THE PSYCHOLOGY OF SMALL BUSINESS OWNERS

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THE PSYCHOLOGY OF SMALL BUSINESS OWNERS

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No Need to Worry? Anxiety and Coping in the Entrepreneurship Process

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Understanding experiences of and responses to anxiety is foundational to developing robust theories of entrepreneurial behavior. Using open-ended, vignette and graphical elicitation interviews with 77 entrepreneurs, we inductively investigate the experience of and coping responses to anxiety during the entrepreneurship process. We develop a comprehensive and dynamic goal-striving model to explain experiencing and coping with entrepreneurial anxiety by integrating empirical findings with appraisal and control theories. In doing so, we theorize that entrepreneurial anxiety is endogenous to a cyclical conception of goal-striving, such that various sources of anxiety make sense only in consideration of the goals, standards or values to which they pertain. In this regard, entrepreneurs' coping responses influence four different points of an iterative goal-striving cycle—an insight that moves beyond problematic static and binary coping classifications.

Keywords: entrepreneurship process, negative emotions, anxiety, coping, fear of failure

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INTRODUCTION

Entrepreneurship provides organizational psychologists a unique context wherein uncertainty, financial and personal exposure, and psychological ownership combine in a more extreme as well as isolated manner than found in large, mature organizations (Baron et al., 2007). While research on entrepreneurial employees argues that stress arises from role conflict, role ambiguity, and role overload (Dess, 2003), independent entrepreneurs often face additional financial, social and psychological uncertainties and risks that can cause stress and anxiety (Parslow et al., 2004; Rauch et al., 2018). As part of a broader research stream advancing "hot" theories of entrepreneurial emotions and well-being (Cardon et al., 2012; Shepherd, 2015; Stephan, 2018), we study the omnipresence of anxiety—worry, doubt and unease about something with an uncertain outcome (Miceli and Castelfranchi, 2005)—among entrepreneurs. As anxiety is experienced as unpleasant, contemporary research has been guided by the principle that it should be minimized to reduce its strain on decision-making abilities and effort (Grichnik et al., 2010; Welpe et al., 2012; Doern and Goss, 2014; Kollmann et al., 2017). However, recent studies have shown that anxiety may also facilitate the creative thinking and effort of entrepreneurs (Foo et al., 2009; Cacciotti et al., 2016). Moreover, although anxiety is ubiquitous and negatively experienced, entrepreneurs express satisfaction with their work (Benz and Frey, 2008; Stephan and Roesler, 2010; Morris et al., 2012; Barba-Sánchez and Atienza-Sahuquillo, 2017). This suggests that persisting entrepreneurs are often able to harness anxiety and thrive in these circumstances.

Nevertheless, our understanding of the ways in which entrepreneurs transform anxiety into positive behavioral outcomes remains incomplete. To date, anxiety is thought to arise from negative perceptions of environmental stimuli that threaten venture survival, giving rise to fear of failure (Cacciotti et al., 2016). However, anxiety may also arise when failure of the venture is not directly at stake. It is not only threats to business survival that surfaces anxiety, but to a range professional and personal goals and standards. In addition, when studying how entrepreneur deal with fear of failure, the extant literature has focused on problem and emotion-focused (Patzelt and Shepherd, 2011), or avoidance and approach-focused (Uy et al., 2013; Cacciotti et al., 2016) coping of entrepreneurs. As Folkman and Lazarus (1980) and Skinner et al. (2003)point out, binary and static coping categories are problematic because underlying coping behaviors often fit into both categories which undermines their explanatory power. It follows that there is a need to better unravel the dynamics and mitigation of anxiety to answer how entrepreneurs persist in the face of ubiquitously experienced anxiety.

To address these issues, we seek to inductively answer the question of how entrepreneurs experience and cope with anxiety during the entrepreneurship process in order to meet their goals and standards. We employ a qualitative methodology that combines two waves of open-ended and structured interviews with a total of 77 entrepreneurs. Through recursive data collection, analysis and links to control theory (Carver and Scheier, 1981, 1998) and appraisal theory (Lazarus, 1966, 1999; Lazarus and Folkman, 1984), we develop an goal-striving model of entrepreneurial anxiety and coping.

Our empirical findings and conceptual model contribute to the literature in a number of ways. First, we will go beyond implicit acknowledgment of the importance of goals in the entrepreneurship process (Patzelt and Shepherd, 2011; Jenkins et al., 2014; Cacciotti and Hayton, 2015). We will theorize that anxiety is endogenous to a cyclical conception of goal-striving, such that various sources of anxiety make sense only in consideration of the goals, standards or values to which they pertain. Anxiety occurs when entrepreneurs perceive of an altered situation and assess that it threatens the achievement of any of a variety of business or personal goals, standards or values. Secondly, we will study anxiety in both its valence and activation aspects. Whereas the experience is unpleasant (valence), entrepreneurs report that anxiety often makes them work harder and better (activation). The extant literature has predominantly focused on the inhibiting effects on fear of failure.

Thirdly, our conceptual and empirical work will show that coping categories influence four different points of an iterative goal-striving cycle—an insight that moves significantly beyond problematic static and binary coping classifications. To cope with anxiety, we reveal that entrepreneurs undertake behaviors corresponding to four coping categories: directly address the issue at hand, change perceptions, adapt goals, and increase coping ability. Subsequently, these four coping categories are shown to be used concurrently within a cyclical process of goal-striving that dissipates anxiety concomitantly with increased effort and satisfaction. Accordingly, our dynamic and comprehensive model explains both how and why entrepreneurs experience anxiety, as well as how and why they transform it into positive cognitive and behavioral outcomes.

As such, our study contributes to the anxiety and coping literatures more generally by allowing for the development of explanations and models from a context where uncertainty, challenges, financial and personal exposure, and psychological ownership combine in a more extreme manner than found in ordinary employment or private settings. Consequently, our study opens up new research questions, and has practical implications for entrepreneurial education and training.

THEORETICAL MOTIVATION AND OPPORTUNITIES FOR CONCEPTUAL DEVELOPMENT

Entrepreneurship is widely perceived to be an "emotional rollercoaster" (Schindehutte et al., 2006) involving a range of positive and negative emotions (Fodor and Pintea, 2017). Although being an entrepreneur is experienced as satisfying (Benz and Frey, 2008; Morris et al., 2012; Stephan, 2018), entrepreneurs routinely face uncertainties, setbacks and challenges (van Gelderen, 2012). The negative emotions generated by the entrepreneurial process raise the question why and how surviving entrepreneurs are able to persist and even thrive under such conditions. Perseverance, resilience, and the ability to regulate emotions are seen as essential vital for entrepreneurial success (Millán et al., 2012; Holland and Garrett, 2015; Barba-Sánchez and Atienza-Sahuquillo, 2017; Chadwick and Raver, 2018; De Cock et al., 2019).

Recently, fear of failure has been a topic of study and is sometimes used synonymously with anxiety (Cacciotti and Hayton, 2015; Cacciotti et al., 2016). However, we follow Miceli and Castelfranchi's (2005) argumentation that anxiety encompasses feelings of fear (of failure), doubt, worry, and unease. Fear (of failure) is just one form of anxiety, in that entrepreneurs are not only fearful of eventual business failure. Anxiety also includes worries about a range of much more proximal threats (e.g., pertaining to financial concerns, completing tasks, responsibility to others or maintaining positive self-image) and doubts about abilities to deal with situations effectively, even when the business is not at risk. In addition, other emotions than fear can also coincide with anxiety (e.g., shame and guilt). Put another way, as we will show in this article, many entrepreneurs experience anxiety without feeling fear (of failure). Furthermore, while fear always has an immediate and direct object, anxiety can be lingering and indeterminate. Hence, although overlapping, anxiety is a broader term and therefore the focus of this study.

Although the literature has made significant gains, opportunities for conceptual development remain. The first opportunity concerns the study of anxiety when in the entrepreneurial process, rather than as a deterrent to enter the entrepreneurial process. Negative emotions such as fear of failure have been found to be a deterrent to starting a business or acting on an opportunity (Grichnik et al., 2010;

Ekore and Okekeocha, 2012; Podoynitsyna et al., 2012; Welpe et al., 2012; Doern and Goss, 2014; Kollmann et al., 2017). Grichnik et al. (2010) find evidence that fear negatively influences not only opportunity evaluation, but also opportunity exploitation. This is supported by Kollmann et al.'s (2017) experimental study that found the mere perception of obstacles activates a fear of failure, which, in turn, has a detrimental impact on opportunity evaluation and exploitation. However, it has recently been proposed that fear can actually be a motivator during the entrepreneurship process (Hayton and Cholakova, 2011). Drawing on interviews with 35 entrepreneurs, Cacciotti et al. (2016) find that fear of failure may lead to increased effort. Similarly, Foo et al. (2009) find evidence that negative valence associated with anxiety (e.g., upsetness, irritability, nervousness, distress, and jitteriness) positively predict the effort put toward tasks that require immediate attention. Given the empirical evidence that anxiety may facilitate or hinder the efforts of entrepreneurs, a number of scholars have called for more inductive investigations to explain the dynamics between negative affect and coping during the entrepreneurship process (Cardon et al., 2012; Cacciotti and Hayton, 2015; Grégoire et al., 2015; Shepherd, 2015).

The second opportunity revolves around anxiety being inherently tied to many goals and standards rather than mere venture survival. For example, Patzelt and Shepherd (2011), citing Folkman and Moskowitz (2004, p. 747), point out that "coping enables individuals to deal with negative emotions that arise when important goals have been harmed, lost, or threatened". Similarly, Cacciotti and Hayton (2015, p. 165) posit that "the nature of fear and the diverse cognitive and behavioral mechanisms that it triggers suggests that it could be a friend as much as a foe, by causing greater striving toward desired goals." Cacciotti et al. (2016) findings suggest anxiety can be related to multiple higher or lower-order goals and standards, which range from threats to achieving financial success, and maintaining self-esteem to completing everyday tasks. However, no explicit theorizing of the relation between goals and anxiety is provided.

The third opportunity involves expanding our understanding of coping during the entrepreneurship process, which currently remains limited. Existing research on the coping behaviors of entrepreneurs has highlighted their use of problem or emotion-focused coping (Patzelt and Shepherd, 2011) and avoidance or approach coping (Uy et al., 2013; Cacciotti et al., 2016) to reduce anxiety. Patzelt and Shepherd (2011) demonstrate that there is a negative relationship between self-employment and the experience of negative emotions, generally, and this relationship is stronger for those who use problem and emotion-focused coping than for those who do not. Uy et al. (2013) and Cacciotti et al. (2016) argue that using approach and avoidance coping—taking action or delaying action—helps entrepreneurs to maintain their wellbeing and overcome anxiety in the entrepreneurship process, particularly if they have prior entrepreneurial experience. Thus, in the entrepreneurship literature, coping responses continue to be viewed on aggregated levels, even though such binary and static classifications have been challenged in the mainstream coping literature. Skinner et al. (2003) point out that problem and emotion-based coping are not mutually exclusive and that most ways of coping can serve both functions and thus fit into both categories. Moreover, as stated by Lazarus (1996, p. 293), "although it is tempting to classify any coping thought or act as either problem-focused or emotion-focused, in reality any coping thought or act can serve both or perhaps many other functions." Similarly, approach and avoidance are complementary coping processes and, over the course of dealing with taxing situations, people can—and usually do— repeatedly cycle between them (Gross, 2015). Finally, while the extant literature sees coping with negative affect such as anxiety as serving the function of reducing its aversive experience, we are interested in how anxiety may spur those who are actually committed to their venture on to perform at a higher level.

Accordingly, the critical problem for the field is to develop a more situated and dynamic understanding of anxiety and coping responses during the entrepreneurship process. In this study, we act on all three opportunities described above, and provide an empirical and theoretical answer to the question: *how do entrepreneurs experience and cope with anxiety during the entrepreneurship process in order to meet their goals and standards?*

METHODOLOGY

Qualitative research is appropriate when the research question focuses on a process—or how something occurs—and when a theory needs to be developed or elaborated (Creswell and Miller, 2000). Given the ethical dilemmas of inducing anxiety in subjects in laboratory experiments, intensive interviews are the method of choice for researching this sensitive phenomenon. Under such circumstances, in-depth interviews are more likely to create original and precise accounts of previously unexplored phenomena (Grégoire et al., 2015; Shepherd, 2015). In particular, we draw on template analysis to inform our data collection techniques and to structure our data analysis (Brooks and King, 2014; King and Brooks, 2017).

Research Design

Template analysis is commonly used in qualitative psychology (Kent, 2000; Poppleton et al., 2008), particularly in occupational health (Gollop et al., 2004; Brooks et al., 2015). We chose to use template analysis for two main reasons. First, it uses two waves of data collection to reveal and refine emergent patterns. Specifically, in the first wave of data collection, it allows us to inductively identify the sources and coping mechanisms in the initial startup of a venture through open and axial coding. Second, in the second wave of data collection, template analysis allows us to systematically assess and refine our findings over a longer period of time by collecting structured interview data with entrepreneurs within one to 5 years after foundation. Therefore, the core strength of template analysis is that researchers modify or elaborate upon emerging findings while paying attention to whether contradicting evidence can be found. In addition, template analysis provides a means to reach data saturation. In qualitative research, once research methods generate no new, additional and novel information, the researchers have reached saturation. We use template analysis to continue to collect data beyond saturation, in order to ensure the validity of findings. Finally, we use a qualitative research design instead of survey methods and existing scales as our aim is not to assess levels of anxiety in general and relate those to an outcome (success or failure). Instead, we are interested in anxiety insofar it is engendered by engaging in entrepreneurial activities, and then in particular its sources, immediate effects, and forms of coping when dealing with it. As our literature review reveals, we have little empirical research of anxiety in entrepreneurial settings, and there are no established measures available that would suit our purposes. Below the details of template analysis and the two waves are discussed in more detail.

First Wave Sampling, Data Collection and Analysis

We used theoretical sampling to include entrepreneurs who are currently and actively engaged in entrepreneurship, who founded their business within the last 12 months and responded that they had or were experiencing anxiety. In order to optimize external validity, we cast a wide net to understand the various sources of anxieties, coping responses and their interaction by developing a website as a point of contact for entrepreneurs ($N = 33$). We sought a wide-range of respondents (in terms of age, gender, and nationality) with ventures of varying characteristics [in terms of solo or team, the age of the venture, the subjective stage of development, full-time freelance or company, the size (number of employees) and sectors]. **Table 1** summarizes the characteristics of the entire sample.

Open-ended questions were used to investigate the entrepreneurs' various sources of anxiety, their immediate affective experience of anxiety, and their coping responses, with an average interview length of 90 min. We started out by asking broad, open-ended questions ("Tell me about your experiences with anxiety," "What do you think made you feel this way?", "How did you experience this anxiety and what effects did it have on you?", "How did you cope with this anxiety?"). We followed up by asking for examples and probing their responses further. Given the sensitivity of the topic, interviews were conducted face-to-face, which is preferable when discussing emotionally sensitive experiences because the interviewer can react to visible cues and comfort the interviewee. In order to minimize response bias, we ensured confidentiality, encouraged interviewees to talk openly and unrestrained without passing judgment and to choose their own words to tell their personal story.

The interviews were recorded, transcribed and coded using open and axial coding (Guest et al., 2012). In the first phase, any source of anxiety, subjective experience, or coping response was assigned a code (indicated as a comment on Microsoft Word) using an open-coding technique. First-order coding adhered closely to the respondents' vocabulary and terminology, and involved limited interpretation or evaluation. Each co-author independently created first-order codes corresponding to cause, effect and coping response type. A process of consensual coding

TABLE 1 | Descriptive sample statistics.

		First wave (N = 33)		Second wave (N = 44)		Total (N = 77)	
Variable	**Category**	***N***	**% of 33**	***N***	**% of 33**	***N***	**% of 77**
Gender	Male	22	67%	33	75%	55	71%
	Female	11	33%	11	25%	22	29%
Nationality	Dutch	20	61%	35	80%	55	71%
	Non-Dutch	13	39%	9	20%	22	29%
Freelancer	Yes	10	30%	13	30%	23	30%
	No	23	70%	31	70%	54	70%
Stage of development*	Nascent	10	30%	1	2%	11	14%
	Early growth	23	70%	8	18%	31	40%
	Established	0	0%	24	54%	24	31%
	Established + growth	0	0%	11	25%	11	14%
Sector*	Manufacturing	1	3%	1	2%	2	3%
	Retails	2	6%	11	25%	13	17%
	Business services	26	79%	18	41%	44	57%
	Consumer services	4	12%	14	32%	18	23%

	First wave (N = 33)			Second wave (N = 44)			Total (N = 77)		
Variable	***M***	***SD***	**Range**	***M***	***SD***	**Range**	***M***	***SD***	**Range**
Founder age*	31	8	23–59	39	12	20–62	35	11	20–62
Venture age* (months)	11	3	2–13	34	31	5–192	24	26	2–192
Employed (in fte's)	3	3	1–12	21	76	1–500	13	58	1–500

**Difference ($p < 0.05$) between wave 1 and wave 2.*

(Guest et al., 2012) was employed to resolve any disagreements about codes. Each time the coders reached a point where their coding did not agree, the reasons for the discrepancy were discussed, a solution was agreed on, and codes were revised if necessary. This process resulted in 274 (sources), 120 (subjective experience), and 319 (coping) first-order codes. Next, looking for repetition and commonality using axial coding, the first-order codes were grouped together in Microsoft Excel based on response type until a limited number of higher, second-order codes emerged—50 (sources), 20 (subjective experience), and 33 (coping). These codes were again grouped and labeled according to response type—10 (sources), 4 (subjective experience) and 8 (coping) to complete an initial template, which guided our next wave of data collection.

Second Wave Sampling, Data Collection and Analysis

In line with template analysis, we collected a second wave of data. Whereas the first wave helped us to exploratively derive categories of sources, subjective experience, and coping, the second wave was used to establish the prevalence rate of these categories. Moreover, we now sampled somewhat older firms, between 1 and 5 years old, so that we could track developments in anxiety sources, experiences and coping over a longer time period. Thus, using theoretical sampling (N = 44), we selected entrepreneurs who were currently and actively engaged in entrepreneurship, responded that they had or were experiencing anxiety and whose businesses were founded between 1 and 5 years ago. Again, we sought a wide variety of entrepreneurs in terms of personal and venture characteristics (see **Table 1**). Chi-square and t-tests showed that the two samples differed in the age of the entrepreneur, and the age and stage of development of the venture, which aligns with the different sampling criteria used for the two different waves. The second wave had a more representative distributions of sectors, as the aim of the second wave was to validate categories of anxiety sources, experiences, and coping responses, as well as their prevalence rates. Using our template from the first wave of data, we developed a structured interview protocol using two interviewing techniques—vignette (Jennings et al., 2015; van Gelderen, 2016) and graphic elicitation (Crilly et al., 2006; van Gelderen, 2016). These techniques also helped to minimize retrospective and response biases of open-ended interviews by anchoring and eliciting more detailed responses in relation to given scenarios.

Vignette Technique

The vignette technique elicits perceptions, opinions, beliefs, and attitudes from respondents as they comment on short stories depicting realistic scenarios, thus it allows us to establish prevalence rates. We created 10 hypothetical vignettes (see **Supplementary Appendix 1** for complete overview) corresponding to the 10 sources of anxiety derived from the initial template. Respondents were shown a vignette and then asked if they had experienced anything similar during their entrepreneurial experience. If a respondent had not experienced anything similar, then we moved on to the next vignette. If a respondent had experienced something similar, the respondent was encouraged to share examples and details from his or her own experience.

Graphic Elicitation Technique

Additionally, we followed up with a graphic elicitation interviewing technique to collect fine-grained data about their experience, specifically focusing on the coping mechanism(s) they used in response. In this technique, each vignette was accompanied by a graph in which time runs along the x-axis, starting with venture founding and ending with the present. The y-axis represents the level of anxiety, starting with a complete lack of anxiety (0) to fully experiencing this type of anxiety (+7). The respondent was asked to draw a line on the graph depicting the intensity of anxiety with regard to that specific vignette (source of anxiety). **Figure 1** below provides an example.

Importantly, this technique was not used deductively as a general measure respondents' experience and coping abilities with anxiety over time, but was rather used to elicit more fine-grained interview data. After participants drew a line, we pointed to different fluctuations in the line asking the respondent questions such as: "What factors explain any curves or changes in the line?", "When/under what conditions did this happen?", "How did you experience anxiety during this period?", "How did you cope with the anxiety?", "Were there any positive aspects to this experience of anxiety?", and further, probing questions.

Following the completion of each vignette and graphic elicitation techniques, we ended the interview session with an open-ended question asking if there were any sources of anxiety or coping responses from the entrepreneurs' experience that we had not covered. We, again, coded responses by response type, using consensual and hierarchical coding following the same procedure in the first wave. This led to 529 (sources), 211 (subjective experience), and 452 (coping) first-order codes, grouped into 59 (sources), 52 (subjective experience), and 46 (coping) second-order codes, respectively. Finally, the second-order codes were matched to themes (10 sources, 4 subjective experience and 4 coping) corresponding to the initial template or a modified template when necessary (coping codes were specifically narrowed to 4), and prevalence rates were calculated based on yes/no responses to vignettes (for sources).

FINDINGS

In this section, we provide an empirical and theoretical answer to the question how and why entrepreneurs experience and cope with anxiety during the entrepreneurship process in order to meet their goals and standards. To do so, we first report the sources of anxiety: those factors, situations and conditions that represent a threat to goals and standards. In the next sub section, we discuss the experience and immediate effects of anxiety. We then turn to specifying four categories of coping behaviors that entrepreneurs employ when experiencing anxiety, and their cyclical, iterative use. In the fourth and final sub section of this chapter, we discuss patterns in how anxiety develops over time. Altogether, the findings inform our conceptual model in the chapter 5.

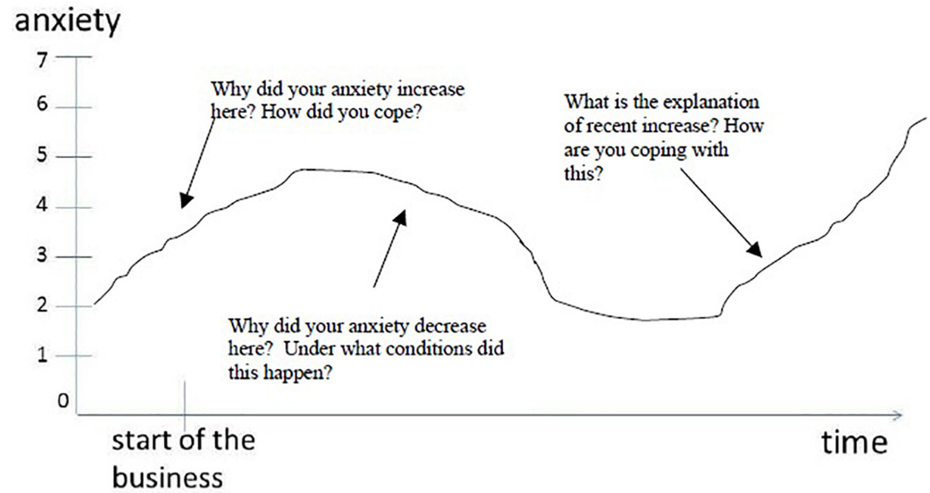

FIGURE 1 | Example of elicitation graph.

Goal-Striving and Sources of Anxiety

In **Tables 2**, **3** we report the higher-order sources of anxiety as revealed from our analysis. **Table 2** presents codes and themes, **Table 3** representative quotations. Overall, we find that anxiety is not only caused by immediate threats to a business' survival, as a strict focus on fear of failure would have implied. Sources of anxiety are related to various higher and lower-order personal and professional goals, standards and values. As such, sources of anxieties derive from multiple and simultaneous goals, and the goal of successfully starting a new venture is coupled with a range of values. Please note that goals have a hierarchical relationship to one another (e.g., high-order venture success versus sub-goals of pitching a venture idea) (Austin and Vancouver, 1996), with the salience and ordering of goals varying from person to person.

The Experience and Immediate Effects of Anxiety

It is important to first distinguish between how anxiety is experienced, in other words its affective tone (valence), and its effects (activation) (Foo et al., 2015). Out of the combined 92 first-order codes in the first and second waves of data, 83 (90%) pertain to the negative *experiences* of the cognitive, emotional and physical symptoms of anxiety (see **Table 4** for overview). While the subjective experience (valence) of anxiety is aversive, out of the 56 first-order codes pertaining to cognitive and behavioral activation because of anxiety, 42 (75%) refer to beneficial effects, such as being more adaptable, alert, aware, creative, active, driven, smarter, focused, reflective and bold. By contrast, only 25% of first-order codes concern instances in which the participants reported anxieties (temporarily) impaired their performance; for example, because of emotional exhaustion or decision paralysis. Accordingly, this suggests that anxieties often lead to enhanced cognitive capacities, which is in line with the findings of Cacciotti et al. (2016). Several respondents even stated that experiencing anxiety and feeling activated by it is the essence of being an entrepreneur.

Categories of Coping Responses

Our analysis inductively arrived at four categories of coping responses: directly influencing the situation at hand, changing the way the issue is perceived, adapting the goal or standard involved, or increasing coping options. In **Tables 5**, **6** we report the higher-order categories of coping and representative quotations. As these categories are relevant for every source of anxiety, we discuss coping responses in general, rather than in relation to each separate source of anxiety.

Category 1: Coping Responses That Directly Influence the Issue at Hand

The first category comprises coping responses that aim to eliminate the source of anxiety. Entrepreneurs cope by changing the actual situation so as to reduce the discrepancy between current situation and goals, standards, or value. This is regularly mentioned in a generic sense (solve issues, change approach, and increase effort) or in a specific reference to an aspect of the venture (reduce dependencies, cut costs, and improve the business model). For example, one participant said, "it annoys me sometimes that I am scared of things, then I push myself, just get over it, and do it. Even if I don't like it so much." As this example indicates, by stepping up performance, the entrepreneur addresses the issue at hand, and the anxiety which accompanies it reduces. The most often mentioned responses include seeking more information, making a plan and prioritizing efforts to eliminate the issue. For example, one participant stated, "when you make strategic decisions—you go left or right—it gets [your] faith up again and that's how you get rid of the anxiety. You are constantly going through barriers by making up creative solutions." Additionally, other individuals may be called on to help solve the issue at hand, such as the hiring of a lawyer in

TABLE 2 | Sources of anxiety – data structure (final template).

Response type	First order codes (examples)	Second order codes	Themes	Prevalence rate (only second wave)
Source of anxiety	Doubts gap between supply and demand; doubts about price and demand; doubt if concept will work/value; worries about business concept	Business concept; unclear problem; product failure	Business concept viability	45.5%
	Investing more for growth; new growth issues, space and collaborations; not growing fast enough; unsure about how to scale, go to next level; finding, pitching to investors; uncertain when to approach VC	Growth, investing more; growth, new issues; growth, speed of; growth, acquisition	Growth	47.7%
	Wanted to get a higher education; doubt if should have done traineeship; doubt decision about other job opportunities; not participating in other obligations; less time for other things, girlfriend; no time for friends; not enough time to pursue all interests	Threat to livelihood; return to wage employment	Opportunity costs	38.6%
	Doubt if working hard enough; doubting choices; not having the right skills; doubt capabilities to fix problem; Realizing not good at task; doubt negotiation abilities	Lack of experience and knowledge; self-doubt capabilities and effort	Capability	70.5%
	Dependence on one big client, no power; dependence on clients to pay on time; dependence on employees/interns; dependence, even though freelancer; getting steady supply, quality; dedication of collaborators; depending on partner to be accountant	Dependence on unreliable or few clients, supplier, partner, advertisers, and team	Dependence	75%
	Responsibility to co-founder; responsibility to pay salary, expectations; responsibility to other families; meet client expectations, responsible; responsibility to family, supporters	Responsibility toward client, supporters, team, and employees	Responsibility	52.3%
	Increased competition, uncertainty; worries about unknown, richer competitor; more experienced competition; doubt will compete with big companies; lack of fairness in market; inflation, currency, interest rates; worries about current politics	Competition; macroeconomic and political environment	Environmental uncertainty	59.1%
	Venture finances, not enough, too much; worries about case flow; worries about debt, restricting freedom; investment or paying rent; financial obligations, loan repayment	Finances, repaying loan; finances, cash flow; finances, debt	Finance	72.7%
	Being seen as arrogant, misperceptions; losses are public, perception of loss; deputation damage; loss of status; not being seen as professional; making things look better than they are; not being taken seriously, approval; what other people think and say; public presentation	Possible loss of status or reputation; image of self does not align with public image; exposure to public scrutiny	Social-appraisal	50%
	Not meeting high expectations of self; loss self-image of success; worries about self-esteem, personal failure	Loss of self-image as success; threat to social esteem	Self-appraisal	43.2%

light of a lawsuit. Yet another response is restraint coping, which is described an expectation of a change in the situation that drives waiting for the underlying issue to subside ("sometimes you cannot do more, you just have to wait").

