based techniques when an individual exhibits extreme resistance to exploring his or her ideal self. Excessive emphasis on the ideal self in this situation could violate a leader's social expectations for the conversation, thus resulting in strain that depletes developmental resources (Fitzsimons and Finkel, 2010). In these situations, it is recommended to use a different approach to foster a PEA state (e.g., discussing important relationships for which one is grateful or values one holds dear) as a "warm up" period to discussing one's ideal self.

Conclusion

Organizations invest significant resources in leadership development (Avolio and Hannah, 2008). Ironically, some of these practices may actually deplete the human resources they are designed to augment. Many coaching interactions intended to develop leadership capability are inherently deficit-based, beginning with multisource feedback that triggers a leader's real self and ensuing NEA state, rather than his or her ideal self and a PEA state. These interactions fail to leverage the transformational power of one's personal vision, potentially resulting in sporadic or short-term change.

It should be noted that empirical research to date has largely focused on documenting the outcomes of executive coaching—a necessary step for a profession attempting to gain legitimacy. Evidence from these studies suggests that coaching increases leaders' self-efficacy (Baron and Morin, 2009; Ladegard and Gjerde, 2014); increases satisfaction and commitment and decreases turnover intentions (Luthans and Peterson, 2003); fosters stronger relationships and personal development, and facilitates work-family integration (Wasylyshyn, 2003). Yet, little empirical evidence demonstrates *how* these outcomes are achieved (Gregory et al., 2008; Segers et al., 2011). That is, the field needs theoretical models for the process by which these outcomes are attained in order to advance beyond outcomes research. The lack of theoretical models has stymied this progress.

Vision-based coaching has been proposed as a theory-driven approach to coaching. The propositions outlined in this paper are intended as a basis for continued empirical research on ICT and the dynamics of executive coaching. This research agenda includes testing the efficacy of vision-based coaching as compared to other approaches, as well as exploring how various approaches might be optimally combined (e.g., modifying the GROW model to include an ideal self-component). The assertion that vision-based coaching leads to "sustained" change requires longitudinal research designs that extend not only the duration of the coaching engagement but also months or years afterward. This research should examine the strength of the proposed relationships over time. Additionally, if support for these propositions is established, boundary conditions must be identified. For example, if vision-based coaching is in fact found to elicit promotion-oriented motivational states, how long does this effect last? Or, how do individual differences moderate the proposed relationships?

The propositions outlined here also have implications for how organizations approach leadership development. First, organizations are called to embed the ideal self in their leadership development initiatives such that participants have an opportunity to consider their vision early and reconnect with it regularly throughout the intervention. Accordingly, this requires reconsideration of the timing of multisource feedback, a key component of many leadership development processes (Day et al., 2014). Second, the propositions included here underscore the importance of frequent experiences of the PEA. This suggests that leader developers and leaders themselves utilize strategies that inspire positive emotions through experiences of hope, mindfulness, compassion, and playfulness. Finally, coach-training programs should include the theoretical basis for practice and, in this case, cover techniques for helping leaders discover their ideal selves.

In summary, vision-based coaching holds that a clear and comprehensive personal vision mobilizes developmental resources through activation of a positive psychophysiological state that optimizes affective, cognitive, and neurobiological functioning for development. These resources fuel ongoing developmental efforts that endure the test of time, benefiting both the leaders being coached and their organizations.

Acknowledgment

The publication of this research was supported by the *Sociedade Brasileira de Coaching*, Sao Paulo, Brazil.

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Conflict of Interest Statement: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 24 April 2015
doi: 10.3389/fpsyg.2015.00455

Coaching to vision versus coaching to improvement needs: a preliminary investigation on the differential impacts of fostering positive and negative emotion during real time executive coaching sessions

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OPEN ACCESS

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Specialty section:
This article was submitted to Personality and Social Psychology, a section of the journal Frontiers in Psychology

Received: *05 December 2014*
Accepted: *30 March 2015*
Published: *24 April 2015*

Citation:
Howard AR (2015) Coaching to vision versus coaching to improvement needs: a preliminary investigation on the differential impacts of fostering positive and negative emotion during real time executive coaching sessions. Front. Psychol. 6:455. doi: 10.3389/fpsyg.2015.00455

Drawing on intentional change theory (ICT; Boyatzis, 2006), this study examined the differential impact of inducing coaching recipients' vision/positive emotion versus improvement needs/negative emotion during real time executive coaching sessions. A core aim of the study was to empirically test two central ICT propositions on the effects of using the coached person's Positive Emotional Attractor (vision/PEA) versus Negative Emotional Attractor (improvement needs/NEA) as the anchoring framework of a onetime, one-on-one coaching session on appraisal of 360° feedback and discussion of possible change goals. Eighteen coaching recipients were randomly assigned to two coaching conditions, the coaching to vision/PEA condition and the coaching to improvement needs/NEA condition. Two main hypotheses were tested. Hypothesis$_1$ predicted that participants in the vision/PEA condition would show higher levels of expressed positive emotion during appraisal of 360° feedback results and discussion of change goals than recipients in the improvement needs/NEA condition. Hypothesis$_2$ predicted that vision/PEA participants would show lower levels of stress immediately after the coaching session than improvement needs/NEA participants. Findings showed that coaching to vision/the PEA fostered significantly lower levels of expressed negative emotion and anger during appraisal of 360° feedback results as compared to coaching to improvements needs/the NEA. Vision-focused coaching also fostered significantly greater exploration of personal passions and future desires, and more positive engagement during 360° feedback appraisal. No significant differences between the two conditions were found in emotional processing during discussion of change goals or levels of stress immediately after the coaching session. Current findings suggest that vision/PEA arousal versus improvement needs/NEA arousal impact the coaching process in quite different ways; that the coach's initial framing of the session predominantly in the PEA (or, alternatively, predominantly in the NEA) fosters emotional processing that is driven by this initial framing; and that both the PEA (and associated positive emotions) and NEA (and associated negative emotions) play an important and

recurrent role in shaping the change process. Further study on these outcomes will enable researchers to shed more light on the differential impact of the PEA versus NEA on intentional change, and how to leverage the benefits of both emotional attractors. Findings also suggest that coaches can benefit from better understanding the importance of tapping intrinsic motivation and personal passions through coaching to vision/the PEA. Coaches additionally may benefit from better understanding how to leverage the long-term advantages, and restorative benefits, of positive emotions during coaching engagements. The findings also highlight coaches' need to appreciate the impact of timing effects on coaching intentional change, and how coaches can play a critical role in calibrating the pace and focus of work on intentional change. Early arousal of the coachee's PEA, accompanied by recurrent PEA–NEA induction, may help coachees be/become more creative, optimistic, and resilient during a given change process. Overall, primary focus on vision/PEA and secondary focus on improvement needs/NEA may better equip coaches and coaching recipients to work together on building robust learning, development, and change.

Keywords executive coaching, vision, improvement needs, positive emotion, negative emotion, emotional appraisal, intentional change, positive psychology

Introduction

Executive coaching is a far-reaching practice to enhance the performance of 21st century professionals facing constant workplace change, challenge, and stress. Coaching is generally understood to involve practical, goal-focused forms of one-on-one learning and behavioral change (Peterson and Hicks, 1996; Hall et al., 1999). Promoting learning and behavior change in coaching contexts involves work on intentional change.

Intentional change is deliberate, altering, demanding. It results from the conscious effort to establish new behaviors that are different from what they currently are or appear to be (Ford and Ford, 1994). A key challenge for coaches is finding ways to support coachees for practicing new behaviors and/or building new habits and competencies. Although problem-focused coaching is an accepted approach to intentional change, positive psychology theory and research support the idea that vision-focused coaching helps coachees be more energized and resilient during work on desired change as compared to problem focused coaching. As Kauffman (2006) argues, "an explicitly positive psychology framework suggests that a language of strength and vision rather than weakness and pain be the firm foundation on which the coaching work rests" (Kauffman, 2006, p. 220).

The proposed shift from problem-focused coaching to vision-focused coaching does not imply that the "Pollyanna Principle" (i.e., excessive optimism) should drive the coaching agenda. Instead, coaches are encouraged to help their clients move more deftly between attention to vision and values, and attention to problems and improvement needs. Intentional change theory (ICT) proposes that executive coaches who anchor a coaching process in the coaching recipient's vision *(PEA framing/early induction of positive affect)* trigger positive cognitive emotional processing associated with the broaden and build effect (Fredrickson, 1998, 2000a, 2001, 2003, 2013; Fredrickson and Joiner, 2002), i.e., ways in which positive emotions broaden and build thought-action repertories and attentional focus; speed recovery from negative emotional experiences and crises; optimize emotional well-being, physical health, and resilience; and undo the damaging effects of negative emotion (Fredrickson, 2000b; Fredrickson et al., 2000; Gottman et al., 2002; Tugade et al., 2004; Isen and Reeve, 2005; Tugade and Fredrickson, 2007).