Category 2: Coping Responses That Affect the Way the Issue Is Perceived

Coping responses that involve the subjective perception of the issue at hand, while leaving the environment and the goal unchanged, are outlined in the second category. The response with the highest frequency of occurrence in this category to adopt a long-term or broader view of situations. In the coping literature this is referred to as cognitive reappraisal, reframing or restructuring (Skinner et al., 2003; Gross, 2015). For example, when faced with the loss of a client, one participant mentioned, "I learned that I should be happy with myself and my accomplishments, independent of the results. I changed the image of myself and how others looked at me. I am now able to let it go." Entrepreneurs also described their attempts to transcend the effects of immediate stimuli by bringing their attention back to their overarching goals. The threats to goals and standards and the accompanying anxiety made entrepreneur more reflective and caused them to rethink situations. This response specifically leads to subsequent reappraisals that focus on the positive aspects of the threat and encourages a hopeful outlook about them: "[anxiety] makes you think, and re-think things. Looking from different angles at things is a very positive thing." Another coping response is to reframe threats through optimistic attribution. As one respondent explained, "The main feeling is that 'I'll figure something out.' That's why you become an entrepreneur—you believe that you can fix it." By being optimistic, goal achievement or standard maintenance is continuous to be seen as feasible. Anxiety can be further reduced by attributing threats to external and transient factors, rather than internal and stable ones.

Category 3: Coping Responses Involving the Goal

In addition to tackling the sources of anxiety and thinking about them in new ways, entrepreneurs may turn to adapting their goals to alleviate anxieties. Goals, standards, and reference values have various applications in coping responses as they provide opportunities to reduce the discrepancy between the current state and the ideal state of goal achievement. The threats to goals and standards and the accompanying anxiety made entrepreneur more reflective and caused them to rethink their goals in terms of scale, scope, object, and timing. Framing goals as learning goals rather than performance goals (Kaplan and Maehr, 2007)

TABLE 3 | Sources of anxiety.

Source of anxiety	Representative quotations
Business concept viability	"The worry about the business concept is: can you make yourself known enough so that you have a steady flow of work overtime? I think that is where my anxiety is." "It's always the same; fear. First fear for viability in general. Do I have a viable solution?"
Growth	"We spent 9 months in 2012 during the economic crisis persuading people to invest in us, this brings a very high anxiety level." "You get a pretty steep anxiety increase at the time that you have to think about scaling the business."
Opportunity costs	"It takes time I could have spent with my family. It takes time I could have spent with my friends of from my social life." "The business might not turn out to be as a success so, you put more time in it. But at the same time you cannot be the father you want to be."
Capability	"I had to tackle situations where I had not much experience with. It made doubt my capabilities." "Often I am in situations where I don't have enough knowledge of, or don't have the right capabilities." "Being an entrepreneur is a constant internal discussion with regards to am I doing the right thing? Shall I invest, or not?"
Dependence	"I have to trust in [employee], that he does his work properly. The decrease of control increases as your company grows, and that brings anxiety." "We are only with a few people, and I worry that then if one leaves it is more a problem."
Responsibility	"People are actually dependent on me doing those tasks within a certain period of time. I try to get them as soon as possible, but if they are big tasks that can make me really anxious." "In my head, I totally freaked out. . .we worked very hard and in the end we need to tell our client the big disappointment that their event is not happening. It was not our company, it was about disappointing our client."
Environmental uncertainty	"The main anxiety and concern is when I have a new competitor, who will change the rules in the market. Then, I have to adapt myself while I don't know exactly what is going to happen in the long term." "2008 was the best year until then, and then the crisis hit. People stopped buying products. It is unpredictable."
Finance	"It is not being anxious that what I am doing is not going to work, but it is going to enough money that I can live on it." "Worries about money and if it doesn't come in, what then? What happens, how do I pay the bills?"
Social appraisal	"There is an anxiety of how others expected me to perform. No matter what I achieve, there is always another higher expectation." "The fact is that I had the feeling that I couldn't meet the expectations other people had of me."
Self-appraisal	"I think in the end it is about yourself, because it is never good enough in your own eyes." "Last week I had 3 offers declined on 1 day. That was hard. It felt as a disappointment to myself. If the business would fail, that would be a personal failure."

TABLE 4 | Immediate effects of anxiety – data structure (final template).

Response type	First order codes (examples)	Second order codes	Themes	Prevalence rate (only 2nd wave)
Valence and activation of anxiety	Alertness; fun; independence; joy, when overcome; aware; self-knowledge; work smarter;	Activating, alert, and stimulating effect	Positive cognitive effects	89%
	Innovative; adaptable; activated; creative; work harder	Proactive, innovative and adaptable	Positive behavioral effects	51%
	Being stabbed; bubbles up in belly; orange in stomach; weakness in legs; drinking alcohol; eating poor food; feel terrible, sick, headache; sleeplessness, tired	Negative effects on body; unhelpful behaviors	Negative physical experience of anxiety	35%
	Blameworthy; swearing; negative circular thoughts; panic; debilitating; overwhelmed; disappointment; loneliness; irritable; helplessness; impatience; loss of passion; aggressiveness; dejection; escalations in private life	Negative thoughts; negative emotions; loss of positive outlook	Negative cognitive and emotional experience of anxiety	68%

is the most commonly reported response to reducing anxieties. One respondent explained, "If [the company fails], I would not consider that a failure. I would look back at it as a big learning experience where I tried something that had been on my mind, I did it, it worked out differently than I had expected, but I tried it. And I didn't let it go." The difference between learning and performance goals lies in the role ascribed to failure: failure makes it more difficult to reach a performance goal, but can actually enhance learning (Sitkin, 1992; Cope and Watts, 2000). Thus, a new learning goal is a sub-goal that could alleviate anxieties and enable the achievement of overall performance goals. Another strategy to reduce anxiety occurs if larger goals are broken down into these sub-goals that add lower layers to the goal hierarchy (Austin and Vancouver, 1996), which makes it clear on a more detailed level what is needed to reach the goal and can even highlight alternative ways to reach it. A third coping response in this category is to scale back goals in order to reduce anxieties. Goals can be scaled back in various ways, including time (taking longer to reach a goal), resources (starting with less resources than hoped for), and geography (a reduced geographical market area).

Category 4: Coping Responses That Serve to Increase Coping Options

The group of responses in this category is of particular importance as these were the responses entrepreneurs would turn to if they did not yet feel capable to solve the situation (cat.1), or reassess their assessment (cat.2), or their goals (cat.3). They

TABLE 5 | Coping response categories – data structure (final template).

Response type	First order codes (examples)	Second order codes	Themes	Prevalence rate (only 2nd wave)
Coping with anxiety	Obtain information; improve aspects of venture; solve issues; discuss issues; plan, prioritize; change approach; increase effort; delay action; seek help	Planning; obtain information; increase effort; seek help	Directly influence the issue at hand	86.3%
	Invoke wider, long-term view; focus on positive aspects; manage perception of others; acceptance; pretend it is not there/denial; attribute to unstable or external cause; avoid negative comparisons	Optimism; long-term view; acceptance	Influence perceptions	75%
	Frame as learning goal; create sub-goals, intermediate goals; seek challenge; scale back goals; flexible goals; give up	Learning goal; create new (sub) goals; scale back goals	Involve the goal	54.5%
	Distraction and relaxation; meditation; seek social support; distancing (various forms); take time to reflect; increase long-term professional capability; self-affirmation; live healthier; turn to religion	Distance and relaxation; social support; physical health and personal well-being	Increase coping ability	70.5%

TABLE 6 | Categories of coping responses.

Categories	Representative quotations
Cat. 1 Directly influencing the issue at hand	"If it is something that I can actually solve and think it is nice to solve, but I still have to think of ways, it just sticks with me until I solve it and that tends to be the middle of the night." "I stayed in that situation for a while of going in that spiral of what to do and what to do. Then I put on the action mode and actually did things to solve the problem." "I was concentrated to solve the problem as soon as possible. I tried to do everything that was in my power, maybe even a bit more." "At some point, you have to decide on something that is going to stay stable otherwise you go crazy. That also gives you feeling of confidence and security." "Start to try find people when you find someone, he solves your problem and [anxiety] goes back to the level that you don't realize it."
Cat. 2 Influence perceptions	"It takes a different mindset, but knowing that you expect the worst, you operate from that." "Sometimes it helps to think about the worst that can happen. Okay, I lose my house, I lose everything, but, well, it sounds stupid, but it is still not the end of the world." "If my project fails, my project fails, not that I fail. I'm of course emotionally bound to it, it is my baby to some extent, but if it fails, it fails and I still continue and I'm still myself." "On a moment of doubt, you might only see the barriers on the road, and things get very negative. It is good to be very clear about the dangers and the negative sides, but also to see what you have achieved."
Cat. 3 Involve the goal	"You should fail, because then you learn. That is the whole idea of being an entrepreneur." "For me the only way to cope with it is by setting milestones. Saying, 'if we don't reach this barrier, we are going to stop."' "I look back at [project] as a big learning experience where I tried something that has been in my mind, I did it, it worked out differently than I had expected but I tried it." "I've become much more realistic and I'm way more healthy about what success is about and that it's not only about achieving the end goal or the intermediate goal but it's also about how you do it, what is reasonable after a certain moment of time."
Cat. 4 Increase coping ability	"For me, the more space I give myself, the quicker I get better and get more space in my head to figure something out." "It is bringing in the balance. So, I make sure I do spend enough time with my family. But also religion. You make sure you have enough counterweight so the worries don't go off the charts." "I just sit down and try to relax, think about nothing and do nothing." "You discuss the doubts you have. You need other people around you. You need to express yourself. If you just keep your thoughts to yourself, you will start thinking in circles."

would first need to work on their ability to do so. These responses should not be classified as avoidance coping, because the goal of these responses is eventually to be able to provide a cat.1, 2, or 3 response. For example, entrepreneurs who feel exhausted from anxiety may seek out ways to recharge, such as through sleep, social activities or exercise. Baumeister et al. (2006) discuss self-regulatory strength as a resource that becomes depleted after each use. After some form of relaxation or distraction self-regulatory strength is replenished and the entrepreneur may feel more able to directly target the source of their anxiety or to take a different perspective on the situation or on the goals that he or she is aiming to achieve. However, while distraction and relaxation are the most mentioned coping responses and can be an effective strategy, respondents pointed out the possible downside of them becoming habit-forming and harmful (i.e., continued elevated use of drugs and alcohol). Another response that can help entrepreneurs regain self-regulatory strength is seeking social support. This can take various forms, such moral support from a trusted mentor or partner, and can help boost or regain confidence. For example, one participant said, "I talk to my boyfriend; he is also an entrepreneur. He also understands a lot of what I have been going through. I talk to him and he calms me down." In chapter 5, drawing on control theory and appraisal theory, we will connect the four different coping response categories outlined in this Section "Categories of Coping Responses," by mapping them onto the goal striving cycle.

Anxiety Dynamics

The graphic elicitation technique asked respondents in the second wave to track their anxiety levels with regard to each source from the pre-startup phase up to the present moment. We find that sources of anxiety need to be regarded in both a short and a long-term time frame. In terms of anxiety levels, we observed a large amount of variation *between* the different higher-level sources of anxiety, as well as *within* each source of anxiety. Levels of anxiety changed over time in a variety of patterns. Anxiety, for instance, was reported to be gradually increasing or decreasing, highly fluctuating, staying at even high or low levels, or fluctuating around even levels. Nevertheless, we were able to discern three main patterns from the inductive coding. First, fluctuations (sharp increase followed by decrease) typically occurred around significant short-term events (e.g., worries about business concept viability just before product or service launch). Second, longer-term gradual decreases were largely considered to be a function of experience, defined as a gradual improvement in coping responses and, as a consequence, reduced appraisals of threat. For example, worries about capability tended to dissipate with time as entrepreneurs report that they gained experience in coping with anxiety-provoking situations. Third, longer-term gradual increases in different sources of anxiety were related to growth of the venture. For these entrepreneurs, anxiety was low in the early startup phase, but increasing resource needs of the venture was accompanied with increasing anxiety (e.g., new dependence worries by hiring more employees or needing another round of investment). In the next section, we present our dynamic model of anxiety and coping in entrepreneurship that explains our findings.

A DYNAMIC MODEL OF ENTREPRENEURIAL ANXIETY AND COPING

The findings up to this point detail the various goal-related anxieties and coping responses of entrepreneurs that emerged inductively from our template analyses. Drawing on our temporal-oriented data acquired using the graphical elicitation technique, we present a conceptual model of anxiety and coping in entrepreneurship in **Figure 2**. Specifically, our model, which integrates control (Carver and Scheier, 1981) and appraisal theory (Lazarus, 1966), considers the emergence of, and coping with anxiety as an inherent part of the goal-striving cycle. Respondents use multiple responses in multiple categories going through the cycle various times, particularly when aiming to arrive at structural longer-term solutions with regard to sources of anxiety.

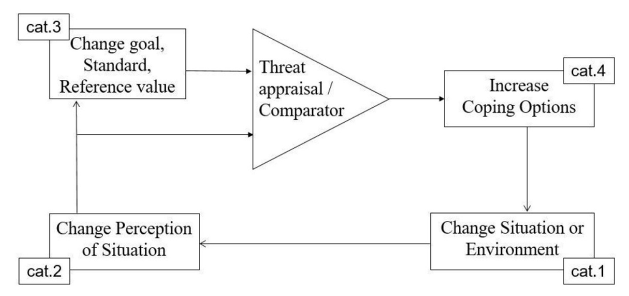

FIGURE 2 | Anxiety and coping in the entrepreneurial goal-striving cycle.

Control theory (Carver and Scheier, 1981, 1998) and appraisal theory (Lazarus, 1966, 1999; Lazarus and Folkman, 1984) argue that people continually face negative emotions as a result of threats to goals, and as such, they inform us as to how anxieties may be dealt with in entrepreneurial situations. The core idea of control theory is that self-regulation of behavior is enabled through a negative feedback cycle (Carver and Scheier, 1981; Vancouver and Day, 2005), which consists of recurrent comparisons between current situation and goals. Anxiety and coping are endogenous to the goal-striving cycle. The cycle begins with changes to the entrepreneurs' situation (e.g., entrance of a competitor, need for more financial resources, a customer who cancels an order), followed by an entrepreneur's perception of this changed situation. Perceptions are followed by an assessment of whether it affects the overall achievement of various goals and standards. This assessment, known as "comparator" in control theory (Carver and Scheier, 1998), or "primary appraisal" in appraisal theory (Lazarus, 1999), requires an appraisal of the threat, harm or challenge. If the new situation is seen as a threat to the goal hierarchy of the entrepreneur, s(he) assesses the available options of dealing with this issue, a process called "secondary appraisal" in appraisal theory. If no final solutions are immediately and easily available, this discrepancy will manifest itself as anxiety. The entrepreneur may then enact any of the responses in the coping categories outlined in the previous section (the boxes in **Figure 2**) with the aim to reduce the situation-goal discrepancy that gives rise to anxiety. Following enactment of coping responses, the cycle continues by entrepreneur's new comparison (comparator) of the current and the desired state. If this renewed assessment concludes that no threat to goals exists, anxiety dissipates concomitantly. If not, then anxiety persists and again coping responses from any categories may be enacted, again feeding back into another round of appraisals. The same cyclical process applies also if the source of anxiety concerns a maintenance goal (or anti-goal, in control theory terms), such as maintaining a certain level of self-esteem. The difference is that the goal striving cycle is now discrepancy-enlarging rather than reducing, as one tries to steer away from the anti-goal (in this case, low self-esteem).

Illustrative Case Examples

To illustrate our conceptual model, we provide two case examples of entrepreneurs from the sample; an inexperienced entrepreneur from wave 1 of our research design, and an experienced entrepreneur from wave 2.

Inexperienced Entrepreneur

Mark is a young co-founder of a new software company working to complete and test a "minimum viable product" (online platform) as soon as possible. One day, Mark unexpectedly finds another entrepreneur who, only days before, launched an online platform very similar to his and whom he had no idea existed previously. To appraise the situation, Mark immediately went to the competitor's website, made a profile and tested its functionality. Ultimately, he determined it was a high-quality platform, which he described, "[Made me feel] really discouraged and my motivation went down…you have a pressure in your head." Mark explained that he felt anxiety due to an inability to easily change the situation, a sense of not completing the "minimum viable product" task quickly enough (threat to concept viability), and feeling responsible for the wellbeing of his team.

Over the course of a month, Mark tried a number of different coping responses. First, he attempted to change his perception of the situation [cat. 2] by revisiting the competitor's website "to find the bright side" a few days later. This led him to believe that the competitor's platform was "completely unintuitive…I saw I could beat them. Also, if [it] works successfully, I [can] see that the market needs [my product] and the concept can be successful." While this helped to reduce discrepancy, thus reducing anxiety, he continued to think, "everything went through my mind: 'What should we do?', 'Is my crew in danger?', 'Should I have predicted it?'" Mark then turned his attention to a start-up festival he had committed to organizing, which required dropping two courses at university and putting in no work toward the venture for 2 weeks. This distraction from the situation [cat. 4] reduced his anxiety temporarily; however, it only increased the worry that he was letting his team down. As he explained, "You are the founder of the start-up. So, you should be the person that works the most. But you don't want to lie to them and say that you did something in that period." Following the start-up festival, Mark met with the team and developed a new learning goal [cat. 3], agreeing that "it's only [our] first start-up, you learn a lot from it. Everything is a huge experience and you learn a lot and it is a great reference for you that you had a startup." Finally, Mark took action targeted at the environment [cat. 1] by: formally registering the business with the Chamber of Commerce, which made the venture "feel more tangible, now it feels like it can work, more real"; opening up to employees to ask their opinion on what they thought they should do; and making a strategic plan. These responses changed the subsequent appraisal of possible threats to the goals of the venture, which helped Mark reduce his anxiety levels and increase his motivation and effort in the further development of the product and business.

Experienced Entrepreneur

Francesca is a 53-year-old serial entrepreneur who co-founded a growing, 4-year-old business-consulting venture. The company's founders decided that to grow they needed considerable financial investment and, in order to stay independent from external parties, the entrepreneurs decided to invest a large portion of their personal savings to finance the expansion. One day, Francesca was helping to register for a trademark, something she had little experience doing, when she received an email from another company's lawyer requiring an immediate response. If Francesca failed to reply in 4 h, a team of lawyers would file a lawsuit. Francesca, whose co-founders were both away on vacation at the time said, "I did not understand it or the context; it was in English, it was difficult, it was a world that I did not understand and [I was] alone." Francesca explained that she worried not only about her inability to complete the task, but also that the likely expensive litigation would result in compromising the overarching goal of the business succeeding, as well as the anti-goals of avoiding losing her personal and colleagues' financial investment. In response to this anxiety, she took immediate action by seeking help [cat. 1] from a consultant to navigate a reply. She explained that she learned through her experience that "it is wise to understand, as an entrepreneur, you cannot do everything and that sometimes you just need a consultant." Francesca explained that she also managed this, and other episodes of anxiety, by constantly maintaining her coping ability [cat. 4], describing how, "in the beginning, anxiety just happens to you, but later in your life you are more aware [of it]…and I personally build (counteracting habits) into my daily routine." Francesca further said, "I go to bed early and eat healthier and do not drink alcohol and get up later and play more sports and collect people around me." She also constantly manages her perceptions [cat. 2] as a way to limit anxieties before and after they arise. She primarily does this by keeping a diary, which, as she described, helps "you see how over the years a problem that, 10 years ago, made you lose sleep is actually nothing…writing history [allows you to] look back and reflect and learn from your brilliant failures. It also gets your worries out of your head and move it to your paper and recognize it." Using these coping responses, Francesca was able to successfully avoid litigation, reduce her anxiety and harness its positive cognitive and behavioral effects.

DISCUSSION

In this study, we investigated the dynamics of anxiety and coping during the entrepreneurship process. We will now first discuss how our empirical and conceptual work contributes to the entrepreneurship literature on negative emotions and emotional self-regulation.

Contributions and Integration

A first contribution is to expand theories of entrepreneurial anxiety and coping by grounding them in goal-striving behavior (Carver and Scheier, 1981, 1998; Lazarus, 1999; Skinner et al., 2003; Gross, 2015). Existing entrepreneurship research conceives of fear and anxiety as arising from subjective perceptions of environmental stimuli (Cacciotti et al., 2016), but do so without formalizing the role of goals and standards. Furthermore, the fear of failure literature implicitly assumes that business survival is assumed to be the only goal (Patzelt and Shepherd, 2011; Jenkins et al., 2014; Cacciotti and Hayton, 2015). Our study reveals that anxieties are intimately related to a range of goals and standards, the importance and order of which varies from person to person. These goals may or may not be explicit motives to start and operate an venture, but are nevertheless implicated [see Kehr's (2004) distinction between explicit and implicit motives]. Anxiety emerges not merely through the perceptions of situations, but through appraisals of threats to goals and options available of dealing with threats. Our model expands upon previous studies by demonstrating that anxiety is situated within the goal-striving cycle.

A second contribution of our study is to provide a better understanding of the role of coping behaviors. We reveal and explain a wider range of previously unaccounted for coping responses. Moreover, we posit that the four coping categories revealed here specifically pertain to four points in an iterative goal-striving cycle. Consequently, our model goes significantly beyond static and binary conceptions of coping responses in entrepreneurship research, such as problem/emotion and approach/avoidance, which have been found inadequate in explaining higher-order coping responses (Lazarus, 1999; Skinner et al., 2003; Gross, 2015). For example, emotion-based coping should not be restricted to distraction or delaying (items we refer to as belonging to cat. 4), as argued by Patzelt and Shepherd (2011) and Uy et al. (2013), as other coping response categories also involve the regulation of emotion to influence the environment or change perceptions or goals (Gross, 2015). From the perspective of achieving goals and maintaining standards, all coping responses can potentially be both problem and emotion-focused, which explains the findings of Patzelt and Shepherd (2011) that the self-employed use both, and of Byrne and Shepherd (2015) that both are helpful in emotional regulation.

Furthermore, avoidance coping can help to solve problems; in fact, it is often intended to do just that. It is common that individuals temporarily district themselves from a situation so as to address it refreshed later on. Comparable to the finding by Folkman and Lazarus (1980), who found that people use both approach and avoidance coping in 98% of 1300 stressful episodes, the entrepreneurs in our sample also use both (if we assume coping responses pertaining to category 4 to be considered avoidance responses). Our study shows that category 4 responses are not simply about avoiding taking action, but rather explicitly intended to help facilitate category 1, 2, and 3 responses by gaining strength and reconsidering options. Conceiving of category 4 responses as being part of the goal-striving cycle, instead of existing in isolation, helps explain the findings of Uy et al. (2013) that entrepreneurs oscillate between and use both avoidance and approach coping, as well as the finding of Shepherd et al. (2009b) that entrepreneurs postpone quitting their venture until they are ready to quit (give up on the goal) (see also Rouse, 2016). That cat. 4 responses help individuals to gain or regain the strength to deal with the anxiety and its source helps to explain the finding by Uy et al. (2013) that avoidance coping has to be combined with active coping; cat. 4 responses by themselves do not close the gap but facilitate responses in the other categories which do.

More generally, our model and findings reinforce the point made by Uy et al. (2013) and Byrne and Shepherd (2015), as well as coping experts such as Skinner et al. (2003) and Folkman and Moskowitz (2004), that different coping responses are not inherently better or worse. The ways that individuals cope are assembled based on the specific situational demands and constraints, goal hierarchy and individual subjective preferences involved. Thus, any method of coping can be locally adaptive. This still leaves open the possibility that a particular coping response can prove ineffective in the long run, but this applies equally to what may be labeled as emotion or avoidance focused (e.g., cat. 4 response of habitually drinking alcohol) or problem and approach focused (e.g., cat. 1 response of bullying those perceived to be involved in creating the obstacle). Neither do we subscribe to the prescription for entrepreneurs to stay calm at all times, as He et al. (2018) maintain. For example, occasionally venting one's emotions may very well help to solve issues as well as regulate emotions. Whether a coping response is effective, ultimately depends on whether it contributes to closing the goal-situation discrepancy.

A third contribution of our study is to go beyond fear of failure. Contrary to what one would expect based on fear of failure research, respondents talked in-depth about anxiety using the terms 'doubt' and 'worry' interchangeably, but seldom referred to 'fear,' 'scared,' or 'afraid' explicitly (in fact, several respondents strongly argued they were not afraid). Anxieties can concern immediate threats to business survival, similar to fear of failure, but also includes more opaque and lingering worries and doubts about making the right career choice, being a responsible person, maintaining or increasing self-esteem and reputation in the eyes of others, among others. The entrepreneurs in our study also indicated anxiety inducing emotions (e.g., frustration, anger, and loneliness) without stating they were fearful of outcomes (cf, Cope, 2011).

A fourth contribution of our study is to highlight the immediate beneficial activating effects of anxiety, as brought up by the majority of entrepreneurs interviewed (75%). This finding provides support for the position that, at least for active entrepreneurs, negative affect predominantly has positive direct effects on behavior and cognitive functioning. This is in line with the conceptual arguments of Cacciotti and Hayton (2015), as well as the empirical findings of Foo et al. (2009), Jennings et al. (2015), and Cacciotti et al. (2016). However, it contrasts with the findings of Doern and Goss (2014), Morgan and Sisak (2016), and the position of Shepherd (2015), who argues that a negative spiral effect beginning with a lack of progress generates negative emotions that again obstructs progress and so on. It is also in contrast with the findings of Kollmann et al. (2017), who report that obstacles provoke fear of failure, which elicits withdrawal and avoidance. Our explanation is that research participants uncommitted to the hypothetical lab situation in the study of Kollmann et al. (2017) may indeed quickly withdraw, whereas those in the field, who are committed to their ventures, will strive to persist. The majority of our respondents argued that anxieties actually enhanced their behavioral and cognitive functioning. In sum, for the entrepreneurs in our sample, threats resulted in efforts to reduce anxiety by striving to close discrepancies and achieve goals and standards, rather than giving up. Obviously, our sample is subject to survival bias, and the picture may well change if entrepreneurs who quit their venture are studied.

Finally, we find some evidence that entrepreneurs learn over time about the effectiveness of various responses in the four coping categories when repeatedly encountering the same source of anxiety. This reinforces the findings by Shepherd et al. (2011), Uy et al. (2013), Jenkins et al. (2014), and Cacciotti et al. (2016). For example, Uy et al. (2013) finding that experienced entrepreneurs make more effective use of avoidance strategies suggests that those entrepreneurs have learned to make more effective use of cat. 4 coping responses. Repeated successful efforts to cope with anxiety may build up resilience, or what Shepherd et al. (2009a) refer to as coping self-efficacy. Our respondents report that novel and immediate experiences regularly increase levels of anxiety. E.g., worries about capabilities or reliance may appear remote until a novel situation makes their anxiety inducing nature highly salient. Once the obstacle has been overcome, by use of any of the responses in the four categories, experience makes it easier deal with the anxiety when a similar situation resurfaces, or even prevents anxiety from arising. The latter effect provides an alternative explanation of Patzelt and Shepherd (2011) finding that the self-employed experience fewer emotions, which they attribute to a selection effect, but which can also be an effect of experience and learning.