Conversely, executive coaches who anchor a coaching process in the coaching recipient's improvement needs *(NEA framing/early induction of negative affect)* trigger negative cognitive affective processing associated with adaptive response to extrinsic requirements and/or threats, i.e., ways in which negative emotions assist rapid recognition of problems, appraisal of negative feedback, evaluation of weaknesses, surfacing of fears and anxieties, and mobilization of psychophysiological energy for coping with situational concerns (French, 2001; Sanford and Rowatt, 2004; Parrott, 2014). **Figure 1** presents the proposed differential impacts of PEA framing versus NEA framing.

This paper empirically tests these ICT propositions and offers suggestive empirical support for the advantages of coaching to vision [i.e., coaching to the Positive Emotional Attractor (PEA)] versus coaching to problems and improvement needs [i.e., coaching to the Negative Emotional Attractor (NEA)]. Specifically, the study tested two main hypotheses on the real-time effects of using the coached person's vision/PEA versus improvement needs/NEA as the anchoring framework of a one time, one-on-one coaching session on appraisal of 360° feedback and discussion of possible change goals:

Hypothesis$_1$*: Level of Positive Emotion During Appraisal of 360-degree Feedback Results and Discussion of Change Goals.* Participants coached using their vision/PEA as the primary focus on the coaching session will show higher levels of

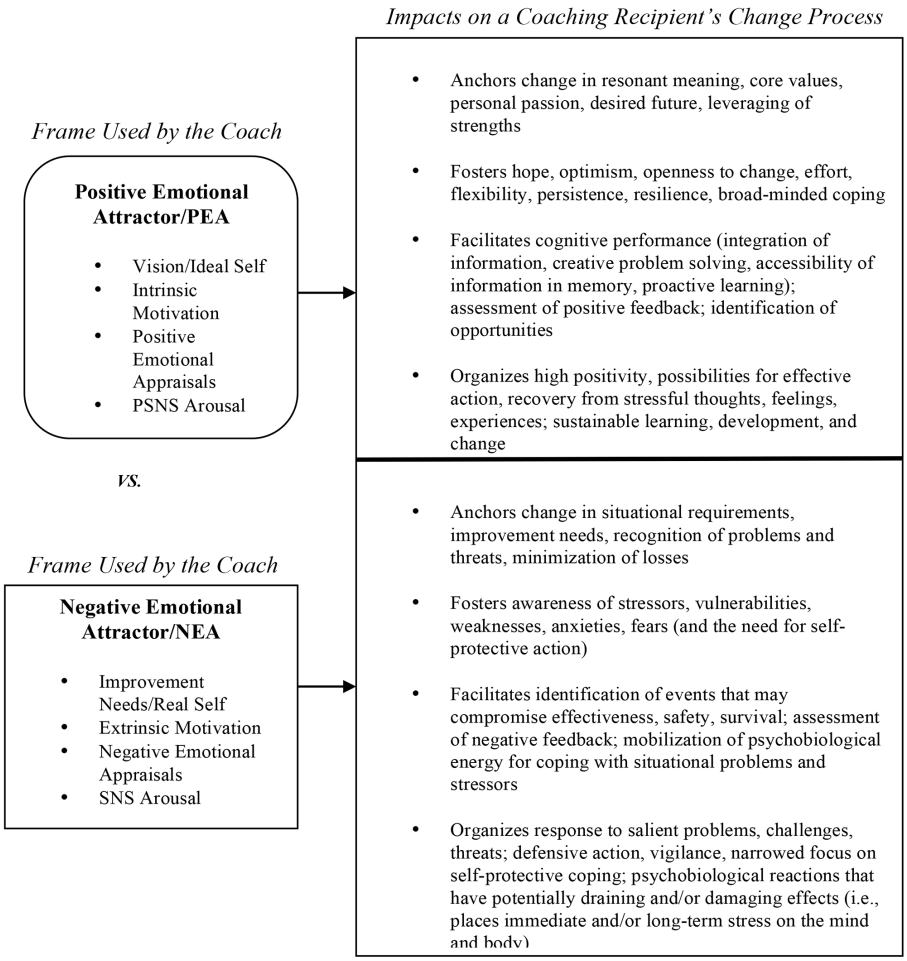

FIGURE 1 | Differential impacts of PEA framing versus NEA framing on a coaching recipient's change process.

expressed positive emotion during appraisal of 360° feedback results and discussion of possible change goals than participants coached using their improvement goals/NEA as the primary focus.

Hypothesis$_2$: *Level of Stress Immediately After the Coaching Session*. Participants coached using their vision/PEA as the primary focus of the coaching session will exhibit lower levels of stress immediately after the coaching session than participants coached using their improvement needs/NEA as the anchoring framework.

Background

Role of the Positive Emotional Attractor (PEA) and Negative Emotional Attractor (NEA) in Intentional Change

Intentional change theory (Boyatzis, 2006) offers an evidence-based perspective on the role of positive and negative emotion in desired, sustained change, i.e., that positive emotions (aroused by the PEA) trigger constructive cognitive and physiological responses that enhance motivation, effort, optimism, flexibility, creative thinking, resilience, and other adaptive behaviors. Negative emotions (aroused by the NEA) trigger a different process by calling attention to current social and environmental challenges and stressors that may compromise one's effectiveness. While both positive and negative emotions play an important role in intentional change, it is critically important to leverage the beneficial effects of positive affect (aroused by the PEA) throughout the change process.

The PEA is defined as the personal values, hopes, dreams, possibilities, strengths, optimism, and self-directed learning goals that make up the Ideal Self, i.e., our vision of what we most aspire to be and become (Boyatzis, 2006; Boyatzis and Akrivou, 2006). The organizing power of vision/the PEA stems from positive emotions (and emotional appraisals) aroused by affirming thoughts, feelings, memories, meaning, and self-worth that constitute the Ideal Self — and by arousal of the parasympathetic nervous system (PSNS) and neural circuits predominantly in the left prefrontal cortex. When intentional change is initiated by connecting to vision/the PEA, change becomes grounded in intrinsic motivation, personal passion, resonant meaning,

belief in possibility and the psychophysiological benefits of PSNS arousal and neurogenesis.

The NEA is defined as the present reality, requirements, problems, shortfalls, fears, pessimism, and improvement goals that constitute the Real Self (Boyatzis, 2006; Taylor, 2006), i.e., our conception of what we actually are in everyday life. The organizing power of the NEA stems from negative emotions (and emotional appraisals) associated with and aroused by dissonant thoughts, feelings, memories, meaning and concerns about self-efficacy that comprise the Real Self — and by NEA arousal of the sympathetic nervous system (SNS) and neural circuits predominantly in the right prefrontal cortex.

During intentional change, negative emotions aroused by the NEA help the individual remain cognizant about salient environmental requirements and personal improvements that must be made. Negative emotions also support analysis of what needs to be done first, (priority setting), what stands in the way (obstacles, barriers), what resources are lacking, and what is not presently working (Diamond and Aspinwall, 2003). This information is central to the development of change goals and helps the individual to outline realistic approaches to behavior change.

The drawback of negative emotional arousal is that it keeps the person more narrowly focused on the challenges of present reality and introduces psychophysiological reactions that trigger self-protective cognitive and physiological response, but at the cost of "directing blood to large muscle groups, closing down non-essential neural circuits, suspending the immune system, and producing cortisol" (cortisol's upside is that it catalyzes defensive response, but the downside is that cortisol inhibits neurogenesis and "overexcites older neurons, rendering them useless"; Boyatzis, 2006, p. 25).

Because episodes of negative emotional arousal tax the mind and body, and because intentional change is characterized by recurrent arousal of negative emotions, it is important to leverage the restorative effects of positive emotions throughout the change process. Failure to leverage the restorative effects of positive emotion compromises recovery from negative emotional episodes (Gottman et al., 2002).