Limitations and Future Research

Our inductively derived conceptual understanding of anxiety and coping provides a basis for future research that can hopefully address the limitations to our study. First, our theoretical sampling method consists of selecting young, but surviving firms and thus, is open to survival bias. Given that many or most startups fail in the first five business years, many entrepreneurs in our sample will also fail. Therefore, our study reflects anxieties and coping behaviors of a mixture of entrepreneurs who will eventually succeed or fail. Having said that, we make no claims about the effectiveness of any one coping response for business survival and performance, as we do not track entrepreneurs over a long time period, thus are unable to make explicit comparisons among entrepreneurs who persist versus exit. Future studies will make progress by including recently failed ventures and looking for differences in responses about the motivational effects of anxiety and execution of coping responses. Moreover, we did not study decisions to persevere or to quit, like Kollmann et al. (2017). Coping strategies can also be seen as perseverance strategies as they allow entrepreneurs to persist with the venture (van Gelderen, 2012). Future research can look at selected cases to explore the configuration and sequence of coping responses in regard to decisions to halt or continue operations. Furthermore, future research seeking to develop measures of sources, immediate effects and coping responses pertaining to entrepreneurial anxiety may use our study to develop their initial item pool in efforts to increase generalizability and predictive statistical power.

Second, future studies may make headway exploring and explaining the configurations and sequences of coping responses to shine light on business survival during the entrepreneurial journey. As we have argued, the nature of anxiety and coping responses are subject to the goal hierarchy being pursued, which varies person to person. We have asked our respondents to take a helicopter view, particularly in wave 2, reflecting on how coping and anxiety develops over a long time period. To further justify our model, future research may also explore experience sampling methodologies (ESM), which require participants to provide reports of their thoughts, feelings, and behaviors associated with anxiety and coping at multiple times across situations as they happen in the field (Uy et al., 2010).

Third, future research may investigate the moderating role of personality attributes such as positive dispositional affect, which has been suggested to improve one's ability to deal with anxiety (Baron, 2008; Baron et al., 2012; Podoynitsyna et al., 2012). Dispositional variables may influence the type of responses in the four coping categories adopted through either configuration and/or sequence. Studying personality attributes may also be relevant for future research looking at those who deliberately seek out anxiety. Future research may aim to provide a theoretical account for the behavioral, cognitive, motivational and emotional features of this group compared to those not actively seeking out anxiety. This is also linked to industry or sector; some industries are more uncertain and dynamic than others in which entrepreneurs require more resilience in order to succeed.

Fourthly, we studied how entrepreneurs respond to anxiety, and future research can study how entrepreneurs prevent anxiety from becoming overwhelming or from occurring at all. Research on resilience (Chadwick and Raver, 2018) and preventive coping (Reuter and Schwarzer, 2015), which concern the build-up of resources to deal with failure that may or may not occur in the future, may provide guidance here. One example of such a strategy is provided by Engel et al. (2019), who found that engagement in loving kindness meditation mitigates levels of fear of failure when confronted with a hypothetical aversive business situation. Another example is defensive pessimism (Norem, 2008): a combined strategy of setting low expectations (being pessimistic) and taking pre-emptive preventative steps with regard to the things that might go wrong as one prepares for an upcoming situation or task.

Finally, future research of particular interest is the study of serial/portfolio entrepreneurs in relation to various sources of anxiety. Jenkins et al. (2014) found that serial/portfolio entrepreneurs experience less grief, because autonomy, self-esteem and finances are still provided by concurrent or future businesses. In the context of our model, it means that a goal-involving response [cat. 3] of quitting does not result in termination of the goal-striving cycle, since this decision has to be seen in the wider context of the totality of goals involved. Future research can use the model presented in this article to study how entrepreneurs cope with anxiety while running single, as well as multiple business ventures.

Practical Implications

Our study has practical implications for both aspiring and experienced entrepreneurs. Our study develops an awareness of the persistence of anxieties throughout the entrepreneurial journey. Anxiety does not just relate to business success/failure. Instead, the pursuit of entrepreneurial goals coincides with potential threats to a variety of goals, values, and standards. At the same time, our study shows that four different and interrelated categories of coping can be concurrently deployed to translate negative experiences into positive cognitive and behavioral effects, and that any response can be potentially effective. Nevertheless, since the entrepreneurial journey is dynamic and evolving, various anxieties will have more salience at different times, which implies a constant reconfiguration and maintenance of coping responses. As a result, continually building resilience to various and changing anxieties may be essentially what it means to be an entrepreneur.

CONCLUSION

Organizational psychologists have an interest in entrepreneurship as it provides unique insight into human cognition and behavior under trying conditions (Baum et al., 2007). We used open-ended, vignette and graphical elicitation interviews with 77 entrepreneurs to investigate the nature, origins, and dynamics of anxiety and coping during the entrepreneurship process. We revealed ten sources, four categories of immediate effects, and four categories of coping responses of entrepreneurs. This then led to the development of a dynamic and comprehensive goal-oriented model of anxiety and coping. By doing so, we shed light on a range of the entrepreneurship literature on the self-regulation of negative emotions and open up a series of questions for future psychological research on the "emotional rollercoaster" of founding new organizations.

DATA AVAILABILITY STATEMENT

The datasets for this article are not publicly available to protect the privacy of the participants. Anonymized data are available on request to the corresponding author.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements. The participants provided their informed consent to participate in this study, in verbal and/or written form.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00398/full#supplementary-material

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The Relation Between Health and Earnings in Self-Employment

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Multiple studies have shown that, on average, the self-employed are healthier than wage workers. The link between the health of self-employed individuals and their financial performance in terms of earnings is, however, less understood. Based on human capital theory, we expect a positive link between health and earnings among the self-employed. For two reasons we expect the relationship between health and earnings to be stronger for the self-employed than for wage workers. First, the self-employed can more easily adapt their production activities such that they yield the highest returns to their human capital, including their health. Second, in the short term, the earnings of the self-employed are more dependent on the ability to work than the wages of wage workers. Our empirical analysis draws on data from the Household, Income and Labor Dynamics in Australia (HILDA) survey, a longitudinal dataset (2001–2017). Our outcome variable is an individual's total income derived from wage work and/or running a business. Health is measured using multi-item constructs for *General health*, *Physical health*, and *Mental health* from the Short Form Health Survey (SF-36). We distinguish between wage workers and self-employed individuals with and without employees. Fixed-effects regressions reveal a significant positive relationship between health and earnings in self-employment as well as in wage work. As expected, this relationship is significantly stronger in self-employment than in wage work (for *General health* and *Physical health*, but not for *Mental health*). The latter result holds particularly for self-employment without employees. We provide evidence that the higher returns can be partly explained by the fact that the earnings in self-employment are more dependent on the ability to work (as proxied by the number of working hours) than earnings in wage work. We also find a negative relationship between health and job termination. Again, this relationship is stronger for the self-employed (without employees) than for wage workers (for *General health* and *Mental health*, but not for *Physical health*).

Keywords: earnings, health, HILDA data, human capital, self-employment

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INTRODUCTION

The self-employed represent a considerable portion of the labor force in developed countries. By setting up and running businesses, the self-employed contribute to the creation of employment for their own and for others (Van Praag and Versloot, 2007; De Wit and De Kok, 2014). Hence, governments recognize self-employment as pivotal for achieving growth (Audretsch and Keilbach, 2004; Carree and Thurik, 2010; Koellinger and Thurik, 2012), and therefore they actively support self-employment (European Commission, 2020). The occupational notion of self-employment stresses that self-employed individuals own and manage their business for their own account and risk (Wennekers and Thurik, 1999). In doing so, they can set up their production activities such that they yield the highest returns to their assets, including their human capital (Van Praag et al., 2013; Hessels et al., 2020). Indeed, there have been many studies investigating the returns to self-employment in terms of earnings (Hamilton, 2000; Sorgner et al., 2017). The present study analyses the relationship between a specific dimension of human capital – an individual's health status – and earnings.

An increasing number of studies stresses the importance of health for self-employment. This is because the self-employed work in a complex and uncertain environment, work long hours, and have to perform a wide range of tasks (Hessels et al., 2018). Good health is important to deal with the challenges and difficulties that come with running a business (Gielnik et al., 2012; Hessels et al., 2018). Early studies found ambiguous associations between health and self-employment (Quinn, 1980; Fredland and Little, 1981; Curran and Burrows, 1989; Parker, 2004), but more recent studies generally report a positive association between self-employment (versus wage work) and health (Tetrick et al., 2000; Bradley and Roberts, 2004; Stephan and Roesler, 2010; Castellano and Punzo, 2013; Castellano et al., 2016; Toivanen et al., 2019). Although switching to self-employment out of unemployment and wage work may have a short-term positive effect on health (Nikolova, 2019), the selection of healthy individuals into self-employment seems to prevail such contextual effects in explaining the positive relation between self-employment and health (Yoon and Bernell, 2013; Rietveld et al., 2015). The reason is that in self-employment, there are not only factors that contribute positively to health but also factors that may affect health adversely (Torrès, 2012; Torrès and Thurik, 2019), such as the inherent risky nature of self-employment and its associated uncertainties (Buttner, 1992; Dahl, 2011).

In addition to research on possible health differences between the self-employed and wage workers, recent studies have started to focus on the relationship between health and financial performance in self-employment (Hatak and Zhou, 2019), usually measured in terms of earnings (Parker, 2018). However, the exact relationship between health and performance in self-employment has remained largely unidentified. Specifically, it is not clear from previous research whether and why the health–earnings relationship is different for individuals in self-employment and individuals in wage work. In the present study, we provide a theoretical explanation for why we can expect a stronger relationship between health and earnings in self-employment as compared to wage work and we perform a direct empirical test of this prediction.

The theoretical explanation we put forward in this study originates from human capital theory. Human capital is the set of skills, knowledge, and social and personality attributes that constitute the ability to perform labor and to produce economic value. Prior self-employment studies suggest that human capital in terms of cognitive ability (Hartog et al., 2010) and formal education (Robinson and Sexton, 1994; Van Praag et al., 2013; Hessels et al., 2020) results in comparatively high returns in terms of earnings in self-employment relative to wage work. The relation between earnings and health, as another important element of human capital (Becker, 1962; Hatak and Zhou, 2019), has so far received little attention in the self-employment literature (Rietveld et al., 2016; Hatak and Zhou, 2019). In line with human capital theory, we expect a positive relationship between health and earnings, not only for wage workers (Pelkowski and Berger, 2004), but also for the self-employed. Moreover, we expect that the positive relationship between health and earnings is stronger for the self-employed than for wage workers. First of all, earlier studies stress that the self-employed can adapt their production activities more easily than wage workers such that they yield the highest returns to their assets (Van Praag et al., 2013; Hatak and Zhou, 2019). Second, the earnings in self-employment, at least in the short run, are more dependent on the ability to work than the wages of wage workers (Rietveld et al., 2015). We therefore expect that good health boosts earnings in self-employment more than earnings in wage work, but that ill health reduces earnings more drastically in self-employment than in wage work.

We investigate the empirical validity of our expectations by analyzing data from the Household, Income and Labor Dynamics in Australia (HILDA) survey. HILDA is a household-based longitudinal dataset that has been in existence since 2001. We use information for the period 2001–2017, and our analysis sample comprises 111,495 person-year observations (from 17,701 distinct individuals). Fixed-effects regressions are performed to take account of the longitudinal structure of our dataset, and they reveal a significant positive relationship between health and earnings for both wage workers and self-employed individuals. Moreover, moderation analyses show that the relation between health and earnings is indeed stronger in self-employment than in wage work. We also find a more negative relationship between health and job termination for the self-employed than for wage workers. In our analyses, we also distinguish between two types of self-employment, i.e., self-employment without employees and with employees. This distinction is important to make, because the two groups of self-employed workers have been shown to differ in (some dimensions of) health (Beutell et al., 2014). For example, the distinction between the two types of self-employment is relevant in explaining differences in perceived stress (Hessels et al., 2017), life satisfaction (Johansson Sevä et al., 2016), and work pressure (Blanchflower, 2004). Our analyses show that the main results hold in particular for the self-employed without employees. For them, ill health is particularly harmful as there are no other people who can take over tasks in case of reduced ability to work.

The present study contributes to the growing stream of research on the relation between self-employment and health, and makes three specific contributions to this literature. First, based on the theoretical premise of the human capital literature, we show that the relationship between health and financial performance holds both for wage workers and the self-employed. Second, although many individuals are attracted to self-employment by features such as the relatively high level of decision of authority (Benz and Frey, 2008) and the possibility of high earnings (Taylor, 2004), our findings imply that the earnings of the self-employed are particularly sensitive to health deteriorations. As such, our study contributes to a more nuanced picture of the outcomes of a career in self-employment. Third, following a recent stream of studies in the self-employment literature, we distinguish between self-employed individuals with and without employees. Our results show that the strength of the relation between health and earnings is different for these two occupational groups. The heterogeneity between the two groups is important from a policy perspective, given the steady increase in the number of self-employed individuals without employees in most developed countries (Van Stel and van der Zwan, 2019).

MATERIALS AND METHODS

Sample

The Household, Income and Labor Dynamics in Australia (HILDA) survey is a household-based longitudinal dataset that exists since 2001. We use the HILDA survey in this study because it contains detailed longitudinal information about health, occupational status, and earnings. We use data covering the period 2001–2017. We refer to Summerfield et al. (2019) for more detailed information about the survey.

Variables

Dependent Variable

Our dependent variable *Earnings* reflects the sum of an individual's gross wage/salary income and his/her business income per year. Negative and zero values are not considered. The variable is logarithmically transformed because of its skewness.

Independent Variables

Our variables capturing health are constructed using items from the Short Form Health Survey (SF-36) questionnaire (Ware and Sherbourne, 1992). The SF-36 questionnaire distinguishes between eight scales in total, which are averages of separate items in the questionnaire (Ware and Sherbourne, 1992). To provide a comprehensive analysis of the relationship between health and earnings, we use the scales for general health, bodily pain, and mental health in our study. The *General health* variable is constructed using five items: (i) In general, would you say your health is . . . Excellent; Very good; Good; Fair; or Poor, (ii) I seem to get sick a little easier than other people (True; Not true), (iii) I am as healthy as anybody I know (True; Not true), (iv) I expect my health to get worse (True; Not true), and (v) My health is excellent (True; Not true). Higher values reflect better general health (Ware et al., 2000); Cronbach alpha equals 0.80. *Physical health* was measured with the following two items: (i) How much bodily pain have you had during the past 4 weeks? (No bodily pain; Very mild; Mild; Moderate; Severe; Very severe), and (ii) During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)? (Not at all; Slightly; Moderately; Quite a bit; Extremely). Again, the values are transformed in such a way that higher values reflect better physical health (Ware et al., 2000); Cronbach alpha equals 0.63. *Mental health* was measured with the following four items: How much of the time during the past 4 weeks . . . (i) . . . have you been a very nervous person? (ii) . . . have you felt so down in the dumps that nothing could cheer you up? (iii) . . . have you felt calm and peaceful? (iv) . . . have you felt downhearted and blue? and (v) . . . have you been a happy person? Higher values reflect better mental health (Ware et al., 2000); Cronbach alpha equals 0.83. These three variables capturing health have been standardized to have mean zero and standard deviation one in the analysis sample.

Moderator Variables

The binary variable *Self-employment* distinguishes individuals in self-employment (1) from individuals in wage work (0). In further analyses, we use the two binary variables *Self-employment with employees* and *Self-employment without employees* (for both variables the reference category comprises wage workers) to distinguish self-employed individuals with and without employees. The variables are derived from a question asking individuals whether, at any time at all during the last 7 days, they did any work in a job or a business. In follow-up questions individuals reveal whether they worked for an employer for wages or salary, or whether they worked in their own business, without or with employees. We focus on an individual's main job. That is, if a respondent says (s)he works in more than one job, the job is selected where (s)he gets the most pay from.

Control Variables

In our regressions, we control for the demographic variables *Age* (in years; only individuals between 18 and 64 years are included in our analysis), *Age squared* and *Education* (total years of completed schooling)[1]. Age and age squared have been included in numerous earlier studies on entrepreneurial earnings (e.g., Taylor, 2001); the same holds for educational attainment (Hamilton, 2000; Van Praag et al., 2013). *Marital status* (dummy variables for registered marriages and "separated/divorced/widowed"; "not married" is the reference category; see Wong, 1986; Hamilton, 2000) and *Children* (the number of own resident children) have also been included as control variables (Sorgner et al., 2017). Furthermore, we control for the work-related characteristics *Tenure in current business/job* (the total number of years worked in the current business for the self-employed or in the current job for the wage workers, logarithmically transformed) and *Tenure occupation* (the total number of years worked in the same current occupation – wage work or self-employment – logarithmically transformed). Tenure is commonly included in earnings regressions (Hamilton, 2000). We also control for living area (Burke et al., 2000)[2], and we include year and industry dummies (one-digit industry classification[3]; 19 industries are distinguished), see also Hvide (2009).

[1] The highest number of years of schooling completed is 8, 9, 10, 11, or 12 years. If an individual followed higher education, the values are recoded as follows: postgraduate degree (17), graduate diploma/certificate (16), bachelor's degree (15), and advanced diploma/diploma/certificate (12).

[2] Dummy variables for the following states have been included: Australian Capital Territory, New South Wales, Northern Territory, Queensland, South Australia, Tasmania, Victoria, and Western Australia.

[3] Based on the Australian and New Zealand Standard Industrial Classification (ANZSIC).

Empirical Strategy

We perform linear fixed-effects regressions with *Earnings* (in logarithms) as the dependent variable. Time-invariant factors are controlled for in fixed-effects regressions, and, hence, our regressions exploit the within-person variation over time (Hajek and König, 2016)[4]. The estimated coefficients inform us about the percentual change in the dependent variable as the result of a one-unit change (=1 standard deviation change because the independent variables have been standardized) in the independent variable. To further deal with the possibility of reverse causality bias, we use earnings in the subsequent period (one year ahead) as our dependent variable, whereas all independent and control variables are from the current period. In doing so, we follow other studies in this area (e.g., Hatak and Zhou, 2019). To allow for a different relationship between health and earnings for different type of workers we include interaction terms between our health measures and (1) our binary variable *Self-employment*; and (2) our binary variables *Self-employment with employees* and *Self-employment without employees*. Cluster-robust standard errors are used in all our regressions.

RESULTS

Main Results

Table 1 provides an overview of all variables included in the analysis, together with some descriptive statistics. Importantly, from the 111,495 individual-year observations in our analysis sample, 15,773 come from individuals in self-employment (14.1%) and 95,722 from wage workers (85.9%).

Table 2 shows the results of three fixed-effects regressions. The first column focuses on the relationship between *General health* and *Earnings* for the self-employed and wage workers. The second column zooms in on *Physical health*; the third column includes our *Mental health* measure. The results in the first column of **Table 2** reveal that the positive relationship between *General health* and *Earnings* is significantly stronger in self-employment than in wage work. While a one-standard deviation increase in *General health* (which equals an increase of 18 points on the original scale ranging from 0 to 100) is associated with a 1.1%-increase in earnings in wage work, this increase amounts to 3.9% in self-employment. For *Physical health* (the second column) we retrieve similar results. That is, a one-standard deviation increase (21 points on the original scale) in *Physical health* is associated with a 1.5%-increase in earnings in wage work, and a 4.2%-increase in self-employment. For *Mental health* we do not find a significantly stronger relationship between health and earnings in self-employment. However, we do find that a one-standard deviation increase (16 points on the original scale) in the *Mental health* measure is associated with a 1.3%-increase in earnings in wage work, and a 1.0%-increase in self-employment.

Table 3 distinguishes between self-employment without and with employees. Our sample contains 2,732 self-employed individuals without employees (8,433 person-year observations) and 1,721 self-employed individuals with employees (5,921 person-year observations). The results in **Table 3** show that the main result for *General health* (**Table 2**) applies to the self-employed without employees only (a Wald χ^2-test for the equivalence of the coefficients of the two

[4]Hausman tests also indicate that fixed-effects specifications are preferred over random-effects specifications.

TABLE 1 | Descriptive statistics of the analysis sample.

Variable	Min.	Max.	Wage work		Self-employment	
			Mean	SD	Mean	SD
Earnings (logarithm)	0	14.34	10.67	0.84	10.47	1.17
General health	−3.92	1.51	−0.01	1.00	0.03	1.00
Physical health	−3.75	1.07	0.01	0.99	−0.09	1.03
Mental health	−4.83	1.57	−0.01	1.01	0.09	0.96
Self-employment without employees	0	1			0.59	0.49
Self-employment with employees	0	1			0.41	0.49
Working hours (weekly; logarithm)	−4.61	5.01	3.51	0.53	3.55	0.72
Age	18	64	38.80	12.39	45.31	10.60
Education	8	17	12.73	2.11	12.51	2.11
Not married	0	1	0.41	0.49	0.23	0.42
Married	0	1	0.50	0.50	0.69	0.46
Separated/divorced/widowed	0	1	0.09	0.29	0.08	0.27
Children	0	5	0.84	1.09	1.12	1.23
Tenure business/job (logarithm)	−3.95	3.95	1.07	1.51	1.72	1.35
Tenure SE/wage work (logarithm)	−3.95	3.95	1.40	1.52	2.17	1.28

SD, standard deviation. Table is based on 111,495 observations (17,701 distinct individuals), of which 15,773 refer to self-employment (3,853 distinct self-employed individuals) and 95,722 to wage work (16,242 distinct wage workers). General health, Physical health, and Mental health have been standardized (mean 0, standard deviation 1 in our analysis sample). "Not married" serves as a reference category in our regressions. Values larger than 5 for Children have been recoded to 5. Descriptive statistics for the living areas, industries, and wave dummies are available upon request from the authors.

TABLE 2 | Fixed-effects regressions with *Earnings* (in logarithms) in the subsequent period as the dependent variable.

	General health (1)		Physical health (2)		Mental health (3)	
	Coefficients	SE	Coefficients	SE	Coefficients	SE
Health	0.011**	0.004	0.015***	0.003	0.013***	0.003
Self-employment	−0.319***	0.019	−0.317***	0.019	−0.318***	0.019
Health × Self-employment	0.028*	0.013	0.027**	0.010	−0.003	0.011
Age	0.163***	0.003	0.163***	0.003	0.164***	0.003
Age squared	−0.001***	0.000	−0.001***	0.000	−0.001***	0.000
Education	0.129***	0.006	0.129***	0.006	0.129***	0.006
Married	−0.089***	0.011	−0.089***	0.011	−0.089***	0.011
Separated/divorced/widowed	−0.061***	0.017	−0.062***	0.017	−0.059***	0.017
Children	−0.075***	0.005	−0.076***	0.005	−0.075***	0.005
Tenure business/job	0.032***	0.002	0.033***	0.002	0.033***	0.002
Tenure SE/wage work	0.013***	0.002	0.013***	0.002	0.013***	0.002
Observations	111,495		111,495		111,495	
Individuals	17,701		17,701		17,701	
R^2 (within)	0.21		0.21		0.21	

**p* < 0.05; ***p* < 0.01; and ****p* < 0.001. SE, cluster-robust standard error. Sector, wave, and state dummies (and the intercept) are included; the corresponding estimates are available upon request from the authors.*

TABLE 3 | Fixed-effects regressions with *Earnings* (in logarithms) in the subsequent period as the dependent variable.

	General health (1)		Physical health (2)		Mental health (3)	
	Coefficients	SE	Coefficients	SE	Coefficients	SE
Health	0.012**	0.004	0.015***	0.003	0.014***	0.003
Self-employment without employees	−0.407***	0.022	−0.406***	0.022	−0.408***	0.022
Self-employment with employees	−0.171***	0.023	−0.170***	0.023	−0.170***	0.023
Health × Self-employment without employment	0.042*	0.018	0.028*	0.014	0.006	0.015
Health × Self-employment with employment	0.0002	0.017	0.033*	0.014	−0.021	0.015
Age	0.164***	0.003	0.163***	0.003	0.164***	0.003
Age squared	−0.001***	0.000	−0.001***	0.000	−0.001***	0.000
Education	0.128***	0.006	0.128***	0.006	0.128***	0.006
Married	−0.087***	0.011	−0.087***	0.011	−0.087***	0.011
Separated/divorced/widowed	−0.059***	0.017	−0.059***	0.017	−0.056***	0.017
Children	−0.079***	0.005	−0.080***	0.005	−0.079***	0.005
Tenure business/job	0.032***	0.002	0.032***	0.002	0.032***	0.002
Tenure SE/wage work	0.012***	0.002	0.013***	0.002	0.012***	0.002
Observations	110,076		110,076		110,076	
Individuals	17,573		17,573		17,573	
R^2 (within)	0.21		0.21		0.21	

*Distinction between self-employed individuals without and with employees. *p < 0.05; **p < 0.01; and ***p < 0.001. SE, cluster-robust standard error. Sector, wave, and state dummies (and the intercept) are included; the corresponding estimates are available upon request from the authors. Information about having employees is unknown for 1,419 observations.*

self-employment groups gives $p = 0.05$), while we find a stronger relationship between *Physical health* and *Earnings* for both groups of self-employed workers compared to wage workers. A Wald χ^2-test ($p = 0.80$) indicates that an increase in the *Physical health* measure is associated with the same change in earnings for each type of self-employment, compared to wage work. For *Mental health*, we do not find a significantly stronger relationship with *Earnings* for either type of self-employment.

Interaction plots based on the regressions in **Table 3** are displayed in **Figure 1**. The figures show the predicted values of the dependent variable *Earnings* for the values of the standardized health variables (with −1 and +1 chosen as minimum and maximum values). **Figure 1A** (*General health*) shows relatively flat lines for wage work and self-employment with employees, and a steeper line for self-employment without employees. **Figure 1B** (*Physical health*) shows steeper lines for both self-employment groups compared with wage work,

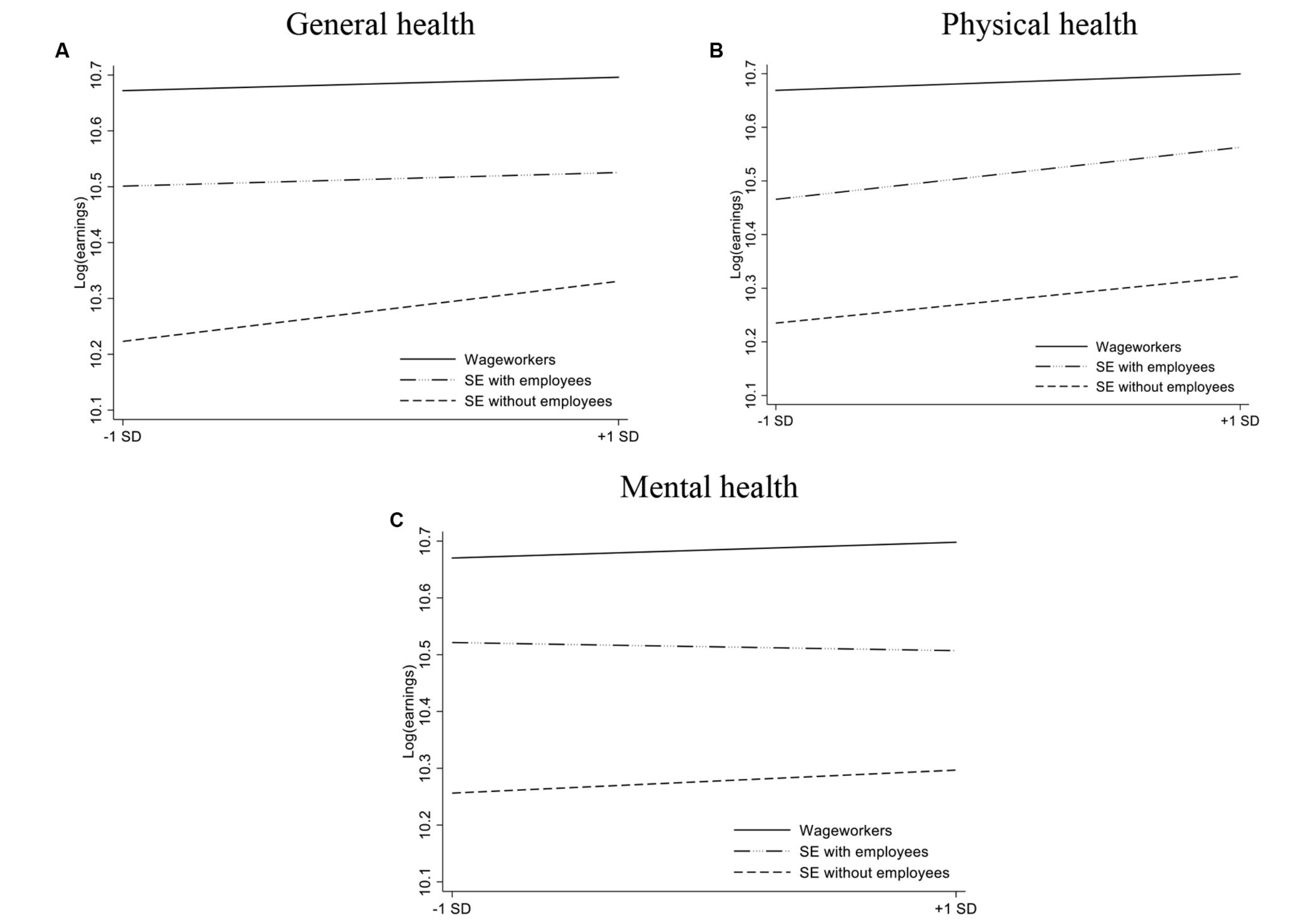

FIGURE 1 | The relationship between our health measures (Panel **A**: General health, Panel **B**: Physical health, Panel **C**: Mental Health) and *Earnings* for wage workers, self-employed individuals without employees, and self-employed individuals with employees (based on the regression results in **Table 3**).

and **Figure 1C** (*Mental health*) displays three lines with a relatively equal slope.