Interplay of Positive Emotion and Negative Emotion in Intentional Change

Recurrent arousal of positive emotion (activated by vision/the PEA) and negative emotion (activated by the Real Self/NEA) is a central feature of intentional change. Desired change is more lasting and effective when vision/the PEA serve as the primary focus of the change effort and when the Real Self/NEA is the secondary focus (Boyatzis, 2006; Howard, 2006). Change efforts primarily framed by arousal of vision/the PEA foster more robust learning and development than change efforts predominately framed by Real Self/NEA arousal. Promoting change through vision/PEA arousal grounds the change process in constructive cognitive and physiological processes that enhance motivation, effort, creative thinking, optimism, flexibility, resilience, and recovery from stressful thoughts, feelings, or experiences. Conversely, change promoted through NEA arousal activates defensive emotional processes concerned with minimization or prevention of losses, self-protection, and use of vigilance means (Brockner and Higgins, 2001; Higgins et al., 2001).

Grounding the change process primarily in vision/the PEA, and secondarily in the Real Self/NEA, does not compromise an actor's engagement in capacity-building coping responses moved by the NEA. For example, a study by Isen and Reeve (2005) found that positive affect fostered intrinsic motivation without compromising involvement in meeting extrinsic requirements. When NEA arousal occurs within a change event that is framed by early PEA arousal, the individual is more resilient and flexible in overcoming challenges and stressors identified through negative emotional processing. Grounding a change process primarily in the PEA promotes the kind of change recommended by DiClemente (1999, p. 211), i.e., change that responds to environmental demands, yet is "reinforced by incentives that are owned by the individual so that they become integrated into the life of that individual." Coaching primarily to vision/the PEA, and secondarily to the Real Self/NEA, leverages the advantages of both positive ***and*** negative emotion.

Timing

Intentional change theory (Boyatzis, 2006) places great emphasis on the *timing and sequence* of affect induction. The ICT model is a non-linear process model wherein desired sustainable change is enhanced by deliberate early induction of positive affect (PEA arousal) followed by recurrent engagement in both negative emotional processing and positive emotional processing (the interplay of positive emotion and negative emotion). Early PEA arousal, followed by the interplay of positive and negative affect, organizes emotional self-regulation that enables coachees (a) to initially ground the change effort in intrinsic motivation triggered by PEA arousal; (b) as the change process unfolds, to handle salient challenges and stressors through proactive coping responses (Aspinwall and Taylor, 1997) triggered by NEA arousal; and (c) to continually re-center and reenergize through adaptive behaviors moved by PEA arousal. The unfolding PEA–NEA interplay is dynamic (self-organizing, emergent, unpredictable), iterative (repeated in fits and starts), and non-linear (multidirectional and fluctuating; it is ordered by episodic disruption, modification, and trial-and-error rather than straight linear progression).

According to the ICT perspective, a key advantage of recurrent PEA–NEA arousal is that it enables people to leverage vision and strengths (promotion-focused activity/the Ideal Self) during the change process while also dealing with problems and fears (prevention-focused activity/the Real Self). When the interplay of positive and negative emotions occurs within a change process framed by early PEA arousal, individuals access the broad range of adaptive coping behaviors moved by both kinds of affective processing. Application of vision-focused coaching (anchoring intentional change primarily in the PEA and secondarily in the NEA) is enormously helpful in situations characterized by high challenge, rapid change, or chronic stress (e.g., fierce competition, extreme financial strain, chronic illness, job loss, organizational restructuring, etc.). Again, recurrent PEA–NEA activation leverages hope, optimism, resilience, strength, and other proactive

responses, *and also promotes* assessment of problems or threat, pragmatic reasoning, and self-protective coping.

Intentional change theory views on recurrent PEA–NEA arousal are undergirded in part by selected cognitive emotion research on temporal effects in emotional processing during work on behavior change. For example, Fredrickson's (2000b, pp. 595–603) review of empirical research on the 'peak-and-end rule' suggests that under-researched timing effects play a significant role in determining specific ways in which positive and negative emotions influence evaluation of change requirements and future possibilities. Similarly, Gross (2001) found that specific emotion regulation strategies have different impacts depending on *when* they are employed. His research suggests that *antecedent-focused strategies* (feelings, behaviors, and physiological responses experienced early in the process of assessing a stimulus event) have more calming behavioral and physiological effects as compared to *response-focused strategies* (feelings, behaviors, and physiological responses experienced after a person's event response-tendencies are activated). Other regulatory focus theories have demonstrated that framing a task as promotion-focused (e.g., vision/PEA priming) versus prevention-focused (e.g., improvement needs/NEA priming) triggers timing effects. In one set of studies framing a task as prevention-focused fostered preferences to initiate action earlier than did framing the task as promotion-focused (Freitas et al., 2002). Based on this result, Freitas et al. (2002) reasoned that initially framing a new activity as promotion-focused *(conceptualized in ICT as a primary focus on vision/the Ideal Self)* fosters a willingness to adopt it, but once the activity has begun, reframing it as prevention-focused *(conceptualized in ICT as a secondary focus on improvement needs/the Real Self)* fosters interest in meeting or completing the activities' requirements.

In a related stream on non-linear dynamics in human emotion and flourishing, work on positivity ratios (Gottman, 1994; Gottman et al., 2002; Losada and Heaphy, 2004; Fredrickson and Losada, 2005; Fredrickson, 2013) contributes evidence that it is possible to describe the emotional experience of human systems *(individuals, teams, groups, organizations)* in terms of the ratio of positivity to negativity (P/N) identified through the coding of expressed emotion in spoken and verbal communication, and that high positivity ratios are associated with effective behavior, performance, and flourishing – while low positivity ratios are associated with less optimal outcomes.

While not conclusive, taken together these researches suggest that the timing and sequence of affect induction may play an influential role in the change process such that early arousal of vision/the PEA increases intrinsic interest/openness to change, and recurrent PEA–NEA arousal promotes robust work on both vision/the Ideal Self *and* improvement needs/the Real Self. Few studies have empirically tested ICT propositions on how positive and negative emotional interplay shapes the experience of coaching recipients during real-time coaching sessions, or the influence of coaches' timing and framing *(coaching to vision/the PEA versus coaching to improvement needs/the NEA)* on the coaching process and experience. As described in the following sections, the present study contributes preliminary findings on these dynamics.

Materials and Methods

Design

This study examined the emotional experience of eighteen coachees during a onetime, hour-long, one-on-one executive coaching session conducted by an executive coach. Participants were randomly assigned to one of two coaching conditions: the vision/PEA condition or improvement needs/NEA condition. In the vision/PEA condition the coach used the participant's own hopes, strengths, and desired future (Ideal Self) as the primary framework for work done in the coaching session. In the improvement needs/NEA condition the coach used the participant's perceived improvement needs, weaknesses, and current reality (Real Self) as the primary framework. Two main hypotheses were tested. Hypothesis$_1$ predicted that participants in the vision/PEA condition would show higher levels of expressed positive emotion during appraisal of 360° feedback results and discussion of change goals than recipients in the improvement needs/NEA condition. Hypothesis$_2$ predicted that vision/PEA participants would show lower levels of stress immediately after the coaching session than improvement needs/NEA participants.

A secondary aim of the study was collection of self-report data on coachees' current mood and satisfaction with the coaching session. Two secondary hypotheses were tested. Participants in the PEA condition were predicted to show higher levels of current mood and satisfaction with the coaching experience and relationship than participants in the NEA condition.

All study coaching sessions featured receipt and analysis of coachees' 360° feedback results on the Emotional Competence Inventory (Boyatzis and Sala, 2004), a self-administered survey completed by both self and other raters. The Emotional Competence Inventory (ECI-U) measures twelve emotional intelligence competencies and two cognitive abilities linked to superior leadership and performance in the workplace. In addition to help on interpreting their 360° feedback results, all coachees received support from the coach on exploring 2–3 possible change goals. Discussion of change goals built on participants' analysis of their feedback results. Participants' ECI-U feedback data were not collected for research purposes; these data were used solely by the coachee and coach as a feedback resource and discussion topic during the coaching session.

Two-tailed independent *t*-tests were conducted to establish that the PEA and NEA groups were comparable with regard to population parameters (demographic characteristics, length of coaching transcripts, and ECI-U feedback results). All tests were measured at the.05 level of significance. No differences in population parameters were found between the two conditions.

Two highly experienced coaches served as coaches in this study; both coaches had extensive backgrounds in organizational management and executive coaching. Each coach conducted both PEA and NEA coaching sessions based on participants' random assignment to the PEA or NEA coaching condition:

- To move discussion in the PEA condition, the coaches (1) framed the coaching process around the coachee's *vision/Ideal*

Self by exploring his or her future vision and perception of Ideal Self (e.g., his or her own hopes, strengths, dreams, desired future) at the beginning of the session; (2) supported the coachee during his or her assessment 360-degree feedback results and identification of strengths and weaknesses (e.g., listened to the coachee's reactions, answered the coachee's questions, responded to the coachee's observations and/or requests for the coach's feedback); and (3) helped the coachee to think about possible change goals to work on in future.

- Alternatively, in the NEA condition the coaches framed the coaching process around the coachee's *current reality/Real Self* by exploring his or her present-day interests and perception of Real Self (e.g., his or her own current concerns, day-to-day reality, improvement needs) at the beginning of the session; (2) supported the coachee during his or her assessment of 360° feedback results and identification of strengths and weaknesses (e.g., listened to the coachee's reactions, answered the coachee's questions, responded to the coachee's observations and/or requests for the coach's feedback); and (3) helped the coachee to think about possible change goals to work on in future.

A manipulation check was conducted to establish that all PEA coaching sessions followed the PEA coaching protocol and all NEA sessions followed the NEA coaching protocol. Four raters read all coaching session transcripts in their entirety and rated each session either as in the PEA coaching condition, or in the NEA coaching condition; manipulation check transcripts included all discussion between each coach and coachee. The manipulation check indicated that inter-rater agreement was high. All raters showed acceptable and statistically significant reliability: all raters' *r* values were above 0.7 and significant at the.001 level (two-tailed); mean agreement was 86% (0.863), median of 0.892, within a range of 0.714–1.0.

Sample

Participants for this study were local area alumni of a Midwest U.S. dental school. Nineteen mid and late-career practicing dentists participated in the study.[1] Participation in the study was voluntary. The mean age of this sample was 55 years (SD = 8.7)[2]; nearly half the participants were born between 1932 and 1949 (47.4%) and a slightly larger number between 1951 and 1967 (52.6%). Two participants were female (10%) and 17 were male (90%). The ethnic composition of the sample was 100% Caucasian; 31.6% of the participants headed group practices and 68.4% headed solo practices. All participants (100%) headed viable dental practices and were first time participants in an executive coaching assessment.

Procedures

This study was conducted in three time stages detailed below.

Time 1

Random assignment to two coaching conditions, the vision/PEA condition and improvement needs/NEA condition. Administration of a pre-coaching research survey with questions on demographic characteristics and three repeated-measure self-report scales on current mood. All participants additionally competed the university version of the ECI-U, a self-administered 360° executive assessment survey.

Time 2

Participation in an hour-long, audio taped coaching session conducted by a confederate coach. Immediately before the start of each coaching session a self-administered, pre-coaching saliva sample was collected from the participant by the researcher. The salivary cortisol collection was conducted in a private room several doors down from the coaching office. After collection of the pre-coaching cortisol sample, the participant was taken to the coaching room and introduced to the executive coach. The coach then conducted and audio taped an hour long, one-on-one coaching session. Immediately after the coaching session the participant returned to the private room to (1) self-administer a post-coaching saliva sample and (2) complete a post-coaching survey with the three repeated-measures on current mood and a repeated measure on satisfaction with the coaching experience and relationship.

Time 3

One month after the coaching session, administration of the repeated-measures surveys on current mood and satisfaction with the coaching experience and relationship.

Variables

The independent variables in this study were the coaching condition (vision/PEA condition versus improvement needs/NEA condition) and time. The time series levels within the 60-min coaching session included: 1) opening discussion on coachee's Ideal Self (or Real Self) and overview of ECI-U Report (Segment A/*beginning 15–20 min of the 60-min coaching hour*); (2) discussion/review of coachee's 360° feedback results (Segment B/*middle 15–20 min of the 60-min coaching hour*); and (3) closing discussion on coachee's assessment results and possible change goals (Segment C/*ending 15–20 min of the 60-min coaching hour*). The time series levels across the overall study period included: time 1 of the study administration *(at least 1 week prior to the coaching session)*; Time 2 of the study administration *(immediately before and after the coaching session)*; and Time 3 of the study administration *(1 month after the coaching session)*. The research variables, measures, and instruments are presented in **Table 1**.

The two major dependent variables were (1) level of positive emotion (versus negative emotion) during appraisal of 360° feedback results and discussion of change goals, and (2) level of stress immediately after the coaching session. A socioeconomic status (SES) measure was also administered.

[1] Although 19 participants were randomly assigned to study coaching conditions and completed all research procedures, one coaching session was not recorded due to malfunction of the tape recorder. As a result only 18 coaching participants were included in the final data analysis.

[2] Five participants did not indicate their year of birth.

TABLE 1 | Variables, measures, and instruments.

Variable	Level or measure	Instrument
Independent variable 1: Coaching Condition —Random Assignment	Two Levels: • PEA Condition (Ideal Self was the focus of the coaching session) • NEA Condition (Real Self was the focus of the coaching session)	
Independent Variable 2: Time — Time Series Analysis • Three Time Sequences within the 60 Min Coaching Session • Three Time Sequences Across the Overall Study Period	Three Levels: • Beginning, middle, and ending segments of the coaching hour (segments A, B, and C of the coaching session) • TIME 1 (at least 1 week before coaching session); TIME 2 (immediately after coaching session); TIME 3 (1 month later)	
Dependent Variable 1: Coachee's Level of Positive Emotion during appraisal of 360-degree feedback results and discussion of change goals.	Percentage of positive versus negative emotion words spoken by coachee during appraisal of feedback and discussion of possible change goals (during the coaching session/TIME 2).	Assessed using LIWC2001 software (Pennebaker and Graybeal, 2001).
Dependent Variable 2: Coachee's Level of Stress immediately after the coaching session.	Mean change (post-pre) in level of free salivary cortisol found in the coachee's pre-post saliva samples (TIME 2).	Clinical Laboratory Assessment.
Dependent Variables on Current Mood (secondary measures): Coachee's Current Arousal State, Current Goal Directed Thinking, Current Optimism.	Coachee's self-report on transitory arousal state, goal-directed thinking and optimism. A repeated measure administered at least 1 week before the coaching session/TIME 1; immediately after the coaching session/TIME 2; and 1 month later/TIME 3.	Assessed using the **AD ACL** (short term time instructions: *please use the rating scale next to each word to describe your feelings at this moment*); the **PANAS X** (short term time instructions: *indicate to what extent you feel this way right now, that is, at the present moment*); and the **Adult Hope Scale** (assesses goal directed thinking at a moment in time: *focus on yourself and your life at this moment. Once you have this "here and now" set, go ahead and answer each item according to the following scale*).
Dependent Variable on Satisfaction with the Coaching Experience and Relationship (secondary measure)	Coachee's self-report on satisfaction with the coaching experience and relationship. A repeated measure administered in TIME 2 and 3.	Assessed using a Coaching Satisfaction Scale developed by the researcher.
SES Variable	Coachee's self-report on demographic information (TIME 1).	Assessed using a self-report scale developed by the researcher.

Current mood and satisfaction with the coaching experience and relationship were treated as secondary dependent variables.

Analyses

Coached Person's Level of Positive Emotion during Appraisal of 360° Feedback and Discussion of Change Goals (DV_1)

The presence of emotion words in written and spoken speech is an indicator of cognitive emotional processing (Berry et al., 1997; Pennebaker et al., 2003). To assess positive emotion experienced by the coachee during the coaching session, all coaching sessions were audio taped and transcribed. Positive emotion experienced by the coachee was analyzed by measuring the percentage of positive versus negative emotion words in transcripts of coaching recipients' speech during the coaching sessions. Only transcripts of the coachee's speech were assessed for purposes of this study; the coach's speech was not analyzed. The transcripts were content analyzed using Linguistic Inquiry and Word Count (LIWC) software (Pennebaker et al., 2003) that assesses the emotional, cognitive, structural, and process components present in verbal and written speech. Based on the research hypotheses and supporting literature, this study primarily focused on one dimension of the LIWC dictionary for analysis of participants' coaching transcriptions: the *Affective or Emotional Processes* dimension. This dimension includes (1) positive emotions; (2) positive feelings; (3) optimism and energy; (4) negative emotions; (5) anxiety or fear; (6) anger; and (7) sadness or depression. In addition, the *Time* and *Leisure Activity* dimensions were employed. Time and Leisure dimensions are reported because they tap linguistic markers of psychological change (increase) in cognitive-analytic processing, and are cognitive processing dimensions that reached significance in the LIWC analysis. **Table 2** presents these three LIWC dimensions (Pennebaker et al., 2003, pp. 18–19).