Additional Results

Other Labor Market Outcomes

Two other labor market outcomes frequently analyzed in the health economics literature are the number of working hours and the transition into unemployment (Lenhart, 2019). To complement the main analyses, we focus on the number of working hours per week first. We find that the number of working hours partly explains the higher returns to health in terms of earnings. That is, after adding the number of working hours to the specification in **Table 2**, we observe smaller interaction coefficients in the regressions for *General health* and *Physical health*. The results are displayed in **Table 4** Panel A. Panel B distinguishes between self-employment without and with employees, and we observe reduced coefficients for the interaction term *Health* × *Self-employment without employees*. Thus, in line with our reasoning, the stronger positive relationship between health (generally and physically) and earnings in self-employment compared to wage work is partly explained by the number of working hours, i.e., the ability to work[5].

Second, we focus on the probability that an individual active in the labor market – in self-employment or in wage work – becomes unemployed or moves out of the labor force in the subsequent time period (exit between t and $t + 1$). Binary logistic regressions with *Exit* as dependent variable (Allison, 1982) show that there is a particularly strong negative relationship between health and *Exit* for the self-employed without employees (compared with wage workers) in case of *General health* and *Mental health* (**Table 5**). Hence, while poorer health is associated with a higher probability of leaving one's current job, we note that this association is stronger for the self-employed (without employees) compared with wage workers. The interaction plots depicting these relationships are provided in **Figure 2**.

[5]For example, the coefficient of the interaction term *Health* × *Self-employment* is reduced by 34.7 and 21.9% for *General health* and *Physical health*, respectively. The coefficient of the interaction term *Health* × *Self-employment without employees* is reduced by 29.0 and 10.2%, respectively.

TABLE 4 | Fixed-effects regressions with *Earnings* (in logarithms) in the subsequent period as the dependent variable and *Working hours* as an additional control variable.

	General health (1)		Physical health (2)		Mental health (3)	
	Coefficients	SE	Coefficients	SE	Coefficients	SE
Panel A						
Health	0.009**	0.003	0.014***	0.002	0.012***	0.003
Self-employment	−0.269***	0.018	−0.267***	0.018	−0.268***	0.018
Health × Self-employment	0.018	0.013	0.021*	0.010	−0.006	0.011
Observations	111,495		111,495		111,495	
Individuals	17,701		17,701		17,701	
R^2 (within)	0.30		0.30		0.30	
Panel B						
Health	0.010**	0.003	0.015***	0.002	0.013***	0.003
Self-employment without employees	−0.327***	0.020	−0.326***	0.020	−0.328***	0.020
Self-employment with employees	−0.171***	0.023	−0.169***	0.023	−0.169***	0.023
Health × Self-employment without employment	0.030	0.017	0.025	0.014	−0.001	0.014
Health × Self-employment with employment	0.001	0.017	0.026	0.015	−0.019	0.016
Observations	110,076		110,076		110,076	
Individuals	17,573		17,573		17,573	
R^2 (within)	0.21		0.21		0.21	

p* < 0.05; ***p* < 0.01; and * *p* < 0.001. SE, cluster-robust standard error. Control variables (including working hours) are included; the corresponding estimates are available upon request from the authors. Panel B distinguishes between the self-employed without and with employees. Information about having employees is unknown for 1,419 observations.*

TABLE 5 | Binary logistic regressions with *Exit* as the dependent variable.

	General health (1)		Physical health (2)		Mental health (3)	
	Coefficients	SE	Coefficients	SE	Coefficients	SE
Panel A						
Health	−0.189***	0.012	−0.200***	0.012	−0.178***	0.012
Self-employment	0.0002	0.039	−0.010	0.040	−0.001	0.039
Health × Self-employment	−0.092**	0.032	−0.034	0.031	−0.103**	0.032
Observations	113,096		113,096		113,096	
Individuals	17,749		17,749		17,749	
Panel B						
Health	−0.189***	0.012	−0.201***	0.012	−0.179***	0.012
Self-employment without employees	0.237***	0.045	0.243***	0.046	0.246***	0.044
Self-employment with employees	−0.507***	0.074	−0.563***	0.079	−0.531***	0.074
Health × Self-employment without employment	−0.082*	0.036	0.001	0.036	−0.082*	0.037
Health × Self-employment with employment	−0.059	0.067	−0.125	0.066	−0.116	0.066
Observations	111,607		111,607		111,607	
Individuals	17,634		17,634		17,634	

p* < 0.05; ***p* < 0.01; and ****p* < 0.001. SE, cluster-robust standard error. Control variables are included; the corresponding estimates are available upon request from the authors. Panel B distinguishes between the self-employed without and with employees. Information about having employees is unknown for 1,489 observations. The analysis sample in slightly larger than the sample used for the regressions reported in **Table 2, because some individuals reported employment information without providing information about their earnings.*

Health Shocks

As a robustness analysis, we analyze the validity of our results in a set-up in which we "match" individuals who experience a negative health shock with individuals who do not experience a health shock and remain in good health[6]. Hence, apart from this health shock, the two groups are similar in terms of the control variables listed above. By using this type of so-called propensity score matching, we "isolate" the impact of a health shock on *Earnings*. Earlier studies have used similar approaches to infer causal

[6]We consider someone experiencing a negative health shock if his/her value on the original 0–100 health scale is at least 75 in period $t-2$, and below 75 in $t-1$ and t; We consider someone not experiencing a negative health shock if he/she has a score of at least 75 at $t-2$, $t-1$, and t.

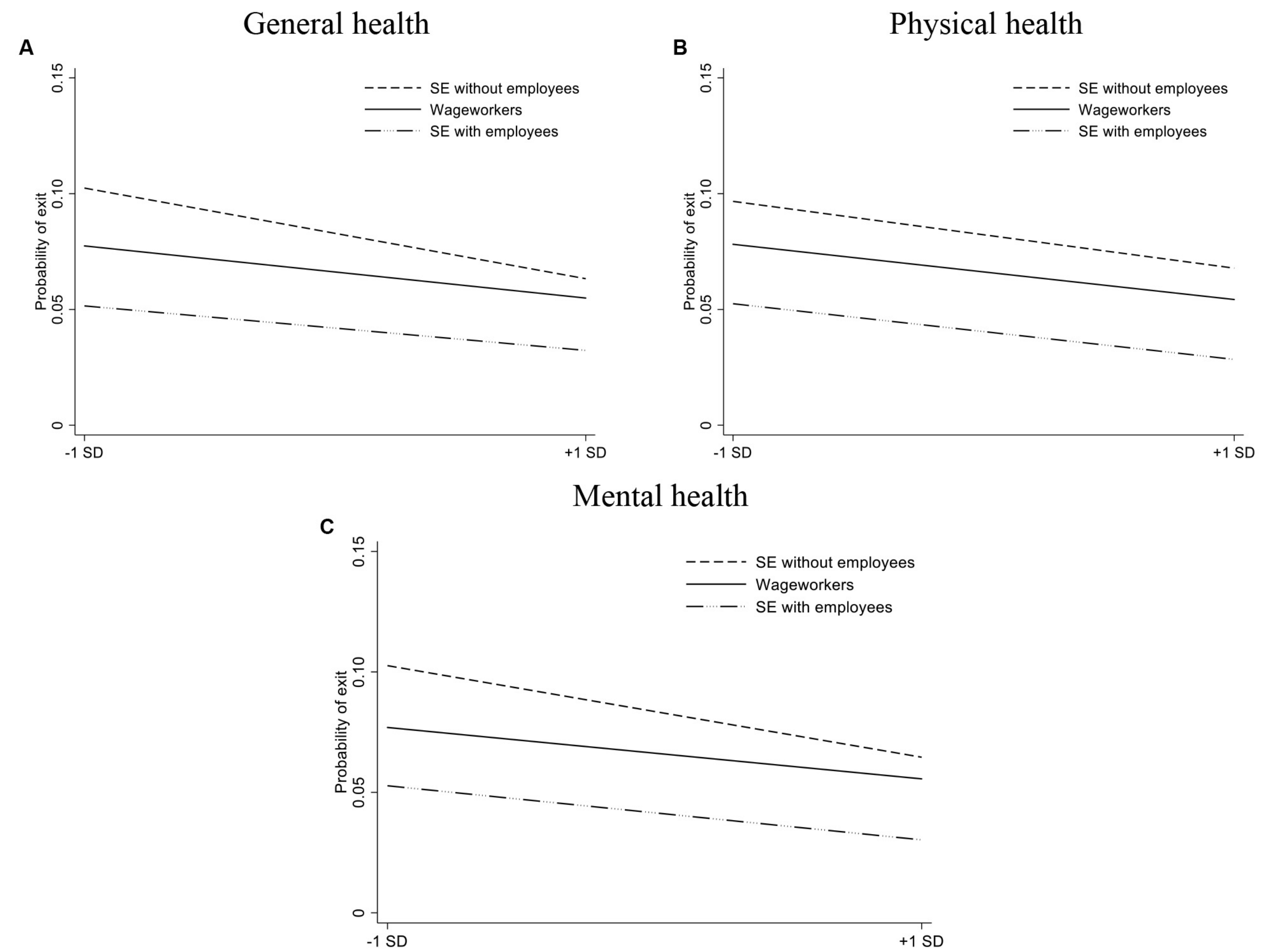

FIGURE 2 | The relationship between our health measures (Panel **A**: General health, Panel **B**: Physical health, Panel **C**: Mental Health) and *Earnings* for wage workers, self-employed individuals without employees, and self-employed individuals with employees (based on the regressions results in **Table 5**).

relationships between health and relevant outcomes (García-Gómez, 2011; Lan et al., 2019). In line with the main findings reported in **Table 2**, we find again that the effect on *Earnings* for those experiencing a (negative) health shock is much stronger in self-employment than in wage work. Again, we find that these results hold for *General Health* and *Physical health* but not for *Mental health*. Estimation results are available upon request from the authors.

DISCUSSION

Our analyses show that an increase in general health is associated with an increase in earnings in wage work. Notably, the increase in earnings resulting from the same increase in health is more than twice as large in self-employment and thus the difference between the two groups of workers is substantial. We note that this pattern of a stronger relationship between health and earnings is very comparable for general health and our measure of physical health, while the returns to health are similar in self-employment and wage work in case of mental health. Additional analyses show that being healthy generally and mentally is more important for the self-employed (without employees) than for wage workers in terms of remaining in their present job. While earlier research has shown that the presence of depressive symptoms may precede a switch out of self-employment (Hessels et al., 2018), the present analysis stresses that the effect of mental health on job termination is larger in self-employment than in wage work.

Our additional analyses show that these results can be partially explained by the notion that, at least in the short term, earnings in self-employment are more dependent on the ability to work (as proxied by the number of working hours) than earnings in wage work. Besides, decision authority, an essential difference between the occupations of the self-employed and wage workers (Hébert and Link, 1989; Hundley, 2001; Stephan and Roesler, 2010), may partially explain the stronger relationship between health and financial performance for the self-employed compared to wage workers. Decision authority at work makes individuals feel responsible for work outcomes (Hackman and Oldham, 1976) and has been associated with improved work performance (Bond and Bunce, 2001). For the self-employed, it also makes that they can more easily adapt their production activities such that they yield higher returns to their human capital assets (Van Praag et al., 2013).

We note that the empirical results are based on the analysis of an Australian dataset, and this raises the question as to whether the revealed relationships between health and earnings are specific to Australia or applicable to other countries as well. A related study about the relationship between self-employment and work-related stress (Hessels et al., 2017) shows that the findings based on HILDA can be generalized to other countries, in particular to countries with a similar income level per capita as Australia. Arguably, the same scope of generalization may hold for the results of the present study.

CONCLUSION

Market dynamics make that the occupation of self-employed individuals is characterized by a relatively high level of uncertainty (Wennekers et al., 2007) and that the self-employed are often involved in a wide variety of tasks for which they are not well prepared (Baron, 2008). The self-employed often work long hours (Hyytinen and Ruuskanen, 2007) and perform a broad range of tasks to start and operate their business (Lazear, 2005). Therefore, several studies consider good health to be of utmost importance to adequately handle challenges, adversity, and stressors that come with being self-employed as well as to run a business successfully (Torrès, 2012; Rietveld et al., 2015; Hessels et al., 2018). Financial performance in self-employment depends heavily on the individual's ability to work (Rietveld et al., 2015). In the present study, we assessed the relationship between an entrepreneur's health status and his/her earnings. We provided robust evidence for a positive relationship between health and financial performance in self-employment in terms of earnings. All in all, this relationship can be considered to be a "double-edged sword" (Lewin-Epstein and Yuchtman-Yaar, 1991): good health boosts earnings in self-employment more than earnings in wage work, but ill health reduces earnings more substantially in self-employment compared to wage work.

The results of our study underscore the importance of health for the financial performance of the self-employed and their businesses. However, they also have implications beyond the individual level. The self-employed play an important role in the economy as job creators and innovators (Van Praag and Versloot, 2007; De Wit and De Kok, 2014). While companies often offer programs for improving health and vitality of their employees, the positive link of health with entrepreneurial earnings illustrates that it is of great importance to maintain and enhance the self-employed's health as well. There may be a role for policy makers here, because occupational patterns in earnings dynamics may have detrimental effects on inequality (Castellano et al., 2019a,b). Although self-employment earnings are relatively high when being in good health, a deterioration of health is associated with a comparatively strong reduction in earnings and makes that individuals may have to abandon their business (a relationship for which we also provide evidence in the present study). Just as for other ingredients of human capital, such as cognitive ability and education, it seems "efficient" to have the healthiest individuals running their own business (Van Praag et al., 2013). However, the relatively transient nature of health compared to education and cognitive ability makes such a recommendation not entirely straightforward. Still, also in light of increasing numbers of self-employed individuals without employees in most developed countries (Van Stel and van der Zwan, 2019), we recommended policy makers to develop the social security system in such a way that it is sufficiently robust against a possibly increasing number of self-employed individuals in ill-health because the self-employed are often not covered by health insurance.

Although we provide novel evidence in this study about the stronger relationship between health and earning in self-employment than in wage work, we believe there are other important aspects of this relationship we left unaddressed in the present study. An important direction for future research may therefore be to assess how health develops over time in self-employment. The self-employment may be relatively healthy when starting a business, but health and associated feelings of vitality possibly differ depending on whether the entrepreneur has just started, whether he/she is experiencing difficulties with the firm, or whether the firm is growing. In some of these stages, good health may be more crucial than in others. Another direction for future research could be to evaluate the effect of health on other relatively objective performance indicators for self-employment such as business growth in terms of the number of employees, innovative capacity, as well as to assess the impact of entrepreneurs' health on the performance and wellbeing of their employees. Healthy entrepreneurs have high energy levels and are mentally and physically vigorous. As such, their vitality may not only benefit themselves but may also have spillover effects on their employees. Finally, we used moderation analysis to study the relative impact of health on earnings in self-employment and wage work. More extensive mediated moderation analyses may be adopted in future studies to provide compelling empirical evidence about the precise mechanisms explaining the interaction effects found in the present study.

AUTHOR'S NOTE

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DATA AVAILABILITY STATEMENT

The dataset analyzed for this study can be obtained through https://melbourneinstitute.unimelb.edu.au/hilda/for-data-users.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

JH, CR, and PZ were involved in all parts of the study, except the data analysis. PZ performed the data analysis.

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Exploring the Link Between Mentoring and Intangible Outcomes of Entrepreneurship: The Mediating Role of Self-Efficacy and Moderating Effects of Gender

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Entrepreneurship education is increasingly becoming a focal strategy for promoting entrepreneurship, particularly to foster entrepreneurial intentions and startups. However, learning and support are equally important after startup for novice entrepreneurs to gain a good level of confidence to manage their business and achieve the desired outcomes. Using a sample of 189 young self-employed individuals in Uganda, this study examines the differential impact of mentoring and self-efficacy on the achievement of intangible outcomes of entrepreneurship including satisfaction of need for autonomy, work satisfaction and the intention to stay in self-employment. We found self-efficacy to mediate the effects of mentoring on these intangible outcomes. In addition, the results showed substantial gender differences. Whereas women's satisfaction of the need for autonomy and intention to stay in self-employment were strongly associated with the direct effects of mentoring, their male counterparts seemed to benefit more if mentoring resulted in increased self-efficacy. Overall, our findings suggest that whereas mentoring improves the competence of small business owners and consequently achievement of superior outcomes, mentoring should also focus on boosting self-efficacy which in turn is essential for the application of the entrepreneurial competencies.

Keywords: autonomy, entrepreneurial mentoring, entrepreneurial outcomes, gender differences, intention to stay in self-employment, self-efficacy, work satisfaction

INTRODUCTION

The need to foster entrepreneurship to boost innovation, self-employment, and economic growth has sparked greater efforts in reviving entrepreneurship education and training (Sánchez, 2013). The assumption is that entrepreneurial training has indirect effects on economic development (Hasan et al., 2017; Nabi et al., 2017; Hahn et al., 2019) through development of the ability to identify and act upon business opportunities (Politis, 2005). While appreciating the contribution of this fast-growing field to entrepreneurship development, it is also important to recognize that it mostly focuses on stimulating new startups. After starting up, entrepreneurs need to continue to learn and receive appropriate support to cope with the challenges of the new business to enable success and persistence. Learning, especially from failure, enables entrepreneurs to gain insights about the critical points in the entrepreneurial process (Cope, 2011). However, entrepreneurs can avoid failure and increase likelihoods of success of new start-ups through continues formal and informal learning from mentors and critical incidents (Sullivan, 2000). The present study, therefore, focuses on entrepreneurial learning through mentoring and its association with entrepreneurs' perceived level of competence (self-efficacy) and entrepreneurial outcomes.

Entrepreneurial mentoring involves an experienced entrepreneur supporting a prospecting or novice entrepreneur in acquiring the necessary competency for establishing and managing his or her business venture (St-Jean and Audet, 2012; Xiao and North, 2017). The support may appear in different forms including but not limited to experience sharing, role modeling, coaching, apprenticeships, networking, information sharing, motivation, guidance, and feedback (Beckett, 2010; Gong et al., 2011; St-Jean, 2012; Radu Lefebvre and Redien-Collot, 2013; Moore and Wang, 2017). The learning gained from these support efforts and the experiences of the entrepreneur transform into knowledge and skills that enable novices to effectively startup and manage their business ventures (Politis, 2005). Moreover, learning facilitates coping with the challenges of starting and managing a business (Politis, 2005), which may facilitate the attainment of objective and subjective entrepreneurial outcomes including venture performance, entrepreneur satisfaction, and psychological wellbeing. In the present study, we propose that self-efficacy, which partly develops from entrepreneurial learning, mediates the effects of mentoring on entrepreneurial outcomes.

Karlsson and Moberg (2013) claim there is an inadequate understanding of the outcomes of entrepreneurial education. Much of entrepreneurial education and training efforts tend to emphasize the acquisition of cognitive or hard skills. Trainers focus on aspects such as business planning, managing finances, record keeping, savings, and investment. However, effective training and mentoring programs result in the development of non-cognitive skills and resources as well. Notable amounts of affective learning result from entrepreneurial mentoring, which is further associated with benefits relating to the self-concept of the entrepreneur particularly self-efficacy and self-image (St-Jean, 2012). The enhanced perception of an individual's entrepreneurial abilities through education is associated with behavior (Karlsson and Moberg, 2013), suggesting higher likelihoods of exerting more effort in one's entrepreneurial activities and consequently higher entrepreneurial success.

In work contexts, mentoring is associated with career clarity, superior performance, adaptability in career and work, job satisfaction, higher income, and professional commitment, (Cascio and Gasker, 2001; Wanberg et al., 2006; Mitchell et al., 2015; O'Mally and Antonelli, 2016). This depicts mentoring as relevant for attaining both objective and subjective work outcomes. In entrepreneurship, mentoring has been associated with objective outcomes specifically skill improvement (Sarri, 2011; Kyrgidou and Petridou, 2013; Gimmon, 2014) which consequently translate into high performance and persistence or business continuity (McKevitt and Marshall, 2015). Our focus is primarily on subjective and intangible outcomes including intrinsic and extrinsic work satisfaction, satisfaction of basic psychological needs (with specific reference to the need for autonomy), and intention to stay in self-employment. In this direction, previous research has demonstrated that mentoring is associated with entrepreneurs' job satisfaction, and self-efficacy (St-Jean and Audet, 2013; Gimmon, 2014).

In the present study, we highlight the importance of self-efficacy as a mediating mechanism through which entrepreneurial mentoring asserts its influence on satisfaction of need for autonomy, intrinsic and extrinsic work satisfaction, and the desire to stay in self-employment. The study of St-Jean and Mathieu (2015) indicates that self-efficacy mediates the link between mentoring and psychological outcomes such as an entrepreneurial attitude, satisfaction, and persistence. In the present study, we not only test this claim among small business owners in a less developed country but also link mentoring and efficacy to satisfaction of the psychological need for autonomy and the intention to stay in self-employment. Whereas mentoring has numerous benefits to prospecting and novice entrepreneurs, there are variations based on individual differences including gender (Ensher et al., 2000). We, therefore, propose a moderated mediation model such that the effects of mentoring on intangible entrepreneurial outcomes are mediated by self-efficacy and moderated by gender. The theoretical basis for our proposition is presented in the subsequent section.

THEORY AND HYPOTHESIS DEVELOPMENT

In the present study, we posit that self-efficacy is a mediating mechanism through which entrepreneurial learning accruing from mentoring impacts on entrepreneurial outcomes. Self-efficacy reflects an individual's belief in his/her abilities and skills to perform a given task and is a precedence for exerting effort, performance, persistence, and success in the task (Bandura, 1997, 2010). Rooted in the social cognitive theory that emphasizes role modeling, person characteristics, and the importance of the environment (Lent et al., 1994, 2002; Lent and Brown, 2013), the self-efficacy theory suggests that self-efficacy develops from mastery experiences, role modeling, social persuasion, and one's physiological and mood state (Stajkovic and Luthans, 1998; Bandura, 2010). Three of these sources of self-efficacy are reflected in the roles of an entrepreneurship mentor. A mentor is a person who acts as a role model, works together with and encourages the protégée, in addition to providing informational and emotional support, persuading, reassuring, motivating, inspiring, guiding, and integrating the mentee in the entrepreneurship community (St-Jean, 2012; St-Jean and Audet, 2012; Nabi et al., 2019). Working with novice entrepreneurs or offering them apprentice opportunities, role modeling and encouragement are important learning opportunities for the development of entrepreneurial self-efficacy (Wilson et al., 2007).

One of the central ideas in the self-efficacy theory is that engagement and persistence in a given activity is a function of judgment about one's skills and capabilities to accomplish the activity but also the ability to cope with the environmental demands in which the activity is conducted (Maddux, 1995). Following this assumption, self-efficacy is associated with shaping thoughts that underlie behavior, regulation of motivation, regulation of emotions, selection of activities and environments (Bandura, 2010). In the entrepreneurial sense, therefore, self-efficacy influences the nature of entrepreneurial activities, the efforts business owners exert in running their ventures, and the affective responses to risks and failures; which further determine the entrepreneurial outcomes. Self-efficacy is an important aspect of perceived behavioral control (Ajzen, 2002) and psychological capital (Luthans et al., 2004, 2015); which constructs are important predictors of engaging in a given behavior. From the psychological capital theory, psychological resources including self-efficacy are associated with commitment, performance, and job satisfaction (e.g., Larson and Luthans, 2006; Luthans et al., 2007b; Avey et al., 2010; Baron et al., 2016a). Hence, self-efficacy could be an important resource for attaining not only the objective entrepreneurial outcomes but also the subjective ones. The predicted associations of self-efficacy with mentoring and intangible entrepreneurial outcomes are indicated in **Figure 1** and discussed in the subsequent subsections. However, we begin with elucidating the intangible entrepreneurial outcomes.

Intangible Outcomes as Measures of Entrepreneurial Success

Individuals go into entrepreneurship for different reasons. Therefore, success does not necessarily have a uniform meaning among all entrepreneurs. To some, it is about creating wealth or financial gain (Parker, 2009). To others, fulfillment of personal goals that are non-financial in nature such as autonomy and independence, self-realization, recognition, and flexible working times may be the expected outcomes (DeTienne et al., 2008; Edelman et al., 2010; Baron et al., 2016a; Baluku et al., 2018b). Even for those who predominantly pursue financial goals, intangible outcomes are also targeted or at least unintended yet vital outcomes. Hence, entrepreneurs' evaluations of success tend to be more than the objective economic indicators of performance and profits, and therefore important for research to focus on the subjective aspects of success (Baron et al., 2016a; Wach et al., 2016). Subjective entrepreneurial success depicts an individuals' understanding and evaluation of the valued achievements from the business venture (Dej and Gorgievski, 2012; Wach et al., 2016). In the present study, we focus on specifically subjective and intangible outcomes including satisfaction of the need for autonomy, work satisfaction, and intention to stay in self-employment.

Satisfaction of Need for Autonomy

The Self-Determination Theory suggests that the autonomous motivation to engage in behavior or activity, which is mostly intrinsic in nature, represents the desire for psychological growth and flourishing (Ryan and Deci, 2000, 2017). Psychological growth, integrity, and wellbeing are attained when three psychological needs including autonomy, competence, and relatedness are satisfied (Ryan and Deci, 2017); hence the pursuit to satisfy these needs is a basis for engaging in activities and behaviors that individuals find inherently interesting (Deci and Ryan, 2000; Ryan and Deci, 2000; García Calvo et al., 2010; Welters et al., 2014). In turn, satisfying these needs facilitates optimum psychological functioning and wellbeing (Deci and Ryan, 2008). In the domain of work, satisfaction of the need for autonomy is particularly regarded as important for workers wellbeing and functioning (Van den Broeck et al., 2010; Otto et al., 2013) and has been cited as one of the major reasons why some people have a preference for an entrepreneurial career (Kolvereid, 1996; Hundley, 2001; van Gelderen, 2010; Croson and Minniti, 2012). It is claimed to be an important determinant of entrepreneurs' job satisfaction and happiness (Binder and Coad, 2013; Berglund et al., 2015; Baluku et al., 2018b). This psychological need represents the desire for self-regulation, which is different from independence or self-reliance, and rather encompasses behaviors that are congruent to one's inherent interests and values (Ryan and Deci, 2017). In this paper, we demonstrate how mentoring has the potential for

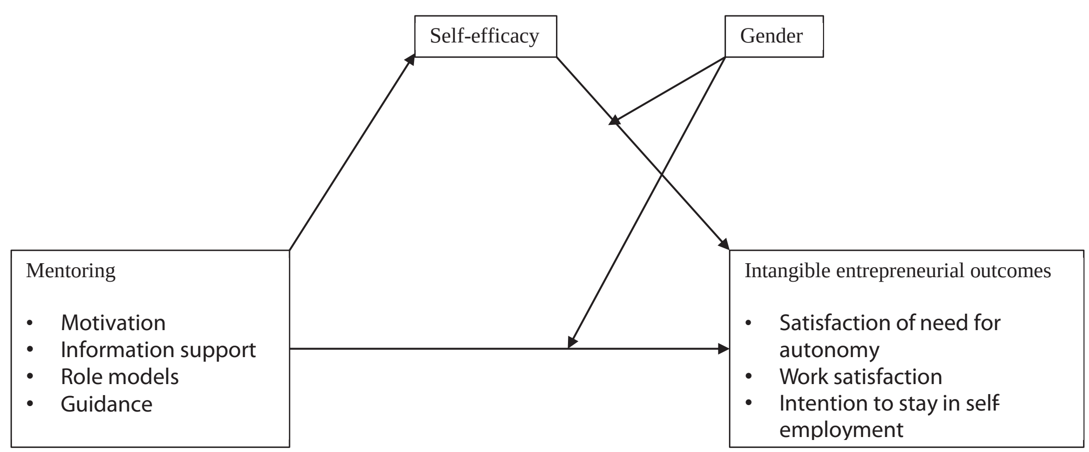

FIGURE 1 | Conceptual model.

enabling novice entrepreneurs to achieve gratification of the need for autonomy.

Work Satisfaction

The Industrial and Organizational psychology literature is not devoid of work or job satisfaction research, most of this research is concerned with the intrinsic and extrinsic job satisfaction of employees in organizations though, while rarely job satisfaction of own-account workers or entrepreneurs is taken into account. In the present study, satisfaction denotes the conceptualization of work satisfaction as a state of emotional pleasure accruing from the appraisal of an individual's work as facilitating the achievement of one's work values (Locke, 1969). This involves an evaluation of whether one is achieving the intrinsic and extrinsic goals he or she expects from his or her work. Hence, work satisfaction portrays happiness with one's work; which is often reflected in pleasant moods, emotions, wellbeing and positive attitudes (Fisher, 2010). Similar to satisfaction of employees, both intrinsic and extrinsic aspects of work satisfaction must be considered in self-employment, since these are distinct and may be related differently to other predictor or outcome variables (Hauber and Bruininks, 1986; Hirschfeld, 2000). Work satisfaction as an important work attitude has an influence on several domains of an individual's life. Therefore, perceptions of satisfaction or happiness at work are extremely important for an individual's overall happiness (Olsson et al., 2013; De Neve and Ward, 2017). In the entrepreneurial context, work satisfaction has a spillover effect on other entrepreneurial outcomes including venture performance and profits (Dijkhuizen et al., 2016) and willingness to persist in an entrepreneurial role (Baluku et al., 2018a). Whereas entrepreneurs job satisfaction has previously been linked to individual attributes such as personality (Berglund et al., 2015), work-person fit (De Jager et al., 2016; Langer et al., 2019) and attainment of work autonomy (Sappleton and Lourenço, 2016; Baluku et al., 2018b; Shir et al., 2018), we posit in the present paper that mentoring and the resulting self-efficacy are also foundations for achieving satisfaction in entrepreneurship work.

Intention to Stay in Self-Employment

The willingness to continue with work in the entrepreneurship field could be an important proxy indicator of the positive evaluation of their work and outcomes. Extant research has investigated the related constructs of entrepreneurial success, failure, exit, and re-entry. However, literature is silent on entrepreneurs' intention to stay in their roles for a long time. Patel and Thatcher (2014) labeled this phenomenon as persistence in self-employment, while other researchers have investigated it in terms of commitment to one's own business (Felfe et al., 2008; Baluku et al., 2018a,b,; Schummer et al., 2019). Persistence in entrepreneurial work is important for realization of the economic benefits of entrepreneurship since these tend to accrue in the long term than in the short term (Baluku et al., 2018a; Schummer et al., 2019). Having the intention to stay in this form of employment, which reflects the commitment to the form of employment (Felfe et al., 2008) generates higher morale and effort, hence an essential attitude that can stimulate attainment of other work outcomes (Felfe et al., 2008).

Entrepreneurial Mentoring

Scholars and practitioners alike are increasingly focusing attention on entrepreneurship education. The assumption is that entrepreneurial learning has the potential to stimulate successful innovations and entrepreneurial startups through the acquisition of entrepreneurial competencies, development of positive entrepreneurial attitudes, and fostering innovative ideas (Man, 2019; Wang et al., 2019; Wei et al., 2019). Whereas much attention is being paid to entrepreneurship education in universities and other formal settings, learning that supports entrepreneurship development in informal settings should not be forgotten or ignored. Moreover, the effectiveness of entrepreneurial mentoring could be dependent on the context (Ting et al., 2017). It has been posited that informal mentoring is well suited to small business owners given the context in which they operate (McKevitt and Marshall, 2015). In this study, we particularly focus on the impact of informal mentoring on attaining intangible entrepreneurial outcomes.

At the general level, entrepreneurial mentoring is a learning process in which the experienced entrepreneur supports the development of a prospecting or novice entrepreneur (Beckett, 2010; Gong et al., 2011; St-Jean and Audet, 2012; Xiao and North, 2017). Entrepreneurial mentoring facilitates entrepreneurial learning in a number of ways including motivation, information support, counseling, reflection, integration, guidance, and role modeling (St-Jean, 2012). Like formal mentoring relationships, informal mentoring is important and has the potential for stimulating attainment of important entrepreneurial outcomes including persistence and survival, reduction in costs, satisfaction, psychological wellbeing, and business leadership. Evidence from research on informal and formal mentoring among organizational employees shows that informal mentoring may actually have stronger positive impact on self-efficacy and leadership as well as on work outcomes such as salary, intrinsic job satisfaction, and commitment (Chao et al., 1992; Raabe and Beehr, 2003; Van Emmerik, 2004). This is because they report receiving better support than those in formal mentoring situations (Chao et al., 1992). Mentoring functions such as information sharing, support with creating networks, guidance and experience sharing (Beckett, 2010; Gong et al., 2011; Radu Lefebvre and Redien-Collot, 2013) frequently occur informally especially among small business owners in the informal sector. Such mentoring can come from entrepreneurial socializing agents including family, peers, and friends who are experienced in business, role models, and others who support skill development and provide essential resources including information and knowledge. All these aid novice entrepreneurs to adjust to their entrepreneurial roles (Starr and Fondas, 1992; Krueger, 2007). To highlight the role of informal mentoring, Brodie et al. (2017) suggest that formal mentoring programs should be supplemented by informal mentoring relationships in form of peer support; and where possible both formal and informal mentoring need to be incorporated in entrepreneurial learning programs (Edwards and Muir, 2005).

Like formal mentoring, informal mentoring facilitates skills acquisition and change in attitudes among prospecting and novice entrepreneurs (Ahmed et al., 2017; Baluku et al., 2019b), hence improves competence for opportunity recognition and efficacy for action. Mentors in the informal setting tend to offer more hands-on training and practical information since this type of learning occurs in the natural business environment and on the job. Moreover, practical training is associated with superior entrepreneurship learning outcomes (Autio et al., 2001; Fayolle and Gailly, 2015; Huq and Gilbert, 2017).

The immediate outcomes of entrepreneurship education and learning include the acquisition of entrepreneurial skills and knowledge. Beyond professional skills such as business planning and financial management, mentoring does support the development of soft and affective skills that are related to the core functions of an entrepreneur. Soft skills such as self-efficacy or boost in confidence are important (St-Jean and Audet, 2012; Brodie et al., 2017) which further facilitate the application of entrepreneurial skills. In addition, entrepreneurial mentoring offers novice entrepreneurs a platform for obtaining emotional support, learning to make decisions, building a professional identity and belonging to the entrepreneurship community (Terjesen and Sullivan, 2011; St-Jean and Audet, 2012; Radu Lefebvre and Redien-Collot, 2013). These, in turn, should facilitate the achievement of intangible entrepreneurial outcomes including wellbeing, autonomy, satisfaction, and the desire to persist in the entrepreneurial role. Concerning the dimensionality of work satisfaction, although extant research has mainly focused on intrinsic aspects, there is evidence suggesting that mentoring also has positive effects on extrinsic satisfaction of individuals small businesses (e.g., Lo and Ramayah, 2011). Both formal and informal support, guidance, and other mentoring functions have the potential to facilitate creation of better working conditions for one's self or appreciation of the work environment, dealing with one's employees and taking decisions in a better way, thereby enhancing extrinsic satisfaction. Considering the above literature, we hypothesize that:

> Hypothesis 1: Entrepreneurial mentoring is positively related to the self-efficacy of entrepreneurs.
> Hypothesis 2: Entrepreneurial mentoring positively predicts (a) satisfaction of the need for autonomy (b) intrinsic work satisfaction, (c) extrinsic work satisfaction, and the (d) intention to stay in self-employment.

The Role of Self-Efficacy

It has been suggested that prospecting entrepreneurs should be supported to develop their self-efficacy given their limited experience and knowledge of the entrepreneurial process (Ahsan et al., 2018). Mentoring not only supports them to develop the entrepreneurial self-efficacy but also facilitating the process of transiting into entrepreneurship and building their identity as entrepreneurs (Ahsan et al., 2018; Newbery et al., 2018). In line with the Social Cognitive Career Theory (Hackett and Lent, 1992; Lent and Brown, 2013), entrepreneurial self-efficacy develops from entrepreneurial socialization or learning occurring through education, training, and experiences that enhance the skills and mastery experiences of novice entrepreneurs. In a number of studies, individuals who have undertaken entrepreneurial training formally or informally have reported higher levels of entrepreneurial self-efficacy (Ho et al., 2018; St-Jean and Tremblay, 2020). However, this may be dependent on the protégés' learning orientation (St-Jean et al., 2018). Nonetheless, self-efficacy is in turn associated with career outcomes including commitment to goal-directed behavior, performance, satisfaction and wellbeing (Lent and Brown, 2008, 2013). In the entrepreneurship field, self-efficacy determines several entrepreneurship behaviors and outcomes including creativity, innovativeness, and performance (McGee and Peterson, 2019). We posit that self-efficacy not only determines attainment of objective outcomes of entrepreneurship, but also the subjective and intangible outcomes in different ways.

Self-efficacy, also referred to as confidence (Luthans, 2002; Luthans et al., 2015) is the subjective evaluation of one's own abilities to perform a specific task in a given context (Bandura, 1997; Luthans and Peterson, 2002). It includes mobilizing cognitive resources, motivation, and taking required steps in executing the given task (Stajkovic and Luthans, 1998; Luthans and Peterson, 2002; Luthans et al., 2007c). People are not only attracted to but also achieve more in activities or careers where their efficacy is higher (Forbes, 2005).

Although some researchers have demonstrated that high levels of entrepreneurial self-efficacy harms business success (Jain and Ali, 2013; Artinger and Powell, 2016; Baron et al., 2016b), entrepreneurship is highly challenging and risky and hence requires sufficient amounts of psychological resources (Baron et al., 2016a). As a psychological resource, self-efficacy is useful in recognizing opportunities and soliciting resources for a start-up (Boyd and Vozikis, 1994; Dimov, 2010; Culbertson et al., 2011). Previous research has also shown that self-efficacy is related to lower fear of failure and reduced risk perception (Krueger and Dickson, 1994; Goel and Karri, 2006) and boosts likelihoods of persistence (Cardon and Kirk, 2015). Persistence in challenging activities or careers is mainly a function of self-efficacy (Goel and Karri, 2006; Dimov, 2010; Bullough et al., 2014).

Self-efficacy also enhances entrepreneurial outcomes through its usefulness in resolving conflicts with stakeholders to the business (Zou et al., 2016), business leadership, decision making, and risk management (Kuratko, 2007; Mattare, 2008). Moreover, self-efficacy tends to boost job satisfaction and wellbeing (Karademas, 2006; Duggleby et al., 2009; Skaalvik and Skaalvik, 2014). Self-efficacy is associated with work success (Judge et al., 2001; Luthans et al., 2006), both intrinsically and extrinsically which consequently translates into extrinsic and intrinsic work satisfaction. Self-efficacy further boosts the intrinsic aspect through its role in facilitating persistence and dealing with difficulties (Yakın and Erdil, 2012), which are important in entrepreneurship. The confidence boost arising from entrepreneurial mentoring should not only translate into performance, but also the ability to make independent decisions and undertake autonomous action, i.e., satisfying the need for autonomy, but also satisfaction with one's work and the desire to continue working in the entrepreneurship role. Previous research has already indicated that entrepreneurial mentoring impacts the satisfaction and retention of novice entrepreneurs through self-efficacy (St-Jean and Mathieu, 2015). In the present study, we examine these claims in the context of a less developed country, and also focus on more intangible outcomes.

> Hypothesis 3: Self-efficacy mediates the relationship between entrepreneurial mentoring and (a) satisfaction of the need for autonomy (b) intrinsic work satisfaction, (c) extrinsic work satisfaction, and (d) intention to stay in self-employment.

Gender Differences

There is a big gender gap in entrepreneurship (Guzman and Kacperczyk, 2019). This is not only true regarding the number of women going into entrepreneurship but also in terms of success and persistence (Smith and Tolbert, 2018; Oppedal and Garcia, 2019) and is more pronounced in high-growth ventures (Scott and Shu, 2017). Moreover, even efforts to improve entrepreneurial outcomes tend to be more successful among men than women due to several constraints including time and low credit (Oppedal and Garcia, 2019). This could limit the possible positive effects of entrepreneurial mentoring and self-efficacy on women's entrepreneurial success. This may not be limited to entrepreneurial situations only, as students' perceptions of mentoring generally seem to be gendered, with females seeking more of psychological and emotional support (Deale et al., 2020).

The business environment is certainly gendered, both culturally and socially (Bruni et al., 2005), with males dominating entrepreneurial platforms. In this direction, Marlow and McAdam (2013) argue that even reports of underperformance of female-owned enterprises represent a gender bias in entrepreneurship debates, given that small enterprises tend to have low performance levels. Given these dynamics, we investigate whether men and women benefit from mentoring equally, in relation to the realization of intangible entrepreneurial outcomes. Contrary to the idea that women are underprivileged in the business environment, women tend to have a higher drive to succeed and persist in business given the opportunity offers it for work-family balance (Baron and Henry, 2011). Moreover, entrepreneurship has been found to enhance women's empowerment, self-drive, and autonomy (Apitzsch, 2003; Datta and Gailey, 2012; Zgheib, 2018). Consequently, women may report higher work satisfaction and need to stay in self-employment.

It has been observed that low self-efficacy is one of the barriers to women's engagement in more lucrative business industries (Wieland et al., 2019). However, when women in mentoring programs are fully committed to their ideas, they are likely to achieve similar results as their male counterparts especially in terms of venture financing and commercialization (Scott and Shu, 2017). Although this shows that men and women could benefit equally from entrepreneurial mentoring, it is more possible if all factors such as gender roles, access to resources, and social cultural constraints are kept constant for both males and females. In contexts where gender roles are emphasized, for example the orientation of males toward competition, men are more likely to benefit from entrepreneurial mentoring (Bergman et al., 2011). Moreover, in formal mentoring, it seems only women with higher confidence tend to go into entrepreneurial mentoring programs (Bergman et al., 2011). The situation could even be more skewed in favor of men in informal mentoring, given that entrepreneurial spaces are dominated by men. Consequently, there fewer female role models and mentors that prospecting or nascent female entrepreneurs can learn from. On the positive side, it has been demonstrated that self-efficacy has stronger effect on girls' entrepreneurship interest (Kickul et al., 2008). In addition, it remains questionable if women receiving the same level of mentoring and perceiving a comparable amount of self-efficacy as men report the same level of entrepreneurial outcomes? In this regard, we hypothesize that:

> Hypothesis 4: The direct effects of entrepreneurial mentoring on (a) satisfaction of the need for autonomy (b) intrinsic work satisfaction, (c) extrinsic work satisfaction, and (d) intention to stay in self-employment are stronger for men than for women.
>
> Hypothesis 5: The indirect effects of entrepreneurial mentoring on (a) satisfaction of the need for autonomy (b) intrinsic work satisfaction, (c) extrinsic work satisfaction, and (d) intention to stay in self-employment via self-efficacy are stronger for men than for women.

TABLE 1 | Descriptive statistics and correlations among study variables.

Variables	Mean	(Min, Max.)	SD	1	2	3	4	5	6	7
Sex										
Entrepreneurial mentoring	3.13	(1, 5)	0.99	0.16*	(0.94)					
Self-efficacy	4.16	(1, 6)	0.75	0.28***	0.55***	(0.74)				
Satisfaction of need for autonomy	2.72	(1, 4)	0.76	0.29***	0.63***	0.64***	(0.78)			
Intrinsic work satisfaction	3.77	(1, 5)	0.65	−0.28***	0.35***	0.32***	0.22**	(0.77)		
Extrinsic work satisfaction	3.73	(1, 5)	0.75	−0.30***	0.18*	0.34***	0.22**	0.75***	(0.77)	
Intention to stay in SE	2.97	(1, 5)	0.98	0.20**	0.61***	0.55***	0.61***	0.35***	0.20**	(0.89)

$^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. Gender (Female = 1, Male = 0). Cronbach's α in diagonal parenthesis.

TABLE 2 | Moderated mediation effects of mentoring on intangible entrepreneurial outcomes.

	Self-efficacy			Satisfaction of need for autonomy			Intrinsic work satisfaction			Extrinsic work satisfaction			Intention to stay in self-employment		
	B	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***
Age	0.17**	0.06	(0.04, 0.30)	0.02	0.05	(−0.07, 0.12)	−0.01	0.07	(−0.14, 0.12)	0.01	0.07	(−0.13, 0.14)	0.07	0.06	(−0.05, 0.19)
Mentoring	0.46***	0.04	(0.37, 0.54)	0.40***	0.04	(0.31, 0.48)	0.06	0.07	(−0.07, 0.19)	−0.26***	0.07	(−0.39, −0.12)	0.57***	0.06	(0.45, 0.69)
Self-efficacy				0.39***	0.06	(0.28, 0.50)	0.47***	0.09	(0.29, 0.64)	0.89***	0.09	(0.71, 1.07)	0.60***	0.08	(0.43, 0.76)
Gender				0.15*	0.06	(0.03, 0.27)	−0.47***	0.08	(−0.63, −0.30)	−0.61***	0.09	(−0.78, −0.44)	0.25**	0.08	(0.10, 0.40)
Mentoring X Gender				−0.49***	0.08	(−0.66, −0.32)	0.30*	0.13	(0.04, 0.56)	0.42**	0.14	(0.16,0.69)	−0.29*	0.12	(−0.53, −0.05)
Self-efficacy X Gender				0.50***	0.11	(0.28, 0.71)	−0.51***	0.18	(−0.86, −0.16)	−0.85***	0.19	(−1.21, −0.48)	0.35*	0.17	(0.02, 0.68)
Model statistics	R^2 = 0.44, F(2, 186) = 72.77***			R^2 = 0.72, F(6, 182) = 78.82***			R^2 = 0.31, F(6, 182) = 13.40***			R^2 = 0.43, F(6, 182) = 22.61***			R^2 = 0.73, F(6, 182) = 81.66***		
ΔR^2 (for Mentoring X Gender)				ΔR^2 = 0.02, F(1, 182) = 5.49*			ΔR^2 = 0.02, F(1, 182) = 5.49*			ΔR^2 = 0.03, F(1, 182) = 9.76*			ΔR^2 = 0.01, F(1, 182) = 5.73*		
ΔR^2 (for Self-efficacy X Gender)				ΔR^2 = 0.03, F(1, 182) = 8.11**			ΔR^2 = 0.03, F(1, 182) = 8.11**			ΔR^2 = 0.06, F(1, 182) = 20.44***			ΔR^2 = 0.01, F(1, 182) = 4.35*		
Conditional effects of mentoring				***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***
Female				0.66***	0.07	(0.53, 0.80)	−0.11	0.09	(−0.29, 0.08)	−0.49***	0.10	(−0.68, −0.29)	0.73***	0.09	(0.56, 0.90)
Male				0.17**	0.05	(0.08, 0.27)	0.20	0.09	(0.02, 0.37)	−0.07	0.10	(−0.25, 0.12)	0.44***	0.08	(0.27, 0.61)
Conditional effects of self-efficacy				***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***	***B***	***SE***	***CI(LL, UL)***
Female				0.12	0.08	(−0.04, 0.28)	0.75***	0.15	(0.44, 1.05)	1.35***	0.16	(1.03, 1.66)	0.40**	0.14	(0.12, 0.69)
Male				0.62***	0.07	(0.47, 0.76)	0.24*	0.10	(0.05, 0.43)	0.50***	0.10	(0.31, 0.70)	0.76***	0.09	(0.58, 0.93)
Conditional indirect effects				***B***	***Boot SE***	***Boot CI (LL, UL)***	***B***	***Boot SE***	***Boot CI (LL, UL)***	***B***	***Boot SE***	***Boot CI (LL, UL)***	***B***	***Boot SE***	***Boot CI (LL, UL)***
Female				0.05	0.03	(−0.01, 0.12)	0.33	0.06	(0.22, 0.45)	0.59	0.08	(0.43, 0.74)	0.18	0.05	(0.08, 0.28)
Male				0.28	0.04	(0.20, 0.36)	0.10	0.05	(0.02, 0.19)	0.22	0.06	(0.11, 0.34)	0.33	0.06	(0.20, 0.45)
Index of moderated mediation				***B***	***Boot SE***	***Boot CI (LL, UL)***	***B***	***Boot SE***	***Boot CI (LL, UL)***	***B***	***Boot SE***	***Boot CI (LL, UL)***	***B***	***Boot SE***	***Boot CI (LL, UL)***
Gender				0.23	0.05	(0.12, 0.33)	−0.23	0.07	(−0.36, −0.10)	−0.37	0.09	(−0.54, −0.20)	0.15	0.07	(0.01, 0.29)

$^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. Gender (Female = 1, Male = 0).

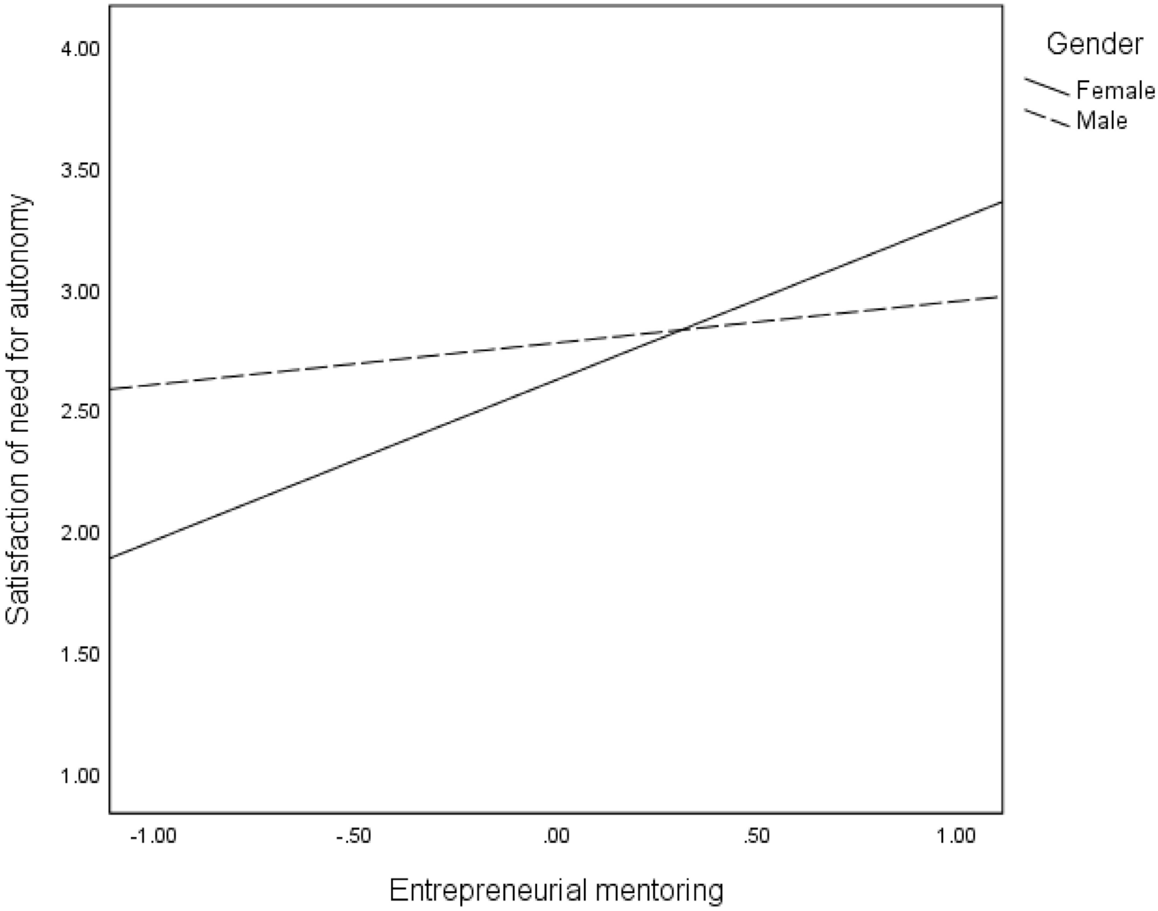

FIGURE 2 | Effects of entrepreneurial mentoring on satisfaction of need for autonomy for females and males.

MATERIALS AND METHODS

Participants and Procedure

The sample comprised of 188 (86 females, 102 males) young business owners in Uganda's capital, Kampala. These were young people who had recently graduated from high school, technical/vocational colleges, and universities; and are engaged in self-employment. Participants were recruited through youths' business forums, while others were approached at their business premises and requested to participate in the survey. The survey questionnaires were administered through the paper and pencil method. Participants were aged 17 to 30 years (M = 24.72, SD = 7.99). Given that participants were young and recently graduated from school, their businesses were nascent. The average time participants had spent in business was 2.58 years (SD = 0.99) with only 3.19% reporting that they have been in business for 5 or more years. Most of the participants were graduates of universities or technical colleges, with 51.6% being degree holders and 22.34% having ordinary and advanced certificates in technical or vocational studies. It was also observed that 40.43% had studied business related courses.

Measures

Mentoring was measured using the entrepreneurial mentoring questionnaire in Baluku et al. (2019a). Only 10 most valid items assessing the level to which an individual has had access to different aspects of entrepreneurial mentoring during the last year on a 5-point Likert type scale; 1 (never) to 5 (always). The items included (1) Someone has encouraged to discuss how I feel about ability to succeed in self-employment; (2) Someone has encouraged to discuss with him or her my honest feelings and business experiences; (3) Someone has helped me to explore realistic ways for achieving my business objectives; (4) I have been provided with practical suggestions for succeeding in business; (5) Someone has expressed his or her own confidence in my ability to succeed in business; (6) Someone has used his or her own personal experience to explain how I can achieve career and financial success in business; (7) Someone has guided me to explore my personal strengths that can be useful to doing business; (8) In interactions with mentors and role models, I have been offered recommendations on how to improve my business acumen; (9) I have been guided on how to assess business opportunities; and (10) I have had help developing better coping

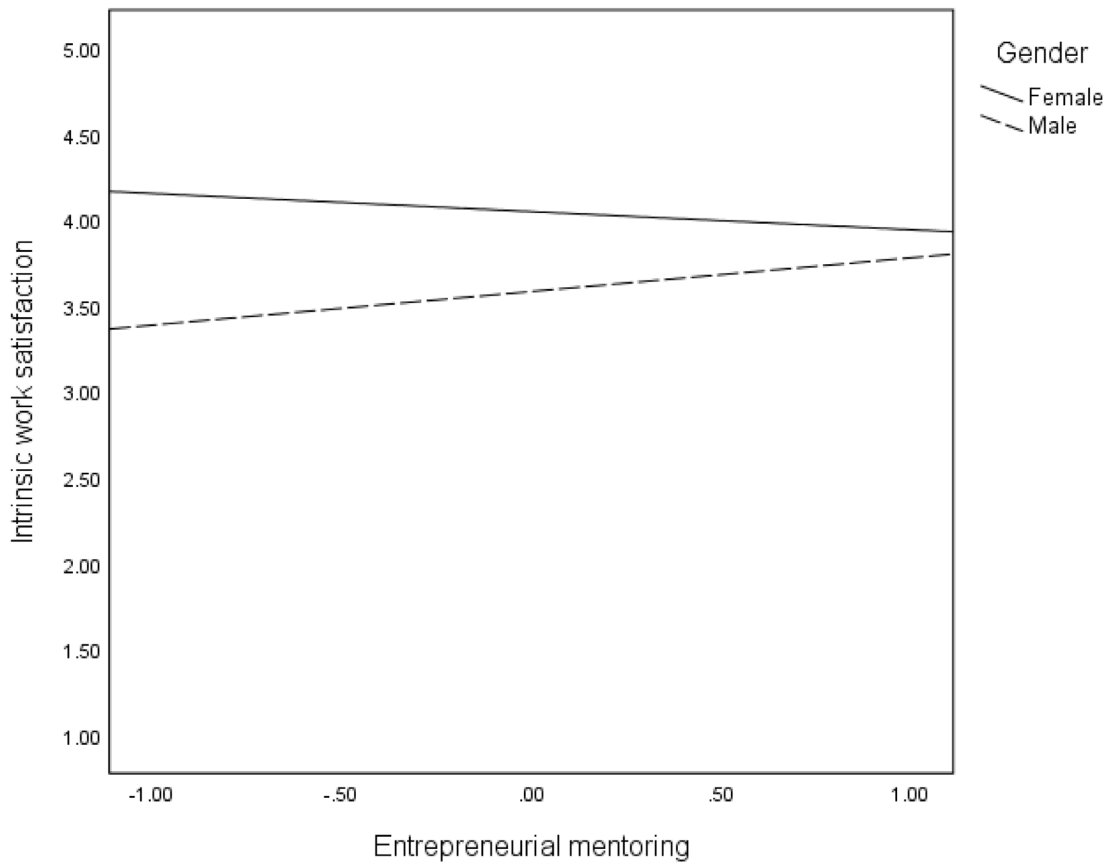

FIGURE 3 | Effects of mentoring on intrinsic work satisfaction for females and males.

strategies when I have not achieved my business goals. These items showed high internal consistency (α = 0.93).