In order to establish that transcriptions of coachees' speech in the PEA and NEA groups were comparable in length, a two-tailed independent *t*-test was conducted to test for differences between the two coaching conditions (PEA versus NEA) in mean number of pages in participants' transcripts.

TABLE 2 | Linguistic Inquiry and Word Count (LIWC) dimensions and categories employed in the present study.

Affective or emotional processes	Abbrev (affect)	Examples (happy, ugly, bitter)	# Words 615
Positive emotions	Posemo	happy, pretty, good	261
Positive feelings	Posfeel	happy, joy, love	43
Optimism and energy	Optim	certainty, pride, win	69
Negative emotions	Negmo	hate, worthless, enemy	345
Anxiety or fear	Anx	nervous, afraid, tense	62
Anger	Anger	hate, kill, pissed	121
Sadness or depression	Sad	grief, cry, sad	72
Time	**Abbrev (time)**	**Examples (hour, day, clock)**	**# Words 113**
Past tense verb	Past	walked, were, had	144
Present tense verb	Present	walk, is, be	256
Future tense verb	Future	will, might, shall	14
Leisure activity	**Abbrev (leisure)**	**Examples (house, TV, music)**	**# Words 113**
Home	Home	house, kitchen, lawn	26
Sports	Sports	football, game, play	28
Television and movies	TV	TV, sitcom, cinema	19
Music	Music	tunes, song, CD	31

No differences were detected between the length of participants' transcripts in the PEA condition and the length of participants' transcripts in the NEA condition [$t(16) = 0.659$, $p = 0.52$].

The objective of the LIWC analysis was to assess the percentage of positive emotion words (versus negative emotion words) present in the coached person's speech during appraisal of 360° feedback results and discussion of change goals (DV_1), and to collect time series data on participants' positive versus negative cognitive emotional processing over the coaching hour (i.e., the timing and sequence of experienced positive and negative affect). The data analysis strategy was to divide the transcript of each coached person's spoken output during the coaching session into three equal segments that reflected three basic stages in every participants' coaching session: (1) opening discussion on the coachee's Ideal Self (or Real Self) and an overview of the ECI-U format (first segment of the transcript/Segment A); (2) discussion of the ECI-U results, including the coachee's initial response to his or her 360° feedback data and exploration of change goals (middle segment of the transcript/Segment B), and (3) summary discussion on the assessment results and possible change goals (last segment of the transcript/Segment C).

Linguistic Inquiry and Word Count results were analyzed using two-way mixed ANOVAs, with the independent variable of coaching condition treated as a between subjects variable (PEA, NEA) and the independent variable of time treated as a within subjects variable (transcript Segments A, B, and C). *Post hoc* tests (Mann–Whitney, Tukey) were also conducted. All tests were measured at the 0.05 level of significance. **Table 3** presents the three coaching transcript segments, and the focus of discussion in each segment.

Coached Person's Level of Stress Immediately After the Coaching Session (DV_2)

Free salivary cortisol is a biomarker of stress (Lau and Morse, 2003; Dickerson and Kemeny, 2004; Hjortskov et al., 2004; Kurina et al., 2004). To assess level of stress, a pre-coaching saliva sample was self-administered by each participant immediately before the coaching session, and a post-coaching saliva sample was self-administered immediately after the session. Saliva samples were self-administered using a standard non-invasive process for collection of free cortisol in whole saliva (Dabbs, 1991; Good et al., 2004) — i.e., by using a dental swab placed under the tongue for a timed, 2-min period (and/or until the swab has been saturated with saliva). The pre and post-coaching saliva samples were collected by this researcher and taken to a Midwest University Clinical Research Center Laboratory for analysis of cortisol levels. Change in mean cortisol levels (post–pre) was compared between the PEA and NEA groups using a two-tailed independent *t*-test (measured at the 0.05 level of significance).

TABLE 3 | Focus of discussion during threehree transcript segments analyzed by LIWC

Segment A: opening discussion	Segment B: assessment discussion	Segment C: closing discussion/Summary
• Coachee discusses his or her personal vision and desired future (vision/PEA condition), or present reality and improvement needs (improvement needs/NEA condition), in response to the coach's greeting and opening comments.	• Coachee evaluates mostly strengths (and a little time on weaknesses) suggested by the feedback results (vision/PEA condition), or improvement needs/opportunities suggested by the feedback results (improvement needs/NEA condition), in response to the coach's prompts.	• Coachee continues the search for meaning in the feedback results and the exploration of future goals/action steps.
• Coachee asks questions and/or shares comments about the process, design, or format of the ECI-U in response to the coach's overview of the assessment and expert guidance on how to read the ECI-U feedback report.	• Coachee also may talk about possible change goals.	• Coachee raises unaddressed questions; moves toward integration of what he or she has learned.
	• Coachee invites input or feedback from the executive coach by asking the coach questions, responding to the coach's comments, offering more thoughts/information.	• Coachee shares closing thoughts or questions in response 2o the coach's summary of the coaching conversation.

Self-report Measures on Current Mood and Satisfaction with the Coaching Experience and Relationship (Secondary Measures)

Three self-report surveys were administered on current mood. *Current arousal state* was measured by The Activation-deactivation Adjective Checklist (AD ACL) Long Form (Thayer, 1986). *Current optimism* was measured by the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988; Watson and Clark, 1994). S*atisfaction with the coaching experience and relationship* was measured using a self-report scale on coaching satisfaction developed by this researcher. Results from all self-report scales were analyzed using mixed ANOVAs, with coaching condition (NEA, PEA) and time (TIME 1, 2, and 3) as independent variables. All tests were computed using $\alpha = 0.05$.

Results

Main Hypotheses

Hypothesis$_1$: Level of Positive versus Negative Emotion during Appraisal of 360° Feedback

Hypothesis$_1$ predicted that participants in the PEA condition would show higher levels of positive emotion during the coaching session than would participants in the NEA condition. Tests of H_1 assessed differences between the PEA and NEA groups on three measures of positive emotion (positive emotions; positive feelings; optimism and energy) and four measures of negative emotion (negative emotions; anxiety or fear; anger; sadness or depression). Tests of H_1 also tracked differences between the PEA and NEA groups in expressed positive versus negative emotion over three different time intervals, i.e., time series data on *changes* in positive and negative emotion during the coaching hour: *the beginning segment of the coaching session* (opening discussion on the Ideal Self/PEA or Real Self/NEA; ECI-U overview); *the middle segment of the coaching session* (discussion on 360° feedback results and possible change goals); *and the ending segment of the coaching session* (closing discussion on feedback results; integration of what was learned; summary of coaching conversation).

Significant Main Effects for Negative Emotions and Anger

A significant main effect was obtained for negative emotions, $F(1,48) = 4.114$, $p = 0.048$, indicating that during the coaching session the NEA group exhibited significantly higher use of words coded for negative emotion ($M = 0.915$) than did the PEA group ($M = 0.704$). *Post hoc* tests (Mann–Whitney, Tukey) were conducted in order to perform more stringent tests on Hypothesis$_1$. The result of a Mann-Whitney test on the main effect for negative emotions offered suggestive evidence of a difference between the two groups, $U(52) = 262.500$, $z = -1.698$, $p = 0.090$, indicating a need for replication of the study on a larger sample size. A significant main effect also was obtained for anger, $F(1,48) = 5.445$, $p = 0.024$, indicating that the NEA group additionally exhibited significantly higher use of words coded for anger ($M = 0.267$) as compared to the PEA group ($M = 0.133$). A Mann–Whitney test on the main effect for anger was not significant, $U(52) = 273.500$, $z = -1.520$, *n.s.*

Taken together, the significant main effects for negative emotions and anger lend partial support to H_1. Although no significant main effects were obtained for measures of positive emotion, participants in the PEA condition showed significantly lower levels of negative emotion during appraisal of 360° feedback results and discussion of change goals than participants in the NEA condition.

Significant Main Effect for Leisure Activity

Tests of Hypothesis$_1$ yielded a main effect for leisure activity. Although not an emotional process, the result for leisure activity is reported because it reached significance in the LIWC analysis. The main effect for leisure activity, $F(1,48) = 6.498$, $p = 0.014$, indicated that the PEA group showed significantly higher use of words coded for leisure activity ($M = 0.647$) than did the NEA group ($M = 0.355$). A Mann–Whitney test on the main effect for leisure activity was significant, $U(52) = 218.500$, $z = -2.464$, $p = 0.014$.