To measure ***Self-Efficacy***, we adapted items from the Psychological Capital Questionnaire – (Luthans et al., 2007a). Participants indicated their degree of agreement with three statements (I feel confident in analyzing the problems of business to find solutions; I feel confident in presenting my business and ideas in different business forum; I feel confident presenting information to a group of business colleagues). The items were rated on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly disagree), and showed an acceptable level of internal consistency (α = 0.74).

To measure ***Satisfaction of the Need for Autonomy***, we adopted the short measure from Deci and Ryan's Basic Psychological Needs Scale (Samman, 2007; 464–465). The scale is comprised of three items measured on a 4-point scale from 1 (not at all true) to 4 (completely true). A sample item is "I feel like I can pretty much be myself in daily situations." The reliability of this scale in the present study was α = 0.78.

Work Satisfaction was measured using items from the revised short form of the Minnesota satisfaction questionnaire (Hirschfeld, 2000). Participants were asked to indicate the level of satisfaction with the different aspects of their work. We measured both intrinsic and extrinsic aspects of work satisfaction. Intrinsic work satisfaction was measured with items 7, 9, 11, 15, 16, and 20; while extrinsic work satisfaction was measured with items 5, 6, 8, and 17. The remaining items were dropped because of low loading during factor analysis. Sample items are "the feeling of accomplishment I get from the job" for intrinsic satisfaction; and "The way my job provides for steady employment" for extrinsic satisfaction. The items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items showed a good level of internal consistency at α = 0.77 for both intrinsic and extrinsic work satisfaction.

To measure the ***Intention to Stay in Self-Employment***, we adapted four (4) of the six (6) items from the career commitment scale (Blau, 1985, 1988). The scale measures an individual's level of commitment or readiness to change his/her occupation. In the present study, we adapted the scale to measure commitment to continue in the self-employment occupation. The adapted items include (1) I want to make a long career in self-employment; (2) If I had all the money needed, I would still want to be self-employed; (3) I like my career in self-employment too well to give it up; and (4) Self-employment is ideal vocation for a life work. These items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and showed a good level of internal consistency at α = 0.89.

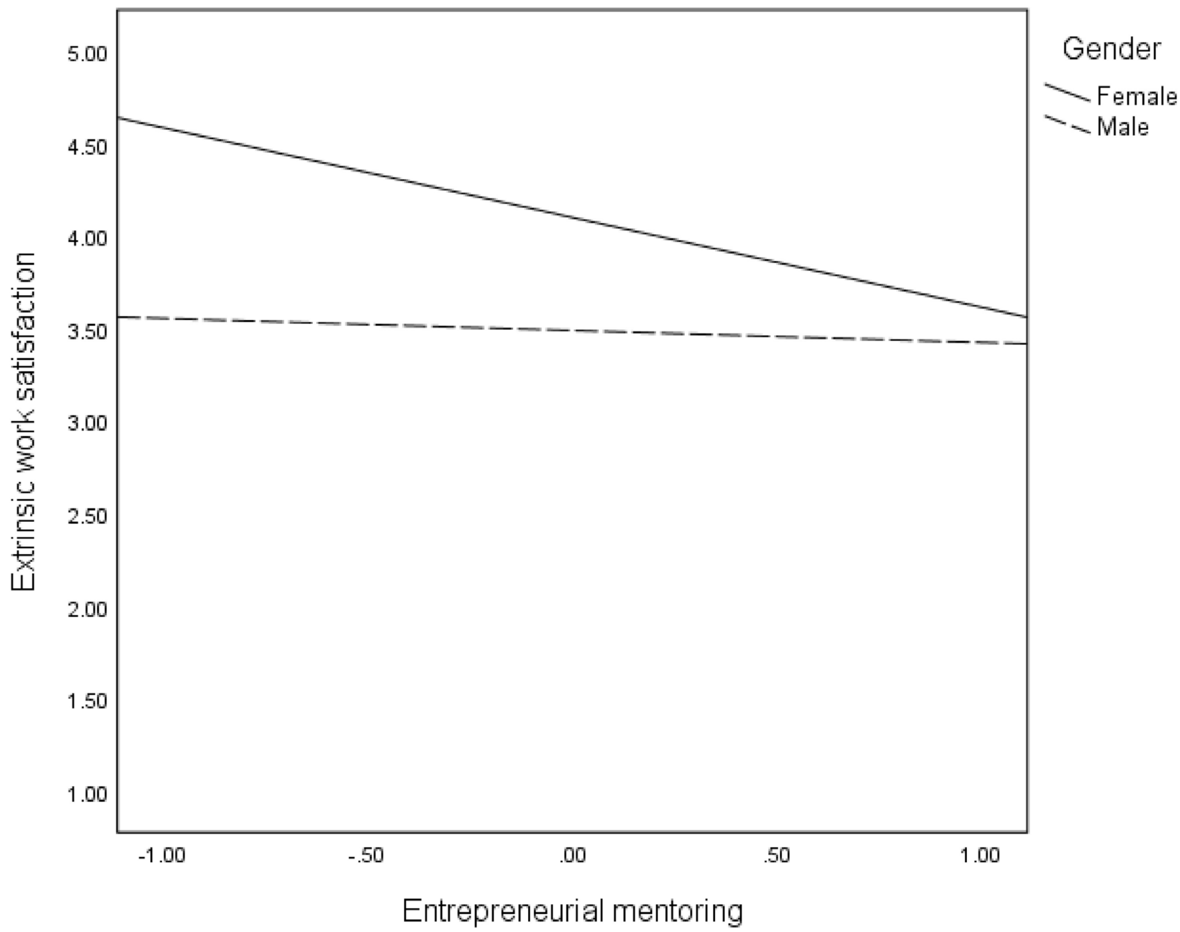

FIGURE 4 | Effects of mentoring on extrinsic work satisfaction for females and males.

Analytic Strategy

We used the PROCESS macro version 3.4 (Nathan and Scobell, 2012) to test our hypotheses. We applied model 15 of the PROCESS macro, which computes for the moderation mediation effects simultaneously. Hence, entrepreneurial mentoring was entered as the focal predictor, self-efficacy as the mediator, gender (Female = 0, Male = 1) as the moderator. We computed a different model for each outcome variable (i.e., satisfaction of need for autonomy, work satisfaction, and intention to stay in self-employment). In each regression model, we controlled for the effects of age because it tends to affect entrepreneurial outcomes, and particularly psychological outcomes such as wellbeing (Baron et al., 2016a). In addition, we applied sample bootstrapping at 5,000 in line with Hayes' (2013) recommendation. Common methods bias is one of the challenges in behavioral surveys that might arise from item characteristic effects, item context effects, and measurement context (Podsakoff et al., 2003). To rule out the common methods bias concern for our study, we used Harman's single factor test and total variance of the single factor was 35%, suggesting that the variance in the variables was accounted for by several factors. Hence, common methods bias was not a concern for this study. However, this method has been criticized as insufficient (Podsakoff et al., 2003; Chang et al., 2010). In addition, the variance inflation factors ranged from 1.06 to 1.62 which are within the acceptable limits (Hair et al., 2011), hence our data had no collinearity concerns to worry about despite the high correlations between some of the variables.

RESULTS

Correlations among study variables and descriptive statistics are presented in **Table 1**. The moderated mediation regression results are reported in **Table 2**. The findings showed support for our first hypothesis that entrepreneurial mentoring is positively associated with entrepreneurs' self-efficacy ($B = 0.46$, $p < 001$). In addition, the control variable (age) was positively related to self-efficacy ($B = 0.17$, $p < 01$) but not with the intangible entrepreneurial outcomes. The moderator variable (gender) had substantial effects on all three outcomes: satisfaction of the need for autonomy ($B = 0.15$, $p < 05$), intrinsic work satisfaction ($B = -0.47$, $p < 001$), extrinsic work satisfaction ($B = -0.61$, $p < 001$) and the intention to stay in self-employment ($B = 0.25$, $p < 01$). The negative association between gender and work

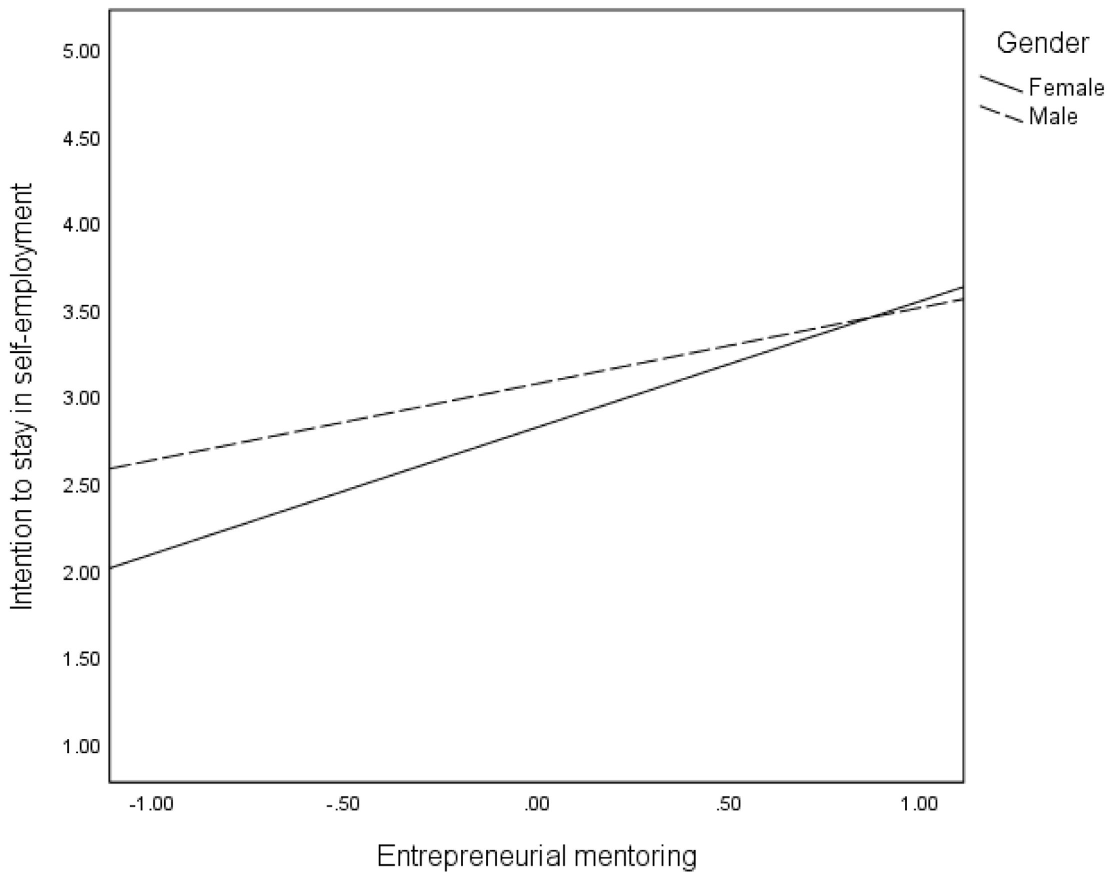

FIGURE 5 | Effects of mentoring on intention to stay in self-employment for females and males.

satisfaction implies that women were more satisfied with their work than their male counterparts.

We further proposed in Hypothesis 2 that mentoring predicts intangible entrepreneurial outcomes including (a) satisfaction of need for autonomy, (b) work satisfaction, and the (c) intention to stay in self-employment. The findings revealed significant positive associations of mentoring with satisfaction of need for autonomy (B = 0.40, p < 001) and intention to stay in self-employment (B = 0.57, p < 001). Whereas mentoring had insubstantial effects on intrinsic work satisfaction, it was negatively associated with extrinsic work satisfaction ($B = -0.26$, $p < 0.001$). The insignificant association of mentoring and intrinsic work satisfaction suggests that this relationship was fully mediated by self-efficacy; or what is also known as indirect-only mediation (Zhao et al., 2010). On the other hand, self-efficacy had positive effects on all the intangible entrepreneurial outcomes: satisfaction of need for autonomy ($B = 0.39$, $p < 0.001$, intrinsic work satisfaction ($B = 0.47$, $p < 0.001$), extrinsic work satisfaction ($B = 0.89$, $p < 0.001$), and intention to stay in self-employment ($B = 0.60$, $p < 0.001$). In support of Hypothesis 3, our results show that self-efficacy mediated the association between mentoring and the three intangible outcomes as reflected in the indices of the moderated mediation: satisfaction of need for autonomy (B = 0.23, *Boot CI* = 0.12, 0.33), intrinsic work satisfaction ($B = -0.23$, *Boot CI* = −0.36, −0.10), extrinsic work satisfaction ($B = -0.37$, *CI* = −0.54, −0.20), and intention to stay in self-employment (B = 0.15, *Boot SE* = 0.01, 0.29).

We proposed that the direct effects (Hypothesis 4) of mentoring on the three intangible outcomes are moderated by gender. The findings in **Table 2** revealed significant interaction effects of mentoring and gender on all intangible entrepreneurial outcomes: satisfaction of need for autonomy ($B = -0.49$, p < 001), intrinsic work satisfaction ($B = 0.30$, $p < 0.05$), extrinsic work satisfaction ($B = 0.42$, $p < 0.01$), and intention to stay in self-employment (B = −29, p < 05). These interaction effects are reflected in the regression plots in **Figures 2–5**. As can be seen in **Figures 2**, **5** and from the corresponding conditional effects of mentoring in **Table 2**, satisfaction of the need for autonomy and intention to stay in self-employment were lower for females than males at low levels of mentoring. The trend reversed at high levels of mentoring such that satisfaction of the need for autonomy and intention to stay in self-employment for females were higher than for males. The trend seems to be different when it comes to the intrinsic and extrinsic aspects of work satisfaction. Concerning the intrinsic aspect (**Figure 3**), females reported higher satisfaction than males, which remained quite the same at all levels of mentoring. However, intrinsic work satisfaction for males tended to move closer to that of females at higher levels

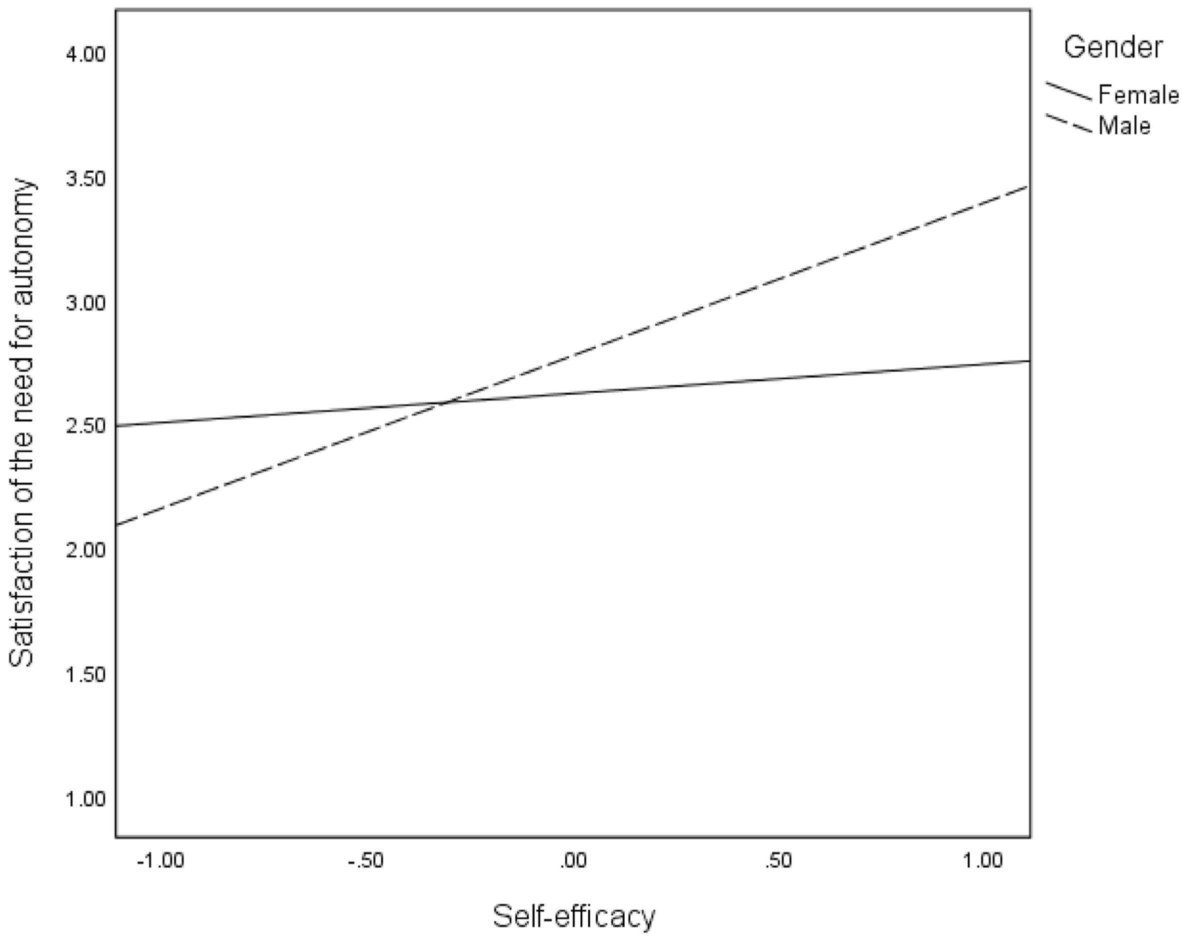

FIGURE 6 | Effects of self-efficacy on satisfaction of need for autonomy for females and males.

of mentoring. Whereas females report generally high levels of extrinsic satisfaction that males, the satisfaction tends to lower at high levels if mentoring while that of males remains unchanged at all levels of mentoring (**Figure 4**).

In hypothesis 5, we proposed that indirect effects of mentoring on intangible entrepreneurial outcomes are moderated by gender. The interactive effects of self-efficacy and gender were significant for all the intangible entrepreneurial outcomes: satisfaction of the need for autonomy ($B = 0.50$, $p < 001$), intrinsic work satisfaction ($B = -0.51$, $p < 001$), extrinsic work satisfaction ($B = -0.85$, $p < 0.001$) and intention to stay in self-employment ($B = 0.35$, $p < 05$). The moderations are confirmed in the regression plots in **Figures 6–9**, as well as the conditional effects of self-efficacy in **Table 2**. Plots in **Figures 6**, **9** indicate that that males had substantially higher satisfaction of the need for autonomy and intention to stay in self-employment, respectively, than the females at high levels of self-efficacy. On the contrary, plots in **Figures 7**, **8** show that females reported a higher level of intrinsic and extrinsic work satisfaction than the males at high levels of self-efficacy.

The conditional indirect effects and indices of moderated mediation in **Table 2** confirmed Hypothesis 5. The indirect effects of mentoring through self-efficacy were moderated by gender for all three intangible entrepreneurial outcomes. The indirect effects on the satisfaction of the need for autonomy were significant for males ($B = 0.28$, *Boot CI* = 0.20, 0.36) and not for females. On the other hand, the indirect effects on intrinsic work satisfaction were significant for both females ($B = 0.33$, *Boot CI* = 0.22, 0.45) males ($B = 0.10$, *Boot CI* = 0.02, 0.19), although stronger for females. A similar trend is observed for extrinsic work satisfaction. Finally, the indirect effects on intention to stay in self-employment were significant for both males ($B = 0.33$, *Boot CI* = 0.20, 0.45) and females ($B = 0.18$, *Boot CI* = 0.08, 0.28), but stronger for males.

DISCUSSION

The present study highlights the role of entrepreneurial mentoring and self-efficacy in the attainment of intangible entrepreneurial outcomes. We argue that besides the development of entrepreneurial skills that lead to objective success, mentoring nascent entrepreneurs is directly and indirectly associated with their level of satisfaction of the need for autonomy, their work satisfaction (both intrinsic and extrinsic),

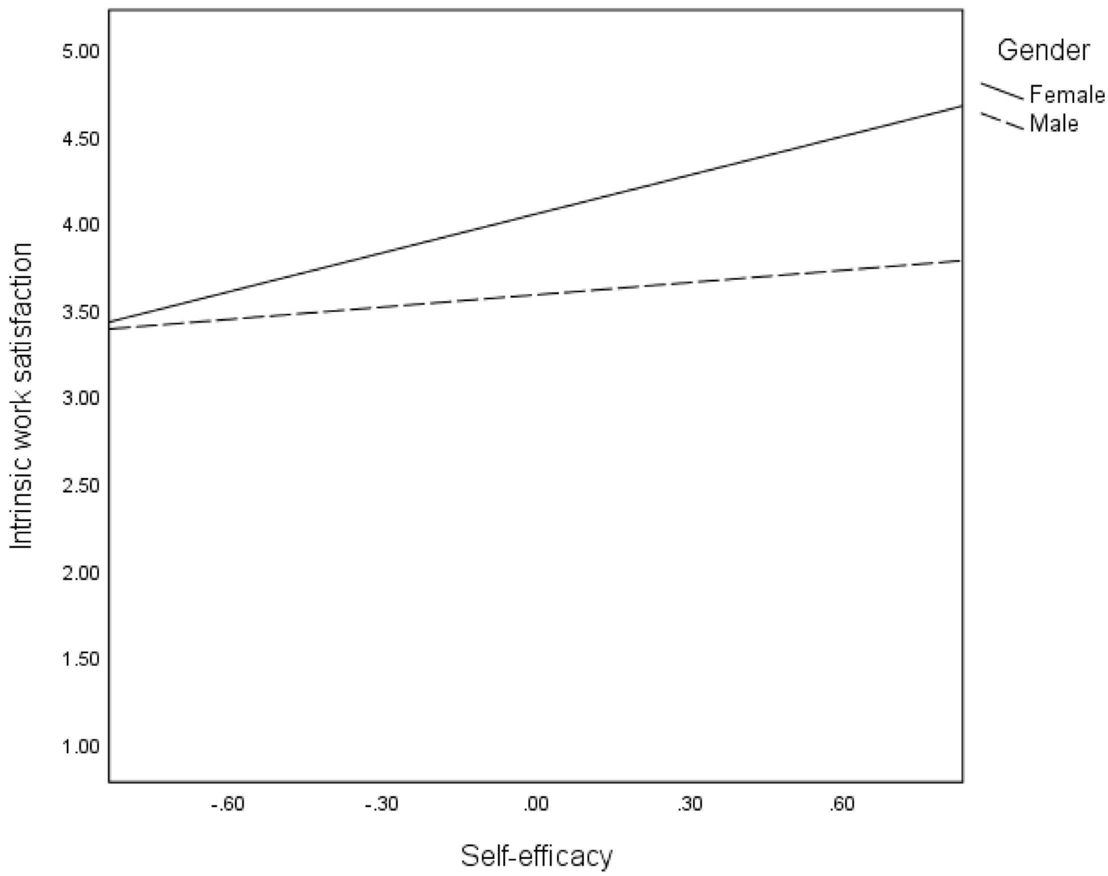

FIGURE 7 | Effects of self-efficacy on intrinsic work satisfaction for females and males.

and consequently the desire to stay in self-employment. Individuals seek different goals by engaging in entrepreneurial activities; hence success indicators are not uniform among entrepreneurs. The subjective aspects of success could be as important as the objective aspects given that they present what the entrepreneurs themselves value (Dej and Gorgievski, 2012; Wach et al., 2016). Moreover, because today's careers tend to be value driven (Hall, 2002), intangible and more especially intrinsic outcomes become enormously important (Otto et al., 2017). Therefore, entrepreneurial support efforts including mentoring should be directed toward attainment of not only the objective but also the subjective outcomes.

Entrepreneurial mentoring plays an important role in enterprise growth and success through problem identification, providing solutions, information and emotional support, persuasion, and many other functions (Cull, 2006; St-Jean, 2012; Radu Lefebvre and Redien-Collot, 2013). Our results suggest that these different forms of support help in the development of entrepreneurs' general self-efficacy as well as the achievement of some of the intangible entrepreneurial outcomes. Through practical learning and guidance from experienced entrepreneurs, the novice entrepreneurs acquire the ability to make independent decisions, become more creative, innovative, more alert to opportunities. These consequently support the realization of different goals including the need for autonomy and work satisfaction. Yet attainment of such intrinsic goals, in line with self-determination theory (Deci et al., 2001), can stimulate the desire to stay in self-employment.