The main effect for leisure activity offers evidence that framing the coaching session around the PEA led participants in the PEA condition to focus more on personal interests or passions they were drawn to and/or enjoyed as compared to NEA participants, whereas framing the session around the NEA resulted in the NEA group's significantly lower attention to personal interests and passions.

Non-Significant Main Effects for Three Measures of Positive and Two Measures of Negative Emotion

Non-significant main effects were obtained for all three measures of positive emotion (positive emotions; positive feelings; optimism, and energy) and two remaining (out of four) measures of negative emotion (anxiety or fear; sadness or depression). **Table 4** presents all significant and non-significant main effects for tests of Hypothesis$_1$.

TABLE 4 | Tests of Hypothesis$_1$: main effects (18 subjects; two conditions; 48 between subjects measures; significant main effects presented in shaded text).

Effect	*df*	Error Term	*F*	Significance	*M* (PEA)	*M* (NEA)
Negative emotions	1	48	4.114	0.048	0.704	0.915
Anger	1	48	5.445	0.024	0.113	0.267
Positive emotions	1	48	0.001	0.972	2.896	2.886
Positive feelings	1	48	1.032	0.315	0.521	0.636
Optimism and energy	1	48	0.057	0.812	0.475	0.457
Anxiety or fear	1	48	0.063	0.802	0.143	0.133
Sadness or depression	1	48	0.001	0.741	0.103	0.112
Leisure activity	1	48	6.499	0.014	0.647	0.355

Computed at the 0.05 level of significance.

Interaction Effects Obtained for Hypothesis$_1$

Although no main hypotheses were presented on time effects, time was an independent variable in this study. Interaction effects were obtained from tests of H_1 which provided time series data on *changes* in expressed emotion during the coaching hour, i.e., changes that took place from the *beginning segment* of the coaching session (opening discussion on the Ideal Self/PEA or Real Self/NEA; ECI-U overview), to the *middle segment* (discussion on 360° feedback results and possible change goals), to the *ending segment* (closing discussion on feedback results; integration of what was learned; summary of coaching conversation). Two significant interaction effects were found, one for sadness or depression and the other for future.

Interaction Effect Obtained for Sadness and Depression

The significant interaction effect for sadness or depression, $F(2,48) = 4.98$, $p = 0.011$, documented NEA–PEA differences in segment-to-segment change in level of words coded for sadness or depression. In segment A of the coaching session (opening discussion on the Ideal or Real Self and overview of the ECI-U format) the NEA group exhibited a baseline level of words coded for sadness or depression ($M = 0.121$). In segment B (discussion of 360° feedback and possible change goals) the NEA group showed an even higher level of words coded for sadness or depression ($M = 0.169$). However, in segment C (closing discussion on feedback results, integration of what was learned and summary of the coaching conversation) the NEA group showed a drop in level of words coded for sadness or depression ($M = 0.045$). A different pattern of time series change was seen in the PEA group. In segment A the PEA group's baseline level of words coded for sadness or depression was $M = 0.079$. In segment B the PEA group showed an increase in words coded for sadness or depression ($M = 0.085$), and in segment C the PEA group was even higher in words coded for sadness or depression ($M = 0.146$). *Post hoc* Tukey's HSD tests (at $p < 05$) conducted on both interaction effects were not significant. Time series results on sadness or depression for segments A and B are in the expected direction (mean for NEA > PEA), with a reversal in segment C (mean for NEA < PEA) in both conditions during discussion of change goals. **Figure 2** presents the significant interaction effect for sadness or depression.

Although time series results on sadness or depression for segments A and B are in the predicted direction (mean for NEA > PEA), the reversal in segment C is counterintuitive (mean for NEA < PEA). One explanation for the NEA group's sudden decline in level of words coded for sadness or depression during segment C may be that participants in the NEA group focused primarily on current reality and improvement needs throughout the coaching session, engaged in more negative emotional processing than did participants in the PEA group, hence were emotionally lifted when the session moved toward closure. Conversely, participants in the PEA group focused primarily on future possibilities and strengths, engaged in a lesser amount of negative emotional processing than did the NEA group (and perhaps were more energized by the coaching conversation than participants in the NEA group), hence were sadder to see the session come to an end. Support for this explanation is offered by the significant interaction effect on future reported next.

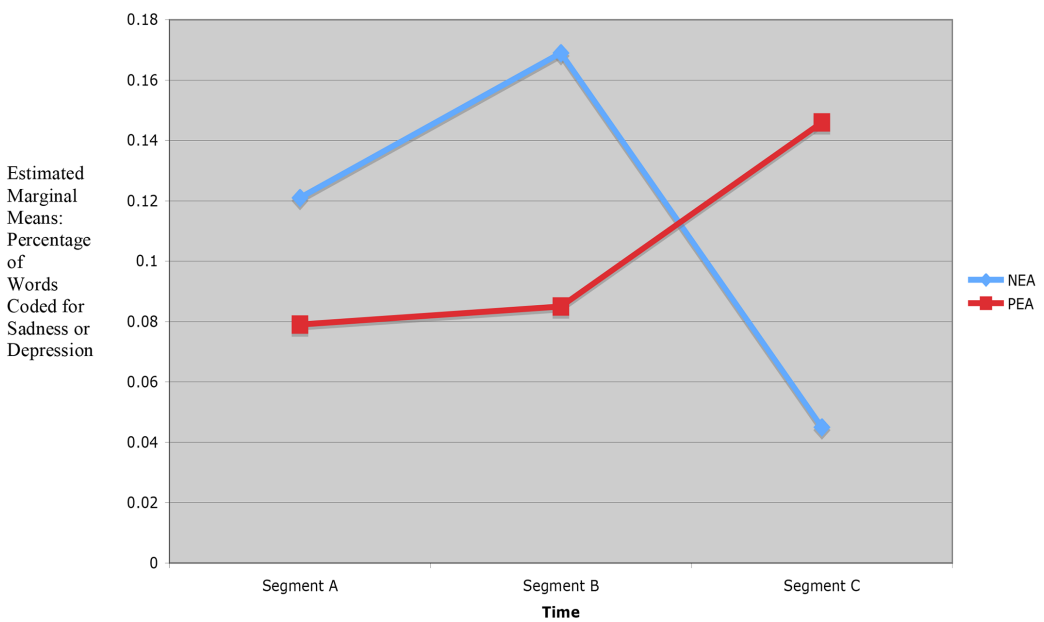

FIGURE 2 | Interaction effect for sadness or depression (18 participants, two conditions, 48 measures).

Interaction Effect Obtained for Future

The significant interaction effect for future, $F(2,48) = 3.559$, $p = 0.036$, documents segment-to-segment change in percentage of words coded for future. In segment A (opening discussion on the Ideal or Real Self and overview of the ECI-U format) the PEA group exhibited a baseline use of words coded for future ($M = 1.492$). In segment B (discussion of 360° feedback and possible change goals) the PEA group showed a relative decrease in use of words coded for future ($M = 1.059$). In segment C (closing discussion on feedback results, integration of what was learned, and summary of the coaching conversation) the PEA group showed a relative increase in words coded for future ($M = 1.212$). The opposite pattern was seen in the NEA group. In segment A the NEA group's baseline use of words coded for future was $M = 1.006$. In segment B the NEA group exhibited relatively higher use of words coded for future ($M = 1.444$), and in segment C the NEA group showed a relative decrease in words coded for future ($M = 1.119$). **Figure 3** presents the significant interaction effect for future.

The significant interaction effect for future is interpreted as suggestive evidence on early arousal of the PEA (participants in the PEA condition) and NEA (participants in the NEA condition) during segment A (opening discussion on the Ideal or Real Self and overview of the ECI-U format) — and emergent interplay of positive and negative emotion in segments B and C. For example, at the beginning of the coaching session PEA participants were induced by their respective coaches to focus on the Ideal Self (hopes, strengths, desired future), and NEA participants were induced to focus on the Real Self (improvement needs, weaknesses, current reality). The significant interaction effect for future suggests that early PEA arousal led the PEA group to (1) focus on the future in segment A (indicated by a higher percentage of words coded for future as compared to the NEA group); (2) switch its focus to present reality in segment B (indicated by a relative decrease in percentage of words coded for future in segment B); and (3) refocus on the future in segment C (indicated by a relative increase in percentage of words coded for future in segment C). Conversely, early NEA arousal led the NEA group to (1) focus on present reality in segment A (indicated by a lower percentage of words coded for future as compared to the PEA group); (2) switch its focus to the future in segment B (indicated by a relative increase in percentage of words coded for future in segment B); and (3) refocus on present reality in segment C (indicated by a relative decrease in percentage of words coded for future in segment C).

Again, ICT (Boyatzis, 2006; Howard, 2006), supported by selected emotion regulation research (Freitas et al., 2002; Diamond and Aspinwall, 2003) and cognitive emotion research on non-linear dynamics in human flourishing/positivity ratios (Gottman et al., 2002; Losada and Heaphy, 2004; Sanford and Rowatt, 2004; Fredrickson and Losada, 2005; Fredrickson, 2013), proposes that intentional change is characterized by recurrent PEA-NEA arousal, and that (associated) interplay of positive emotion and negative emotion shapes the form and flow of intentional change. In the current study, segment-to-segment reversals documented by the significant interaction effects for sadness or depression and future can be viewed as suggestive evidence on recurrent PEA–NEA–PEA arousal (PEA condition) and recurrent NEA–PEA–NEA arousal (NEA condition), and related PA–NA interplay during the coaching hour.

As discussed earlier (see Role of the Positive Emotional Attractor (PEA) and Negative Emotional Attractor (NEA) in Intentional Change to Timing), negative emotions facilitate identification of situational requirements, weaknesses, and problems — and mobilize extrinsic motivation and self-protective coping. Conversely, positive emotions facilitate identification of

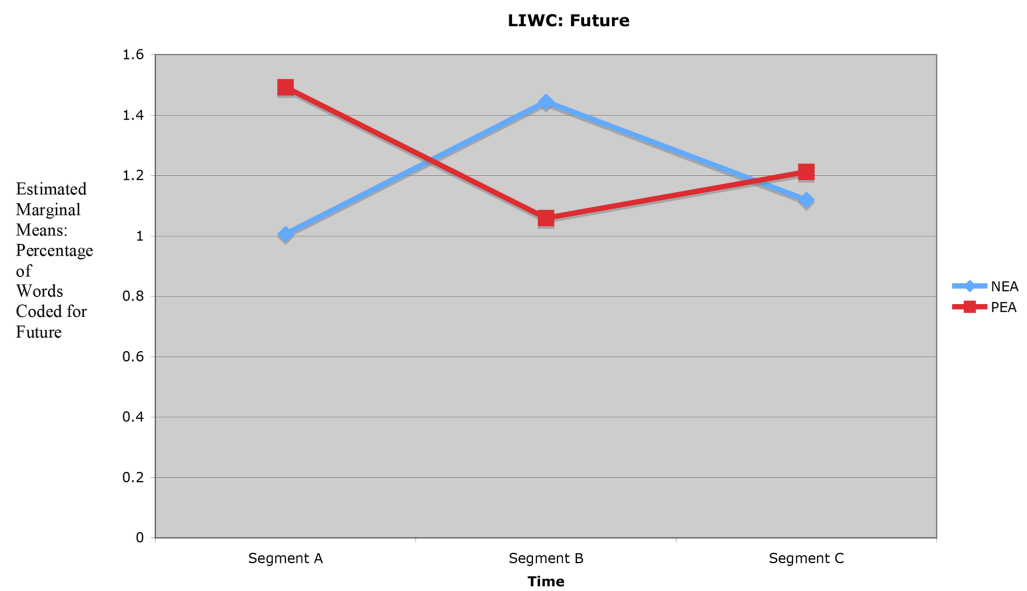

FIGURE 3 | Interaction effect for future (18 participants, two conditions, 48 measures).

the desired future, strengths, and personal passions — and mobilize intrinsic motivation and broad-minded coping. Overall, the PEA group's significantly higher expression of personal interests/passions and significantly lower demonstration of negative emotions and anger, as compared to the NEA group, are interpreted as preliminary evidence that the NEA group was more narrowly focused on extrinsic requirements and self protective coping than was the PEA group, and indirect evidence that the PEA group may have experienced higher levels of positive emotion than did the NEA group. Interestingly, comparison of means for the PEA group ($M = 2.896$) versus NEA group ($M = 2.886$) on the non-significant main effect for positive emotions reveals a trend in this direction (mean for PEA > NEA.

Hypothesis$_2$: Level of Stress Immediately After the Coaching Session

Hypothesis$_2$ predicted that participants in the PEA condition would show lower levels of stress immediately following the coaching session than participants in the NEA condition. Level of stress was assessed by the measuring the cortisol levels (ug/dl) of participants in the PEA and NEA groups before and after their respective coaching sessions. Cortisol assays were analyzed by a clinical research laboratory and pre to post-coaching change in salivary cortisol was calculated for each participant (n-18). The change in mean cortisol levels (post–pre) was compared between the PEA and NEA groups using a two-tailed independent t-test. The t-test was computed using $\alpha = 0.05$. No significant differences were found between the PEA group ($M = 0.002$) and NEA group ($M = 0.036$), $t(16) = -0.508$, $p = 0.618$, in level of stress immediately after the coaching session.

Although numerous studies have shown that psychological stressors can activate cortisol release (Smyth et al., 1998), research on the association between psychological stressors, affect, and salivary cortisol levels has produced inconsistent findings (Dickerson and Kemeny, 2004) on precisely when-and-how cortisol activation occurs. Given the ongoing theoretical debate on precisely what specific contexts and essential elements elicit cortisol responses, there is a need for follow-up examination of H_2. For example, individual factors such as participants' basal cortisol rhythms (Adam and Gunnar, 2001; Kurina et al., 2004), hypothalamic-pituitary-adrenal axis (HPA) reactivity to psychological stress (Singh et al., 1999), and responsivity to and/or mobilization for change (Brown et al., 1996) may have influenced the cortisol results reported herein. Also, socio-environmental factors such as quality of social support and social relationships have been shown to influence cortisol activation (Seeman and McEwen, 1996; Smyth et al., 1998). Consistent with these findings, it is possible that PEA and NEA participants showed no significant post–pre increase in mean cortisol levels due to receipt of (valued) social support from the executive coach in the just-concluded coaching session.

The above interpretation regarding the possible influence of social support and current mood on participants' observed cortisol level is supported by the finding of no significant between group differences on measures of current mood (pre-coaching and post-coaching) and satisfaction with the coaching experience and relationship (immediately after the coaching session and 1 month later). These results suggest that (1) NEA participants were not more displeased with or upset by the coaching experience (i.e., digestion of 360° feedback results, consideration of change goals, help from the coach) than were PEA participants, and (2) NEA participants' higher levels of negative emotions and anger can be viewed as evidence of emotional processing triggered by primary arousal of the coached person's NEA/Real Self/extrinsic motivation, and secondary arousal of his or her PEA/Ideal Self/intrinsic motivation.

Similarly, the present finding may suggest that the coaching engagement simply was not a stressful experience, i.e., that the negative emotion experienced during the coaching session by participants in both groups did not reach the level of threat required to trigger a physiological stress reaction (i.e., a cascade of negative neuroendocrine activation). For example, the experience of negative emotion during a particular coaching session may not be detrimental in and of itself. Negative emotions can actually assist the coachee in feedback appraisal, recognition of problems, goal setting, and other cognitive-emotional tasks during intentional change. In this study NEA participants demonstrated a significantly higher level of negative emotions and anger than did the PEA group.

Secondary Measures

Secondary Hypotheses on Current Mood and Satisfaction with the Coaching Experience and Relationship

Two secondary hypotheses were examined on current mood and satisfaction with the coaching session and relationship. Immediately after the coaching session and 1 month later, participants in the PEA condition were predicted (1) to show higher levels of positive mood and (2) to show higher levels of satisfaction with the coaching experience and relationship than were participants in the NEA condition. The study employed three self-report measures on current mood (transitory arousal state, goal directed thinking, optimism) and one self-report measure on coaching satisfaction. All tests were computed using $\alpha = 0.05$. Analysis of all self-report measures yielded statistically non-significant main effects.

Non-significant results on current mood may indicate that participants were not consciously aware of small changes in momentary arousal of positive versus negative emotion during the coaching session; antecedent research has found that self-report measures and reaction tests are less effective in measuring cognitive-emotional processing than approaches that employ linguistic analysis (Pennebaker and Lay, 2002).