The findings of the present study further extend our theoretical understanding of how mentoring results in entrepreneurial success and persistence. First, our results build on the entrepreneurial socialization approaches (Starr and Fondas, 1992; St-Jean, 2012; Man, 2019) which highlight that entrepreneurial competencies are developed through education and training. Our study further builds on the Social Cognitive Career Theory (Hackett and Lent, 1992; Lent and Brown, 2013) and self-efficacy theory (Stajkovic and Luthans, 1998; Bandura, 2010) which emphasize that self-efficacy is one of the competencies that are strengthened by learning and yet is an important predictor of career outcomes including satisfaction and persistence. Supporting these assumptions, our findings demonstrated that self-efficacy is an important underlying mechanism through which mentoring fosters entrepreneurial outcomes. In the field of entrepreneurship, however, it has been suggested that the learning goal orientation of the protégé as well as the match in characteristics of the mentor and mentee are important for improving entrepreneurial self-efficacy of a novice entrepreneur (St-Jean et al., 2018). In general, however,

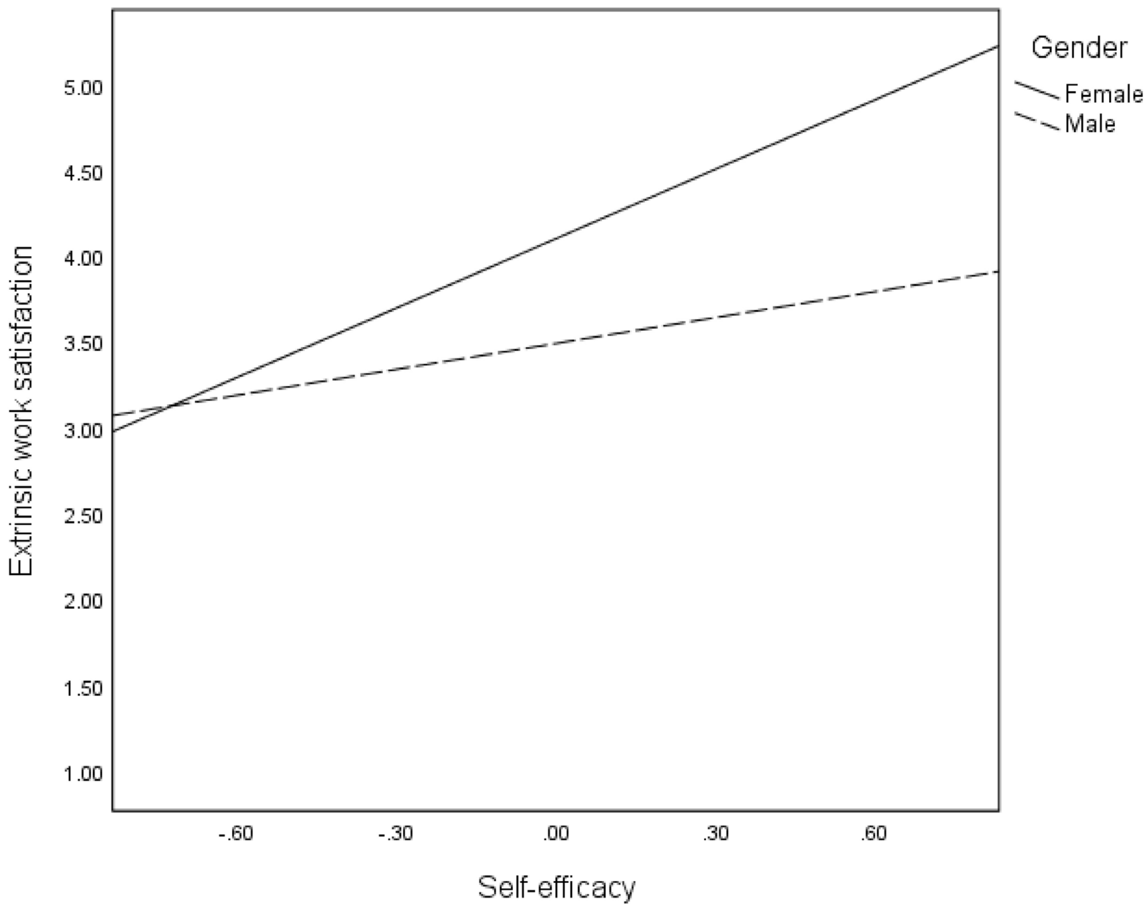

FIGURE 8 | Effects of self-efficacy on extrinsic work satisfaction for females and males.

whereas mentoring improves entrepreneurs' skills to perform entrepreneurial tasks including business planning, identifying opportunities, resources mobilization and management, such empowerment does not necessarily imply that individuals will engage in these tasks with the desired level of effort. But it helps when entrepreneurial mentoring alongside developing these competencies also enhances psychological resources, specifically self-efficacy, which then becomes a driver for the application of the skills acquired and persistence in entrepreneurial actions.

Our findings further contribute to the literature on the role of gender in entrepreneurship and entrepreneurial socialization. Extant literature shows that there are gender differences in involvement and persistence in entrepreneurial activities (Scott and Shu, 2017; Smith and Tolbert, 2018; Guzman and Kacperczyk, 2019; Oppedal and Garcia, 2019). In the present study, we sought to contribute to this domain in the entrepreneurial literature by establishing whether men and women benefit equally from entrepreneurial mentoring and self-efficacy in terms of achieving intangible outcomes of entrepreneurship. Our findings reveal three but interrelated issues. First, men reported higher satisfaction of the need for autonomy and intention to stay in self-employment as well as higher level of self-efficacy, while women reported higher levels of both intrinsic and extrinsic work satisfaction. This implies that men tend to achieve a higher level of independence in work when engaged in an entrepreneurial activity. This independence may stimulate the commitment to self-employment in line with the assumptions of the self-determination theory (Deci et al., 2001; García Calvo et al., 2010; Baluku et al., 2018b). This may not apply equally to women, especially in a cultural context that predominantly embraces collectivism and patriarchy. Hence, even when engaged in entrepreneurship, women may still be required to depend on their husbands or parents when it comes to making key decisions for the business. In this direction, previous research in this context has observed that for example husbands play an important role in women's entrepreneurial activity and performance (Wolf and Frese, 2018). Consequently, although women can be satisfied with their work, they may not necessarily achieve autonomy which might eventually also lower their intentions to stay in self-employment.

Second, and contrary to the above finding, the moderation effects of gender on the association between mentoring and intangible entrepreneurial outcomes reveal that the effect of mentoring on the satisfaction of the need for autonomy and intention to stay in self-employment is stronger for women. Hence, mentoring has the potential to enabling women

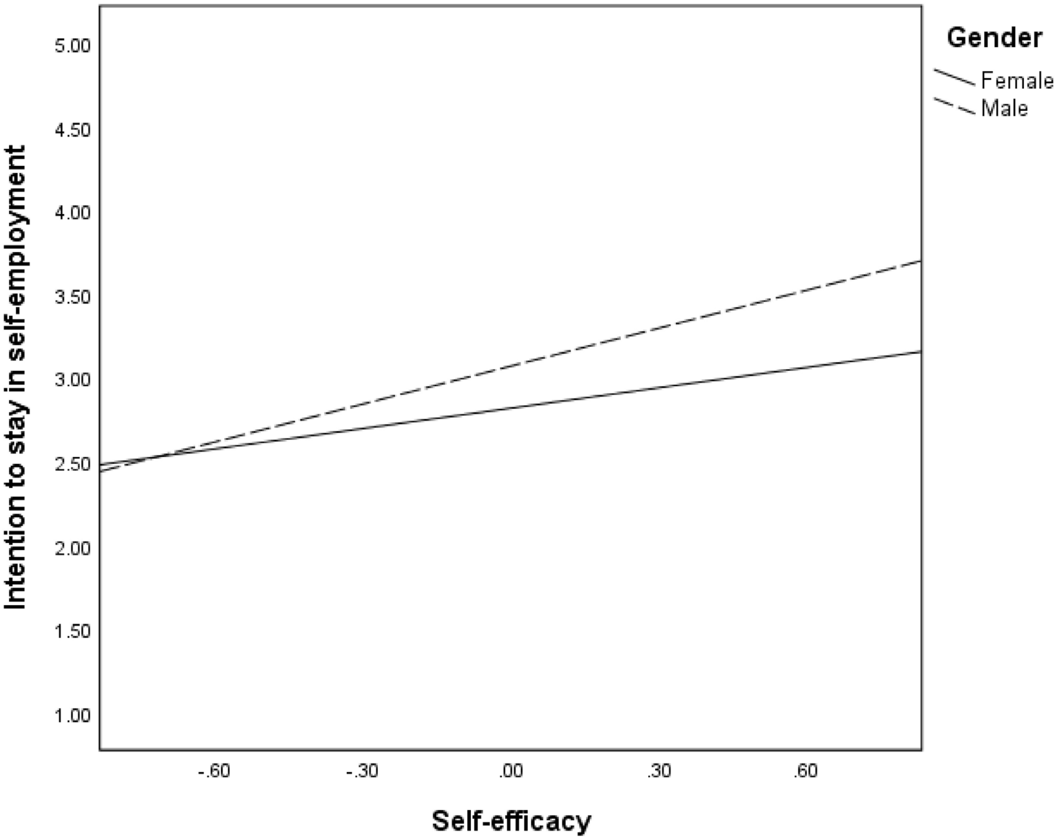

FIGURE 9 | Effects of self-efficacy on intention to stay in self-employment for females and males.

entrepreneurs to gain independence in their work as well as increasing their likelihoods to persisting in entrepreneurial activities for a longer time. Nonetheless, when considering self-efficacy, men still reported a higher level of satisfaction of the need for autonomy and intention to stay in self-employment. A similar pattern of findings is observed regarding the moderation effects of gender on the indirect effects of mentoring through self-efficacy. Although the changes in R^2 are quite low for most of our interaction effects, our findings suggest that men and women benefit from entrepreneurial mentoring differently. In relation to both intrinsic and extrinsic work satisfaction, women benefit more from mentoring if the mentoring process improves their self-efficacy. This is consistent with earlier findings suggesting that women could benefit more than men in entrepreneurial terms from self-efficacy (Kickul et al., 2008). Whereas men also benefit this way, the effects are stronger for women. Regression plots in **Figure 8** particularly show that improvement in self-efficacy in female could sharply improve their extrinsic work satisfaction. The mechanism of how this occurs needs to be explored further. However, in relation to satisfaction of the need for autonomy and intention to stay in self-employment, women benefit more directly from mentoring, while the benefits for men are higher if mentoring strengthens their self-efficacy. The dynamics causing these differences need to be explored, especially taking into consideration of the social and cultural context. Our results support previous research that has found moderated mediation effects of mentoring on entrepreneurial outcome variables such as entrepreneurial intention, via self-efficacy and moderated by gender (BarNir et al., 2011).

One possible explanation for the weak mediation effects of self-efficacy in the association between mentoring for women and particularly the satisfaction of the need for autonomy could be the overall low number of female entrepreneurial role models and mentors as well as the cultural aspect of patriarchy that may deny women the desired level of autonomy even when they have access to good entrepreneurship mentoring. However, having female role models and mentors does not necessary imply that females will benefit much more than when they have male role models and mentors (Goh et al., 2007). Future research should, therefore, investigate the success of entrepreneurial mentoring for women and men in different cultural contexts as well as how these cultural contexts influence different facets of entrepreneurial success among men and women entrepreneurs. In practical terms, entrepreneurial training and mentoring interventions, at least in the Ugandan context, need to focus on strengthening entrepreneurial self-efficacy of the protégés. Moreover, there is a need to design specific interventions – potentially even conducted by female role models – addressing the self-efficacy and autonomy issues among women entrepreneurs.

Limitations

Despite the theoretical and practical contributions discussed above, our study is not without limitations. First, we used cross-sectional data to test our hypotheses. Caused by the fact that mentoring, self-efficacy and the three intangible outcomes of entrepreneurship were measured at the same time, we cannot firmly claim that the intangible outcomes accrue from mentoring and self-efficacy. Moreover, our sample may not be representative of young entrepreneurs in less developed countries given that the study was conducted in one major city in Uganda. It should also be noted that changes in R^2 are quite small for most of the moderation effects. However, overall, our results are in line with previous studies that associated entrepreneurship education and training to the development of entrepreneurial self-efficacy and entrepreneurial outcomes (Nabi and Liñán, 2011; Nabi et al., 2017; Baluku et al., 2019b; Hahn et al., 2019). We recommend that future studies on the effectiveness of entrepreneurial mentoring and other learning approaches could benefit from longitudinal, cross-country, and probably multi-year studies given that entrepreneurial ecosystems that affect the effectiveness of mentoring vary across countries/cities and the amount of time required for protégés applying the acquired knowledge and skills and eventual attainment of entrepreneurial success. In addition, we measured informal mentoring. However, the possibility that some participants also had access to formal mentoring cannot be ruled out, yet we did not control for the effects of formal mentoring. Future studies could benefit from an effort to segregate the effects of the two forms of entrepreneurial mentoring.

Another potential limitation of the study relates to the use of self-report measures. This is in addition to our focus on only the subjective intangible outcomes of entrepreneurship. Subjective outcomes of entrepreneurial activities, specifically satisfaction, are linked to or affected by the performance level of the business (Cooper and Artz, 1995; Hmieleski and Corbett, 2008; Carree and Verheul, 2012). The shortcoming of the present study is that we did not control for the effect of firm performance on subjective outcomes. This also suggests that some of the subjective outcomes can also accrue not directly from entrepreneurship mentoring but indirectly through the impact of mentoring on facets of objective entrepreneurial success. It could be interesting for future research to use both objective and subjective measures as well as examining the possible mediation and moderating effects of objective success on the association between mentoring and subjective success indicators.

CONCLUSION

The present research has demonstrated the differential impact of mentoring on intangible outcomes of entrepreneurship among men and women. The study has also validated self-efficacy as an underlying mechanism for the realization of the impact of entrepreneurial mentoring. Consequently, this study contributes to the understanding of the effectiveness of entrepreneurship education and learning interventions among women and men in the context of a less developed country as well as in the cultural context of collectivism and patriarchy. In doing so, we were able to discover the gaps in the effectiveness of entrepreneurship mentoring and learning and make a call for interventions that strengthen the entrepreneurial self-efficacy and autonomy of novice entrepreneurs but particularly of novice women entrepreneurs which can be achieved by using successful women entrepreneurs and mentors.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

MB is the main author and was in charge of developing the manuscript and data collection. LM participated in the data collection and analysis as well as editing of the manuscript. KO participated in conceptualizing the data, data analysis, and editing of the manuscript. All authors contributed to the article and approved the submitted version.

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Separation From the Life Partner and Exit From Self-Employment

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The survival of businesses in the market often hinges on contributions of the business owner's household members. Partners of the self-employed as well as their children may, for example, provide emotional support but also cheap and flexible labor. Although the household composition of self-employed individuals has been analyzed in many earlier studies, little is known about what happens to the self-employed individual and his or her business when one separates from a life partner. We argue that separation from a life partner has profound financial and social consequences for the business owner. Specifically, we propose that a decrease in household income and social functioning (which is the degree of interference with social activities due to mental and/or physical problems) after separation from the life partner may lead to an exit from self-employment. Our empirical analysis draws on data from the longitudinal HILDA (Household, Income and Labour Dynamics in Australia) survey, for the period 2002–2017. Based on information from 4,044 self-employed individuals aged 18–64 years (18,053 individual-year observations), we find that separating from the life partner in the past year significantly increases the probability of exit from self-employment in the next year. Furthermore, we find that the positive association between separation from the life partner and exit from self-employment can be explained for 29.7% by a reduction in social functioning and for 10.7% by a reduction in household income. We study five exit routes out of self-employment and find that separation from the life partner mainly increases the probabilities of becoming a wage worker and of re-entering self-employment after experiencing an exit. For exit to unemployment or to a position outside the labor force (voluntarily inactive/retirement or any other non-labor force position), we find insignificant relationships with separation from the life partner. Furthermore, for all exit routes except retirement, we find significant indirect effects implying that decreased household income and levels of social functioning are important mechanisms through which separation from the life partner is related to exit from self-employment.

Keywords: exit, life partner, self-employment, social functioning, household income

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INTRODUCTION

Individuals from all countries and cultures commonly aspire sharing a lifelong dedicated relationship with an intimate partner (Halford and Snyder, 2012). Yet, such relationships do not always work out well and may end in a separation. A separation refers to a situation in which two life partners (i.e., a married or non-married couple) decide or arrange to stop living or being together as a couple.[1] Many studies have focused on the financial and social consequences for individuals after a separation from a life partner such as through divorce (Holmes and Rahe, 1967; Pai and Carr, 2010). This topic has gained more attention partly due to the significant increase in divorce rates over the past centuries. According to Eurostat (2019), the divorce rate in the European Union increased over the period 1965–2016, while the marriage rate decreased during the same period. A similar trend can be seen in the United States in the past century, although from 2000 onward, the divorce rate has declined somewhat due to millennials being pickier and marrying at an older age (Cohen, 2019). In Australia, the number of divorces per 1,000 Australian residents rose in the 1960s and 1970s and peaked at 4.6 after the introduction of the Family Law Act 1975. Thereafter, the divorce rate steadily decreased to 2.0 in 2017 (Australian Institute of Family Studies, 2020).

A separation or divorce is, in many cases, a negative and stressful event. Studies have identified the loss of emotional support, economic decline, and health problems as negative consequences of a separation (Amato, 2000; Poortman, 2000; McManus and DiPrete, 2001). While being married is positively associated with work effectiveness and work performance (Selmer and Lauring, 2011), divorces lead to a deterioration of living conditions, which might indirectly result in a reduction of an individual's performance at work (Hetherington et al., 1976). Interestingly, it has not been thoroughly studied whether and how the separation from a partner influences the performance of self-employed individuals. However, the self-employed tend to operate in highly uncertain business environments, and it is known that (*de facto*) relationships (such as marriage) offer them stability. Given the importance of the presence of a life partner for self-employed individuals, separations can be expected to have an impact on the self-employed's business. The self-employed represent an important and vital part of today's labor force (Van Stel and van der Zwan, 2019). Therefore, in light of the current demographic trend sketched above, studying the consequences of separation from the life partner for the self-employed and their businesses is highly relevant.

In this paper, we focus on whether the separation from a life partner is related to an exit from self-employment. Exit from self-employment is seen as an important process for business owners, as well as an important event for the economy, the industry, and related firms (DeTienne, 2010). Exit from self-employment can be defined as "the process by which the founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degree, from the primary ownership and decision-making structure of the firm" (DeTienne, 2010, p. 203). One may categorize exits from self-employment in several ways such as in terms of sale or liquidation (Wennberg et al., 2010), the (in)voluntary character of the exit (Coad, 2014), or what happens after an exit. The self-employed individual may end up in another labor market position after an exit (wage work and unemployment), (s)he may decide to set up a new business (becoming self-employed again) or may end up outside the labor force such as in retirement (Hessels et al., 2018). A growing body of literature recognizes the importance of exit from self-employment and studies this phenomenon to gain insights into what causes an exit (Wennberg et al., 2010).

Given the nature of a separation, its consequences are likely to be radical but also diverse. We investigate the roles of income and social functioning as mechanisms through which separation is related to an exit from self-employment. One of the main consequences frequently mentioned by individuals who separated from a life partner are the implications for one's financial situation such as through reduced household income (Poortman, 2000; McManus and DiPrete, 2001; Sevak et al., 2003; Andreß et al., 2006). Since one's financial situation may impact the possibility and decision to remain in self-employment with one's current business (Bird and Wennberg, 2016), we suspect that a separation may lead to an exit from self-employment because of a decline in household income.

Another main implication of separation is its social effect. Women who separated from their life partner through a divorce, for example, often mention to have problems with socialization and problems with feelings of failure as well as to experience feelings of shame (Bloom et al., 1978). Also, men who separated from their life partner through a divorce indicated experiencing emotional problems due to feelings of loneliness (Bloom et al., 1978). Furthermore, they felt that they were functioning less in both social and work situations (Hetherington et al., 1976). Perhaps even the most important social consequence for both men and women is the loss of emotional support from the partner (Amato, 2000). Based on these findings, we suspect that an individual's social functioning is affected negatively after a separation from a life partner. Reduced social functioning is likely to negatively affect the self-employed and their businesses. Having less social abilities tends to lead to poorer decision making (Bar-On et al., 2004). Similarly, having better social skills and a higher mental ability is found to be associated with higher salary levels (Ferris et al., 2001). Therefore, reduced social functioning as a consequence of separation from a life partner might be detrimental for the self-employed and eventually lead to an exit from self-employment.

The added value of this paper is at least twofold. First, this paper contributes to the growing body of literature on the event of an exit from self-employment or entrepreneurship. Such exits are found to have significant consequences for several actors. For example, there may be psychological consequences for the self-employed individual, cash-flows into the firm, competitive effects for the industry, and a redistribution of wealth in the (regional) economy (DeTienne, 2010). When taking the example of a divorce of a self-employed individual who is married in community of property, the divorce might result in a forced liquidation of the self-employed's business with subsequently the possible negative consequences for the self-employed individual, firm, industry, and economy. From a welfare economic point of view, the liquidation of the firm may be suboptimal for overall welfare. Gaining insights into the mechanisms between separation from the life partner and exit from self-employment may help to develop policies to counter negative welfare effects.

Second, this paper contributes to the literature on the economic consequences of a separation from a life partner. While

[1] Hence, separation does not refer to the death of a life partner.

many studies focus on the mental and physical consequences of the loss of a partner, the consequences of separating from a life partner for a self-employed individual have not yet been considered. Given the severe mental and physical consequences of a separation from a life partner (Menaghan and Lieberman, 1986; Lorenz et al., 2006), it is a valuable addition to study the possible subsequent economic consequences. With that, we move past the point of studying only the direct consequences of losing a partner and introduce a new direction for research focusing on the more down-stream consequences of a separation from the partner.

In the next sections, we review the relevant literature, and we formulate our hypotheses. We test these hypotheses using longitudinal data from the Household, Income and Labour Dynamics in Australia (HILDA) survey (Summerfield et al., 2019). In Australia, 9.6% of those active in the labor market were self-employed in 2018 (Organisation for Economic Co-operation and Development, 2020), and this percentage is relatively low compared to other OECD countries. However, according to the Global Entrepreneurship Monitor, the number of individuals actively engaged in starting and running new businesses is above the average of developed countries and similar to levels in the United States (Steffens and Omarova, 2019). The Global Entrepreneurship Monitor also indicates that many exits from self-employment in Australia are not failures, but rather represent successful business exits or better opportunities for the (formerly) self-employed individual. The results of our analysis are presented in the Results section, and they indicate that a separation from a life partner increases the probability of an exit from self-employment in the next year. This relationship can, for a substantive and significant part, be explained by a reduction in social functioning and, to a smaller extent, by a reduced household income. Results of additional (robustness) analyses are reported in the Section "Subsample Analyses and Robustness Check." In the Section "Discussion and Conclusion," we discuss the findings of our study as well as their implications and propose directions for future research.

THEORY AND HYPOTHESES

The Presence of a Life Partner and Self-Employment

Someone's family context is increasingly considered to be an important factor influencing someone's employment status, including being and remaining self-employed (Sanders and Nee, 1996; Bird and Wennberg, 2016). The role of the partner for becoming self-employed as well as the influence of a partner on the performance of their partner's business has become clearer over the past decades. Özcan (2011) found that the relationship context ultimately shapes the constraints and resources as well as the motivations of men and women to choose self-employment. Marriage is an important determinant of transitioning into self-employment (Simoes et al., 2016), and one of the main resources underneath this strong tie is the additional social capital that can be accessed through marriage. Sanders and Nee (1996) studied immigrant entrepreneurs and found that many immigrants indicated having a chronic shortage of capital. However, it was found that immigrants often have strong family ties that provide them with financial resources and enables the pooling of labor. Important sources of financial and social capital when starting a business were their family and extended family. Having a partner provides additional resources through his or her family. Aldrich and Cliff (2003) go even further and suggest that family and marriage positively influence the recognition of opportunities, decisions to launch a business or product, the mobilization of resources, and the implementation of strategies, processes, and structures. They also mention the enlarged family labor pool through stepfamilies that come with divorces and remarriages.

Besides the transition into self-employment, the partner is also found to be an important driver behind the success of the self-employed. Bratkovic et al. (2009) studied the role of the female partner for the self-employed male, and they conclude that she plays a crucial role in the resource-information acquisition process of the firm of her husband. By being active in the network of the firm, she is able to gather valuable information for the business as well as to maintain valuable contacts with the network. Furthermore, besides being of value for the business, the partner also provides emotional support for the self-employed individual, which is found to be positively related with performance of the business (Bosma et al., 2004). Finally, marriage or a registered partnership can also be seen as a condition that offers stability for the self-employed individual while operating in a risky and uncertain business environment (Brown et al., 2006). Having an employed partner with a stable income offers the possibility of spreading risks within the family or household. This is a condition unavailable to someone without a life partner (Henley, 2007).

Financial and Social Consequences of a Separation

A separation from a life partner such as through a divorce can be seen as a stressful event followed by both social and psychological distress (Miller et al., 1998). Given the severe nature of the event, a separation from the life partner is found to have some drastic consequences. Based on the literature, we distinguish two consequences of a separation that we expect to be of relevance for a self-employed individual. The first consequence refers to the adverse financial consequences or a reduction in income, and the second consequence concerns the reduction in social functioning.

First, a separation from the partner is found to have severe economic consequences, especially for women. Andreß et al. (2006), for example, found—based on data for Belgium, Germany, Great Britain, Italy, and Sweden—that household income is negatively affected by separations for both sexes but particularly for women. Morgan (1989) looked into United States women who separated from their life partner through a divorce and found that during the first 5 years after the terminated marriage, 25% of these women experienced a period of poverty. However, it was also noted that there was considerable movement in and out of poverty, suggesting that the economic decline was not necessarily a long-term condition. Another economic consequence following a separation or divorce is the division of assets between the former life partners. Weitzman (1980) found that over the period 1968–1977 in the United States, the majority of businesses were awarded to the husband. However, this was also in a period that an exact division of assets was not required under the law. Nowadays, it can be expected that in some cases, a marital dissolution might also lead to a dissolution of the business owned by both the former life partners.

Second, a separation can have social implications and result in a reduction in social functioning of the individual. Social functioning refers to both the extent that the respondent experiences negative interferences with social activities due to physical and/or mental problems and the total social time available (Ware, 2000). Thus, the reduction in social functioning stems from physical and psychological problems that often come with a separation. Regarding physical problems, it is well known that a separation from the life partner is associated with a deterioration of physical health. Especially, the situation of experiencing chronic stress due to a separation is related to having more health problems (Lorenz et al., 2006; Hughes and Waite, 2009). It is also found that individuals who spend more time being divorced, without remarrying, show more chronic conditions and more mobility limitations than individuals with a continuing marriage (Hughes and Waite, 2009). Furthermore, Williams and Umberson (2004) found that divorced men and women, compared to married individuals, have a poorer self-assessed health. Regarding the mental or psychological consequences of a separation, studies have found that individuals who separated from their life partner through a divorce are significantly more depressed 4 years after the divorce than their married counterparts (Menaghan and Lieberman, 1986). These psychological consequences are related to social aspects. One of the main factors found to increase the deterioration of mental health is the loss of emotional support from the life partner after a separation (Amato, 2000). Such emotional support can be seen as social capital (Bosma et al., 2004). In sum, the physical and mental problems after a separation will likely negatively interfere with engagement in social activities and, hence, result in reduced social functioning. Research, indeed, indicates that men who separated from their life partner through a divorce feel that they are functioning less in social situations (Hetherington et al., 1976) and that divorced women often have problems with socialization (Bloom et al., 1978). Besides the negative internal social consequences for the individual, the individual often also loses access to the social network and family of his or her former partner after a separation. Given that it was found that the wife of a self-employed individual plays a crucial role by gathering valuable information by maintaining the network (Bratkovic et al., 2009), a self-employed individual will likely lose valuable resources when separating from his or her partner.

Separation and Exit From Self-Employment

An exit from self-employment is not only an impactful event for self-employed individuals; it also has implications for the economy, the industry, and related firms, for example, through the resources that are released through an exit (DeTienne, 2010). Recent literature has focused on the reasons for an exit from self-employment or entrepreneurship. Factors contributing to such an exit can be found at the micro-level. For example, research suggests that an individual's mental health (Hessels et al., 2018), work and leisure satisfaction (Van der Zwan et al., 2018), and initial work experience and capital (Taylor, 1999) may affect exit decisions. Macro-economic conditions may also play a role for decisions to exit from self-employment or entrepreneurship, such as the business cycle (Everett and Watson, 1998; Koellinger and Roy Thurik, 2012) and competition within industries (Dunne et al., 1988). Even though many reasons for exit from self-employment have been studied, the impact of family related factors is currently underexposed.

Some hints for a possible association between the separation from a life partner and an exit from self-employment can, nevertheless, be found in the recent literature. Wennberg et al. (2010) distinguish four exit routes, including "harvest liquidation," which refers to a situation in which a high-performing firm is sold. As an example of why someone would choose this exit route, they mention a divorce (see also Coad, 2014). When partners both own the business and they come to a marital dissolution, in most cases, they will have to distribute their assets. This might lead to a forced sale of the business even for firms that perform well. Also, Ronstadt (1986) found that family related problems might lead to an exit from self-employment. In a survey among 95 ex-self-employed individuals, 21% of the respondents indicated that the reason for their exit was due to financial problems and personal/family problems. Another 11% indicated that their exit was due to personal and/or family problems alone. Divorces are included in this category. These findings suggest that family and personal problems, which might include a separation or a divorce from a life partner, constitute an important reason for an exit from self-employment. Finally, in an exploratory study Galbraith (2003) found some linkages between marital status and an exit from self-employment. He recognizes marital dissolution as having a negative impact on the short-term performance of especially small businesses.

Hypotheses

To summarize, prior research indicates that having a life partner positively influences the probability of becoming self-employed (Özcan, 2011) as well as the performance of the self-employed person (Bosma et al., 2004). For example, a life partner gives access to crucial resource information through maintaining a social network (Bratkovic et al., 2009). When separated from the partner, the self-employed individual loses valuable resources as well as emotional support. This leads us to hypothesis 1.