The non-significant result on satisfaction with the coaching session and relationship may suggest that both groups were satisfied with the coaching experience despite present findings on lower levels of negative emotion and anger in the PEA group versus NEA group. One explanation for the non-significant finding on coaching satisfaction is that study participants were

mid-career professionals heading competitive dental practices. They also were first-time recipients of an executive coaching assessment. As practicing dentists and heads of group practices (31.6%) and solo practices (68.4%), participants in both conditions may have viewed the coaching session as a rare opportunity to receive executive coaching support and 360° feedback on their interpersonal abilities and dental team leadership skills.

In any case, non-significant findings on the self-report measures (current mood; satisfaction with the coaching experience and relationship) highlight the potential importance of the coach's ability to anchor a coaching session in the coached person's PEA, and to give secondary attention to the NEA. This ability may be critical because the coached person may or may not be aware of the restorative benefits of positive emotional processing, nor able to optimize the long term benefits of grounding in the PEA.

Discussion

This study was the first ICT study to empirically examine the differential impact of inducing the coached person's vision/PEA versus improvement needs/NEA during a real-time coaching session on appraisal of 360° feedback results and exploration of change goals. Findings showed that participants primarily coached to vision/PEA experienced a significantly lower level of negative emotions ($p = 0.048$) and anger ($p = 0.024$) during the coaching session as compared to participants primarily coached to improvement needs/NEA. In addition, the vision/PEA group focused significantly more on leisure activity (personal interests and passions such as competitive car racing, athletics, volunteerism, travel) than did improvement needs/NEA participants ($p = 0.014$).

Time series analysis of the beginning (segment A), middle (segment B), and ending (segment C) sequences of the coaching sessions offered suggestive evidence that both groups experienced notable changes in positive and negative emotional processing during the coaching hour. A significant interaction effect for level of sadness or depression ($p = 0.011$) documented segment-to-segment change in expressed sadness; and a significant interaction effect for future documented segment-to-segment change in expressed attention to the future ($p = 0.036$).

Consistent with social complexity perspectives on the capacity of small occurrences to have large impacts over time (Casti, 1994), the present findings are interpreted as preliminary evidence that framing a coaching session in the coached person's vision/PEA (versus Real Self/ NEA) enhances work on intentional change. Although participants in both groups appeared to benefit from the coaching experience (no significant between group differences were found on level of stress, post-coaching current mood, or post-coaching satisfaction with the coaching experience and relationship), the data suggest that the PEA group demonstrated significantly lower levels of expressed negative emotions and anger during the coaching hour as compared to the NEA group. Given the comparatively elevated levels of negative emotion and anger exhibited by the NEA group, it is reasonable to suggest that framing a coaching session in vision/the PEA may foster a higher level of positivity (Gottman, 1994; Gottman et al., 2002), leverage the broaden-and-build benefits of positive emotion/positivity (Fredrickson, 1998, 2000a,b, 2001, 2003, 2013; Fredrickson and Losada, 2005), and create a richer emotional space (Losada and Heaphy, 2004) than was experienced by the NEA group. The significant between-group difference on discussion of personal interests or passions (i.e., the measure on leisure activity) lends support to this idea. Last, significant findings on segment-to-segment changes in sadness or depression and future (time series changes observed in both groups) are interpreted as suggestive evidence on recurrent mobilization of positive *and* negative emotion during intentional change.

Implications for Research

A core aim of this study was to conduct an empirical investigation on specific ways in which the coached person's cognitive affective processing influences the form and flow of his or her work on desired change during real time coaching sessions — and specific ways in which his or her coach can leverage this processing to promote sustained change. Few coaching studies have empirically tested propositions from a theoretical model on the differential influence of positive versus negative emotional processing in intentional change. Moreover, few empirical studies have explored what happens in live coaching sessions. This study contributes preliminary findings upon which to build future research on the impact of positive versus negative emotional processing in real-time coaching contexts, empirical work of potential relevance to emotion and coaching researchers alike.

Findings showed that framing a coaching session in vision/the PEA resulted in the vision/PEA group's comparatively lesser experience of negative emotions and increased discussion of personal interest/passions as compared to the improvement needs/NEA group. On the other hand, framing the session in improvement needs/the NEA resulted in comparatively higher experience of negative emotions and lesser focus on personal interests/passions. Even so, these findings leave open the question of whether PEA framing directly activates positive emotions, as was predicted in Hypothesis$_1$. Based on significant main effects and significant *post hoc* tests, the findings are viewed as suggestive evidence that vision/PEA framing does activate positive emotions and their beneficial effects, and that replication of the present study on larger sample sizes will yield the predicted results (i.e., higher levels of positive emotion in coaching sessions framed by early vision/PEA induction).

Also meriting further investigation are current findings on the beneficial effects of recurrent PEA arousal. This study found that framing the coaching session primarily in vision/the PEA, with secondary focus on the NEA, resulted in recurrent arousal of the PEA during the coaching hour, lower levels of negative emotion/anger, and elevated expression of personal interests/passions. Conversely, participants who received coaching framed primarily in improvement needs/the NEA experienced higher levels of negative emotions/anger and lesser discussion of

personal interests/passions. More study is needed to establish that recurrent PEA arousal activates positive emotions as opposed to merely decreasing the level of negative emotions, and that predominant NEA arousal does not foster sufficient PEA recurrence to optimize recovery from the harmful effects of negative emotional processing.

Present findings on time series change in expressed emotion during the beginning, middle, and ending segments of study coaching sessions offered indirect evidence on the interplay of positive and negative emotions during the coaching hour. Questions remain about precisely *how* primary focus on vision/the PEA and secondary focus on improvement needs/the NEA shapes this interplay and assists behavior change. Time series research on coaching is needed to further examine the relationship between positive and negative emotional interplay in real time coaching sessions – and the optimal balance between positive versus negative emotional processing during intentional change.

Overall, for recipients of an hour-long coaching session, early vision/PEA arousal (1) fostered a significantly lower level of negative emotions and significantly greater consideration of personal passions (as compared to early improvement needs/NEA arousal); (2) led to significantly lower levels of anger during initial appraisal of feedback results (as compared to early NEA arousal); and (3) generated different patterns of time series change in emotional processing over the coaching hour (as compared to patterns generated by early NEA arousal). Taken together, these results suggest that vision/PEA arousal versus improvement needs/NEA arousal impact the coaching process in quite different ways; that the coach's initial framing of the session predominantly in the PEA (or, alternatively, predominantly in the NEA) fosters emotional processing that is driven by this initial framing; and that both the PEA (and associated positive emotions) and NEA (and associated negative emotions) play an important and recurrent role in shaping the change process. Further study on these outcomes will enable researchers to shed more light on the differential impact of the PEA versus NEA on intentional change, and how to leverage the benefits of both emotional attractors.

Implications for Practice

Both researchers and practitioners have called for empirical research that can ground coaching practice in tested theory and techniques. Current findings suggest that coaches can benefit from better understanding the importance of tapping intrinsic motivation and passions through coaching to vision/the PEA. Coaches additionally would benefit from better understanding how to leverage the long-term advantages, and restorative benefits, of positive emotions during coaching engagements. The findings also highlight coaches' need to appreciate the impact of timing effects on coaching intentional change, and how coaches can play a critical role in calibrating the pace and focus of work on intentional change. Early arousal of the coachee's PEA, accompanied by recurrent PEA–NEA induction, may help coachees be/become more creative, optimistic, and resilient during a given change process. Also, primary focus on vision/PEA and secondary focus on improvement needs/NEA may better equip coaches and coaching recipients to work together on building robust learning, development, and change.

Limitations

Findings are based on participants' response to a one-time, hour-long coaching session. As first-time recipients of an executive assessment, research participants may have been unfamiliar with management coaching and may not have known precisely what to expect. The population was limited to mid-career medical professionals (practicing dentists/dental practice heads) and did not include individuals from management or other professional sectors; it is not yet clear whether these findings can be generalized to other populations. Also, the study is based on 18 coaching sessions and needs to be replicated on larger samples.

Acknowledgments

The research reported here conformed to all relevant regulatory standards and was reviewed and approved by the Social/Behavioral Institutional Review Board at the host university.

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Conflict of Interest Statement: The Reviewer John Paul Stephens declares that, despite being affiliated to the same institution as the author Anita Howard, the review process was handled objectively and no conflict of interest exists. The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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