> **Hypothesis 1:** *There is a positive relationship between separation from the life partner and an exit from self-employment.*

One of the main negative consequences of a separation is the reduction of household income. Such a reduction in income could make it more likely for self-employed individuals to exit from self-employment. Therefore, we hypothesize:

Hypothesis 2: *Household income mediates the positive relationship between separating from the life partner and an exit from self-employment.*

A second main consequence of a separation is the negative impact on one's social functioning through physical and psychological effects. Importantly, especially social capital is found to be important for the success of a self-employed individual (Stam et al., 2014). Given the expected decrease in social functioning of the self-employed individual after separating from a partner, we hypothesize:

Hypothesis 3: *Social functioning mediates the positive relationship between separating from the life partner and an exit from self-employment.*

DATA AND METHODS

Data and Sample

Our empirical analysis relies on longitudinal data from the Household, Income and Labour Dynamics in Australia (HILDA) survey. This panel dataset contains, among others, information on work-related characteristics and family characteristics. We use annual data for the period 2002–2017.[2] Hence, individuals are followed for a maximum period of 16 years in total in our sample. Our analysis sample consists of individuals who have been self-employed in at least one annual wave in the period 2002–2017. We restrict our sample to individuals aged 18–64. The upper bound of 64 years is chosen because Australia's eligibility age for age pension is 65 years. The estimation sample amounts to 18,053 person-year observations (4,044 individuals).

Variables

Dependent Variable: Exit From Self-Employment

The main dependent variable is a binary variable indicating whether an individual has exited self-employment between time t and $t + 1$, indicated as 1, or is still in self-employment at time $t + 1$, indicated as 0.

Furthermore, we distinguish among several "exit routes." Given the survey's focus on the individual rather than the business, we focus on exit from self-employment (individual exit) rather than business exit, and hence, the exit routes inform us about an individual's employment at time $t + 1$ after experiencing an exit from self-employment between t and $t + 1$. We distinguish the following five routes the self-employed individual could follow after an exit. First of all, the individual could exit to wage work. The second route consists of exit to unemployment. The third route is exit toward a position outside of the labor force (this includes home duties, childcare, an unpaid voluntary job, traveling, illness, etc.). The fourth route refers to a specific position outside the labor force, i.e., "retirement or voluntarily inactive." It is important to distinguish this specific position outside the labor force because it is explicitly a voluntary one. Previous research has associated this position with relatively successful exits in the context of business exit (Coad, 2014), and its occurrence is relatively frequent. The fifth and final route refers to individuals leaving self-employment and becoming self-employed again (so-called serial self-employment) (Parker, 2013). All in all, we generate a categorical exit variable with these five exit routes, while the value of 0 refers to individuals who are still in self-employment at time $t + 1$.

Independent Variable: Separation From the Life Partner (Life Event)

The main independent variable reflects whether someone indicated to have been separated from their life partner between time $t - 1$ and time t. By measuring exit in the subsequent period (between time t and $t + 1$), we reduce potential bias due to reverse causality. The questionnaire consists of a list of life events and a respondent had to tick the box if this life event was applicable to him or her. One of the life events was "Separated from spouse or long-term partner." The main advantage of measuring the separation through the life event question over constructing a variable based on an individual's (registered) marital status—see also the robustness check in the "Subsample Analyses" section—is that it also includes information about non-registered marriages, such as *de facto* relationships. In addition, only one wave is needed to extract information rather than two consecutive years in case of the (official) marital status variable, leading to a larger sample size.

Mediator: Household Income

Total disposable household income over the past year measured at time t is taken as our income measure (logarithmically transformed). Extensive information about the construction of this income measure is provided in Summerfield et al. (2019).

Mediator: Social Functioning

The variable indicating *social functioning* is constructed based on the Short Form Health Survey (SF-36) and consists of two components: social extent and social time (Ware, 2000). The variable measures, at time t, to what extent the respondent experiences negative interference with social activities due to mental and/or physical problems. Specifically, the relevant items are as follows: (1) During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups? (answer possibilities: not at all, slightly, moderately, quite a bit, extremely); and (2) During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)? (answer possibilities: all, most, some, a little, and none of the time). The answers have been transformed into a score on a 0–100 scale (Ware et al., 2000). A higher score represents better social functioning.

Control Variables

Based on previous research, a broad set of control variables is included in the empirical analysis (Patel and Thatcher, 2014; Parker, 2018). The individual-specific control variables, at time t,

[2]There is one earlier year of data collection but our independent variable was not measured in 2001. The year 2017 was the most recent year of the dataset at the time of writing this paper.

consist of gender (0 = female; 1 = male), age (18–64), age squared, education (based on the total number of years of schooling) (Leigh and Ryan, 2005), the number of own resident children, and the state of residence (dummy variables for the Australian states). Furthermore, some job-specific control variables were added including the number of working hours per week (in logarithms), the duration of current employment in years (in logarithms)[3], and industry of employment[4]. Finally, we control for the year of the interview.

Methods

Given the nature of our dependent variable, discrete-time survival models are used. Allison (1982) already showed that such survival models can be operationalized by applying regression models for binary dependent variables (in the case of distinguishing between exit and survival) and multinomial logistic models (in the case of our exit routes). In other words, we perform binary and multinomial logistic regressions to fit discrete-time logistic hazard models. These models can include time-varying variables and right-censored observations, both present in our case. Examples of right-censored observations are individuals who are still self-employed in 2017. We do not use clustered standard errors (Allison, 1982). Note that the hazard rate—the probability that an exit occurs at time t given that it has not occurred until time t—is assumed to be different for each of the 16 years under investigation given the inclusion of wave dummies in the specification.

First, we perform a binary logistic regression with the variable indicating whether an exit from self-employment occurs between time t and $t + 1$ as the dependent variable. The independent variable reflects whether someone experienced a separation from a life partner between time $t - 1$ and t. Second, a multinomial logit regression is performed with a categorical variable indicating the various exit routes as the dependent variable.[5] The reference category in the multinomial logit regression is survival (still in self-employment at time $t + 1$) such that the coefficients belonging to the five exit routes can be interpreted relative to staying in self-employment. Third, household income and social functioning, measured at time t, are added to our models as possible mediators. Given the non-linear nature of our regression models (binary and multinomial logistic), we assess the magnitude of the possible mediating (indirect) effects using the KHB method (Karlson et al., 2012). In sum, exit can take place between time t and $t + 1$, separation between time $t - 1$ and t, and the mediators and all control variables are measured at time t. Working with larger lags of variables would reduce the estimation sample, which is not preferable given the already relatively small numbers of exit and separation instances.

A few additional analyses were performed to see whether the main results also hold for subgroups of individuals. We perform separate analyses for self-employed individuals without employees and those with employees. Also, we report the results of subsample analyses based on gender (men versus women), age (younger versus older individuals), education (higher versus lower educated individuals), the duration of the marriage (shorter versus longer relationships), the presence of children in the household just before separation (no children present versus children present), and living area (rural versus urban).

Two robustness checks were performed. First, we base the independent variable on the self-employed's marital status as revealed in the questionnaire (rather than using the question on the life events). Second, we control for the fact that certain factors influence the decision to separate, such as socio-demographic characteristics but also previous values of income and social functioning. We therefore present the results of a propensity score matching exercise (Sbarra et al., 2014) in which each observation corresponding to a separation event is matched with an observation corresponding to non-separation based on similar propensity scores.[6] Both observations then have a similar profile in terms of the covariates predicting the propensity score, i.e., the socio-demographic variables, job characteristics, and lagged values of income and social functioning.

RESULTS

Table 1 shows the descriptive statistics of the dependent variables, our independent variable, the mediating variables, and the

TABLE 1 | Descriptive statistics analysis sample.

Variable	Mean	*SD*	Minimum	Maximum
Exit	0.17	0.37	0	1
Exit to wage work	0.10	0.30	0	1
Exit to unemployment	0.01	0.09	0	1
Exit to non-labor force	0.03	0.17	0	1
Exit to voluntarily inactive	0.01	0.11	0	1
Exit to new self-employment	0.01	0.11	0	1
Separation	0.03	0.18	0	1
Social functioning	86.76	19.76	0	100
Household income (log)	11.27	0.76	4.25	13.74
Male	0.64	0.48	0	1
Age	44.90	10.94	18	64
Education	12.57	2.11	8	17
Children	1.10	1.21	0	5
Hours worked (log)	3.52	0.69	0.01	4.94
Work tenure (log)	1.74	1.13	0	3.93

Table based on 18,053 individual-year observations (from 4,044 individuals). SD, standard deviation. Descriptive statistics for state of residence, sector, and year of the survey are available upon request from the authors.

[3] Any value between 0 and 1 was transformed into 1 (year), after which the logarithm transformation was applied.

[4] The Australian and New Zealand Standard Industrial Classification (ANZSIC) classification was used. Mining was merged with Agriculture, Forestry and Fishing, and Electricity, Gas, Water, and Waste services into Other Services due to relatively few occurrences in these categories.

[5] The "number of events" (De Jong et al., 2019) may be an issue in our multinomial logit specification given the relatively few exit occurrences. A robustness check with the so-called penalized likelihood estimator leads to qualitatively similar conclusions.

[6] We use 1:1 nearest-neighbor matching with a caliper width of 0.05.

TABLE 2 | Correlation table analysis sample.

	1	2	3	4	5	6	7	8	9	10
(1) Exit	1.00									
(2) Separation	0.03	1.00								
(3) Social functioning	−0.08	−0.12	1.00							
(4) Household income (log)	−0.06	−0.10	0.13	1.00						
(5) Male	−0.08	0.01	0.05	−0.01	1.00					
(6) Age	−0.06	−0.07	0.00	0.04	0.05	1.00				
(7) Education	−0.01	−0.02	0.03	0.24	−0.05	−0.04	1.00			
(8) Children	−0.04	−0.08	0.04	0.20	−0.04	−0.11	0.04	1.00		
(9) Hours worked (log)	−0.19	0.00	0.07	0.03	0.39	−0.01	−0.03	−0.02	1.00	
(10) Work tenure (log)	−0.15	−0.06	0.05	0.09	0.11	0.45	−0.10	0.04	0.11	1.00

Table based on 18,053 individual-year observations (from 4,044 individuals). Pearson correlations for the exit routes, state of residence, sector, and year of the survey are available upon request from the authors.

control variables. In total, there are 18,053 individual-year observations from 4,044 distinct individuals. Importantly, 16.7% of the person-year observations constitute an exit from self-employment. Exit to wage work is the most prevalent exit route. Furthermore, the prevalence of separation in the sample is 3.3%. **Table 2** shows the correlation table.

In **Table 3** (panel I), the results of a binary logistic regression explaining exit from self-employment in the next period (without distinguishing between different exit routes) are presented. The results reveal that separating from the partner is significantly and positively related with an exit from self-employment. This result confirms Hypothesis 1. Further analyses, displayed in panel II of **Table 3**, show that, opposed to remaining in self-employment, separation from the life partner is associated with higher probabilities of exiting toward wage work and of becoming self-employed again. There is no significant relation between separation from the life partner and an exit toward unemployment or a position outside of the labor force (either voluntarily inactive/retirement or any of the other non-labor force possibilities). Consequently, it can be concluded that a separation from the life partner increases the probability of experiencing an exit from self-employment, and that the most likely exit routes are exits toward paid employment and becoming self-employed again (versus survival). It is relatively unlikely for a separated self-employed person to be jobless after experiencing an exit from self-employment.

In **Table 4**, the results of the same binary and multinomial logistic regressions are presented as in **Table 3**, but here, the mediators, *household income* and *social functioning*, at time *t* are included in the model. The results in panel I of **Table 4** reveal that the relationship between the separation from the partner and the probability of an exit from self-employment is mediated by both *household income* and *social functioning*. That is, the indirect effects of both variables are significant and positive. *Social functioning* is the most important mediator, explaining 29.7% of the relationship between separation and exit, while the indirect effect corresponding to *household income* explains 10.7% of the total effect. Hence, we find that decreased levels of household income and social functioning are important mechanisms through which separation is related to an exit from self-employment.[7] In conclusion, we find support for both Hypothesis 2 and Hypothesis 3.

Panel II of **Table 4** shows the results for the multinomial logit model. We observe that the coefficient of the separation variable is no longer significant for exit to wage work ($p = 0.13$) and significant at the 10% level for exit to new self-employment ($p = 0.06$) while controlling for household income and social functioning. We find significant and positive total indirect effects for all exit routes except for voluntarily inactive/retirement. In general, we find larger indirect effects for social functioning than for household income, and the large indirect effect for social functioning for the non-labor force route stands out. The fact that the indirect effects for the voluntarily inactive route are non-significant is not surprising given that the coefficients of household income and social functioning are not significant in **Table 4** for this exit route.

SUBSAMPLE ANALYSES AND ROBUSTNESS CHECKS

Subsample Analyses

Tables 5, **6** show results from binary logit regressions for subsamples of individuals based on the number of employees, gender, age, education, duration of marriage, children before separation, and urbanization. The regressions results inform us about the relationship between separation and exit from self-employment without considering the mediators. For completeness, we also report on the indirect effects at the bottom of the tables once the mediators are added to the models. The complete set of regression results with the mediators included is available upon request from the authors.

Important heterogeneity in the impact of separation from the life partner is found based on whether the self-employed

[7] We indeed find in supplementary regressions that separation is significantly and negatively related to social functioning ($b = -12.51$; $p < 0.001$) when social functioning is taken as the dependent variable. Hence, while controlling for all other variables in the regression, those who separated experience a drop in social functioning by 12.51 points (on a 0–100 scale) compared with those who do not experience a separation. When the logarithm of household income is taken as the dependent variable, we find $b = -0.30$ ($p < 0.001$).

TABLE 3 | Results of binary and multinomial logistic regressions with *Exit from self-employment in the next period* as the dependent variable.

	Binary logit (I)		Multinomial logit (II)									
	Exit		Exit to wage work		Exit to unemployment		Exit to non-labor force		Exit to voluntarily inactive		Becoming self-employed again	
	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*
Separation	0.286***	0.103	0.253**	0.123	0.394	0.357	0.240	0.225	0.205	0.479	0.622**	0.270
Male	−0.102**	0.049	−0.126**	0.060	0.474**	0.194	−0.586***	0.105	0.191	0.163	0.416**	0.166
Age/10	−0.702***	0.147	−0.271	0.182	−0.171	0.555	−0.323	0.313	−1.576*	0.825	−0.075	0.487
Age/10 squared	0.080***	0.017	0.015	0.021	0.028	0.065	0.035	0.037	0.317***	0.083	−0.003	0.058
Education	−0.014	0.011	0.006	0.014	−0.016	0.045	−0.082***	0.024	−0.078**	0.035	0.043	0.037
Children	−0.041**	0.020	−0.047*	0.024	−0.068	0.081	−0.009	0.043	−0.235**	0.102	0.028	0.062
Hours worked	−0.540***	0.029	−0.304***	0.038	−0.697***	0.010	−0.917***	0.049	−0.984***	0.075	−0.104	0.114
Work tenure	−0.310***	0.021	−0.299***	0.026	−0.644***	0.086	−0.280***	0.046	−0.102	0.067	−0.527***	0.069
Observations	18,053						18,053					
Pseudo R^2	0.06						0.09					

****p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.10 (two sided). Coeff., coefficient; SE, standard error. The estimates corresponding to state of residence, sector, and year of the survey are available upon request from the authors. Reference category in multinomial logit regression: staying in self-employment.*

TABLE 4 | Results of binary and multinomial logistic regressions with *Exit from self-employment in the next period* as the dependent variable.

	Binary logit (I)		Multinomial logit (II)									
	Exit		Exit to wage work		Exit to unemployment		Exit to non-labor force		Exit to voluntarily inactive		Becoming self-employed again	
	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*	Coeff.	*SE*
Separation	0.169	0.105	0.190	0.125	0.171	0.363	−0.098	0.230	0.232	0.483	0.514*	0.275
Household income	−0.102***	0.030	−0.060	0.037	−0.503***	0.090	−0.257***	0.061	0.089	0.094	−0.017	0.100
Social functioning	−0.007***	0.001	−0.004***	0.001	−0.006	0.004	−0.018***	0.002	0.001	0.003	−0.008**	0.003
Male	−0.100**	0.049	−0.125**	0.060	0.442**	0.193	−0.607***	0.105	0.185	0.163	0.420**	0.166
Age/10	−0.731***	0.147	−0.282	0.182	−0.264	0.056	−0.436	0.313	−1.560*	0.822	−0.087	0.486
Age/10 squared	0.083***	0.017	0.016	0.021	0.040	0.065	0.046	0.037	0.315***	0.082	−0.002	0.058
Education	−0.007	0.011	0.010	0.014	0.014	0.045	−0.065***	0.025	−0.082**	0.036	0.045	0.037
Children	−0.022	0.020	−0.037	0.025	0.019	0.082	0.048	0.043	−0.253**	0.104	0.035	0.063
Hours worked	−0.526***	0.029	−0.297***	0.038	−0.656***	0.010	−0.886***	0.049	−0.976***	0.076	−0.095	0.114
Work tenure	−0.301***	0.021	−0.294***	0.026	−0.615***	0.087	−0.254***	0.046	−0.105	0.068	−0.521***	0.070
Indirect effects												
Household income	0.030***	0.009	0.018	0.011	0.150***	0.031	0.077***	0.020	−0.026	0.028	0.005	0.030
Social functioning	0.084***	0.013	0.046***	0.016	0.073	0.047	0.223***	0.026	−0.009	0.043	0.095**	0.039
Total indirect effect	0.115***	0.016	0.064***	0.019	0.224***	0.054	0.299***	0.032	−0.035	0.049	0.100**	0.047
Observations	18,053						18,053					
Pseudo R^2	0.07						0.10					

*Regressions include the mediators social functioning and household income. ***p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.10 (two sided). Coeff., coefficient; SE, standard error. The estimates corresponding to state of residence, sector, and year of the survey are available upon request from the authors. Reference category in multinomial logit regression: staying in self-employment.*

individual has employees or not (**Table 5**). That is, the significant and positive relation between separation and exit from self-employment holds for the self-employed without employees rather than those with employees. Hence, the implications of separation in terms of an exit from self-employment are stronger for self-employed individuals without employees. Furthermore, we find that the significant result for separation applies to both men and women, and that the relationship is significant in the subgroup of lower-educated and younger individuals (with the thresholds set at 12.5 years for education and 45 years for age, the averages in our sample, see **Table 1**).

In **Table 6**, we do not find many differences across the subgroups in terms of the relationship between separation from the life partner and the probability of experiencing an exit from

TABLE 5 | Results of binary logistic regressions with *Exit from self-employment in the next period* as the dependent variable.

	Self-employed individuals without employees		Self-employed individuals with employees		Self-employed women		Self-employed men		Self-employed individuals with age <45		Self-employed individuals with age ≥45		Self-employed individuals with low education		Self-employed individuals with high education	
	Coeff.	**SE**	**Coeff.**	**SE**	**Coeff.**	**SE**	**Coeff.**	**SE**	**Coeff.**	**SE**	**Coeff.**	**SE**	**Coeff.**	**SE**	**Coeff.**	**SE**
Separation	0.285**	0.119	0.131	0.236	0.323*	0.167	0.245*	0.133	0.299**	0.128	0.212	0.180	0.388***	0.114	−0.134	0.253
Male	−0.079	0.062	−0.287***	0.091					−0.157**	0.070	−0.063	0.069	−0.139**	0.058	0.019	0.091
Age/10	−0.637***	0.173	−0.657**	0.310	−0.469*	0.239	−0.822***	0.189	−0.102	0.427	−3.385***	1.100	−0.869***	0.164	−0.066	0.353
Age/10 squared	0.071***	0.020	0.076**	0.036	0.046	0.028	0.097***	0.022	0.002	0.064	0.331***	0.101	0.101***	0.019	0.000	0.040
Education	−0.023	0.014	0.020	0.021	−0.035**	0.016	0.002	0.016	−0.035**	0.017	0.001	0.015	−0.020	0.025	0.068	0.052
Children	−0.012	0.026	−0.049	0.037	−0.031	0.032	−0.058**	0.026	−0.078***	0.028	−0.020	0.030	−0.032	0.024	−0.070*	0.039
Hours worked	−0.532***	0.035	−0.468***	0.061	−0.492***	0.038	−0.589***	0.048	−0.565***	0.043	−0.532***	0.040	−0.511***	0.034	−0.649***	0.056
Work tenure	−0.299***	0.026	−0.283***	0.041	−0.259***	0.034	−0.334***	0.027	−0.377***	0.033	−0.259***	0.028	−0.321***	0.024	−0.271***	0.043
Observations	10,210		7,014		6,487		11,566		8,471		9,582		13,115		4,938	
Pseudo R^2	0.06		0.06		0.06		0.06		0.07		0.06		0.06		0.07	
Indirect effects based on regressions with mediators included																
Household income	0.020**	0.010	0.033	0.021	0.044**	0.018	0.024**	0.011	0.036***	0.013	0.032**	0.015	0.037***	0.012	0.020	0.015
Social functioning	0.086***	0.017	0.058***	0.021	0.079***	0.020	0.091***	0.018	0.100***	0.020	0.066***	0.018	0.092***	0.016	0.053**	0.024
Total ind. effect	0.106***	0.019	0.091***	0.028	0.123***	0.026	0.114***	0.020	0.136***	0.023	0.098***	0.022	0.128***	0.019	0.073***	0.027

*Subsample analyses for self-employed individuals without and with employees, for self-employed women and men, for younger (age < 45) and older (age ≥ 45), and for lower educated (<12.5 years of schooling) and higher educated (≥ 12.5 years) self-employed individuals. ***p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.10 (two sided). Coeff., coefficient; SE, standard error. The number of employees is not known for 829 person-year observations. The estimates corresponding to state of residence, sector, and year of the survey are available upon request from the authors.*

TABLE 6 | Results of binary logistic regressions with *Exit from self-employment in the next period* as the dependent variable.

	Self-employed individuals in a short relationship		Self-employed individuals in a long relationship		Self-employed individuals without children		Self-employed individuals with children		Self-employed individuals living in rural areas		Self-employed individuals living in urban areas	
	Coeff.	***SE***	**Coeff.**	***SE***	**Coeff.**	***SE***	**Coeff.**	***SE***	**Coeff.**	***SE***	**Coeff.**	***SE***
Separation	0.343**	0.170	0.743***	0.289	0.299**	0.146	0.322*	0.170	0.353**	0.174	0.241*	0.129
Male	−0.181**	0.079	−0.004	0.090	−0.084	0.071	−0.127*	0.074	−0.074	0.082	−0.113*	0.061
Age/10	−1.029***	0.268	−2.339***	0.821	−0.577***	0.185	−1.261***	0.302	−0.760***	0.246	−0.658***	0.185
Age/10 squared	0.120***	0.032	0.245***	0.078	0.062***	0.022	0.148***	0.034	0.083***	0.028	0.076***	0.022
Education	−0.010	0.018	−0.004	0.019	−0.019	0.017	−0.011	0.016	−0.043**	0.020	0.00002	0.014
Children	−0.038	0.031	0.033	0.039	−0.004	0.112	0.016	0.033	−0.051	0.033	−0.036	0.025
Hours worked	−0.543***	0.048	−0.610***	0.050	−0.556***	0.043	−0.556***	0.043	−0.484***	0.048	−0.580***	0.037
Work tenure	−0.322***	0.035	−0.264***	0.036	−0.266***	0.031	−0.336***	0.031	−0.259***	0.034	−0.332***	0.027
Observations	7,545		6,315		7,754		9,355		6,746		11,304	
Pseudo R^2	0.07		0.06		0.06		0.07		0.06		0.07	
Indirect effects based on regressions with mediators included												
Household income	0.043*	0.024	0.040**	0.019	0.032**	0.013	0.046***	0.017	0.058***	0.020	0.019*	0.010
Social functioning	0.117***	0.023	0.037*	0.021	0.057***	0.018	0.119***	0.021	0.102***	0.025	0.076***	0.015
Total indirect effect	0.160***	0.033	0.078***	0.027	0.090***	0.021	0.166***	0.027	0.160***	0.031	0.095***	0.018

*Subsample analyses for self-employed individuals in short and long relationships, for self-employed individuals without and with children, and for self-employed individuals living in rural and urban areas. ***p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.10 (two sided). Coeff., coefficient; SE, standard error. The smaller sample sizes are the result of using lagged values to distinguish short from long relationships, and having no children from having children. Urbanization is not known for three individual-year observations. The estimates corresponding to state of residence, sector, and year of the survey are available upon request from the authors.*

self-employment. The significant positive relationship between separation and the probability of an exit from self-employment is found for individuals without and with children living in the household before separation, and also for individuals living in rural and urban areas. However, we find a difference between short-term marriages and *de facto* relationships, and longer-term marriages and *de facto* relationships (threshold set at 16 years, the average duration of marriages and relationships in our sample). The ending of a long-lasting marriage seems to have a stronger positive relationship with exiting self-employment than a short-lasting marriage.

Robustness Checks

As a first robustness check, we use information about someone's marital status to construct our "separation variable" rather than the response to the life event question as in our main analysis. The disadvantage of using the marital status question is that information for this variable is needed for two consecutive waves. For example, given that we want to include recent information about separation, it is necessary to use marital status information in both year t (i.e., separated) and in year $t-1$ (for example, married). Hence, the number of separation events in these analyses is lower than in our main analysis (only 229 instances of separation). We repeat our analysis in **Table 3** using the marital status variable, and the findings are similar to our original results. That is, there is a significant and positive relationship between separation and the probability of experiencing an exit from self-employment ($b = 0.51$; $p = 0.001$). We find that 12.1% of the relationship is mediated by social functioning (indirect effect is 0.062; $p < 0.001$), and 7.9% is mediated by household income (indirect effect is 0.040; $p = 0.002$). Hence, despite the smaller sample, also in this case, our hypotheses are supported.

The second robustness check entails propensity score matching, where each instance of separation is matched with a non-separation observation in terms of a similar profile for all socio-demographic, job characteristics, and lagged values of social functioning and income. Also here, based on a much smaller sample of 957 observations, the findings support our hypotheses. That is, after our matching procedure, we find a significant and positive relationship between separation and the probability of experiencing an exit from self-employment ($b = 0.33$; $p = 0.07$). In addition, a substantial portion of this relationship is mediated by social functioning (23.5%) and a smaller portion by household income (7.2%).

DISCUSSION AND CONCLUSION

In this article, it is argued and empirically confirmed that separating from a life partner has significant and far-reaching consequences for self-employed individuals. We found that self-employed individuals are more likely to exit their business after they separated from their life partner. Thus, our results indicate that a separation from a partner not only has consequences within the personal sphere, but also has consequences for the economy through the withdrawal of persons from their businesses. This finding complements and extends prior research that has hinted at the possibility that a separation could lead to an exit from self-employment (Wennberg et al., 2010).

Furthermore, our results suggest that the loss of income and reduced social functioning that may follow a separation partly explain that a separation from the life partner leads to an exit from self-employment. The direct negative consequences of a separation in terms of reduced social functioning and reduced income were already well established. The results of our study suggest that these direct consequences of a separation also may have further far-reaching consequences by impacting exits from self-employment. Although it is well known that one's financial situation may impact upon the decision to exit from self-employment, our research has disentangled a specific source of income decline (that is, through separating from a partner) that may drive such an exit. Insight into such specific causes of financial deterioration of a self-employed individual prior to an exit not only provides further insight into what causes exits but also gives clues regarding whether responses are needed to deal with such situations to prevent exits, such as through policy making (see below). In addition, our results indicate that the negative social consequences following a separation play a larger role in driving an exit from self-employment than the negative financial consequences. This further supports that exits from self-employment have much broader drivers than only financial ones (Wennberg et al., 2010; Hessels et al., 2018).

We also find that a separation increases the likelihood for a self-employed individual to exit to wage work, i.e., to become an employee within an existing firm. Possibly, without having the social and financial support of a life partner, these individuals will consider self-employment too risky. At the same time, we also find that a separation makes it more likely for the individual who exits self-employment to become self-employed again. This finding is in line with previous studies suggesting that an exit from self-employment often leads to re-entry into self-employment, for example, because one has built up relevant experience and networks for self-employment, or one has a preference for being self-employed (Hessels et al., 2011). Our finding may reflect that after a separation, it may not always be feasible or desirable for the self-employed individual to continue with the current business (e.g., because the partner had an important stake or played an important role in the business) and therefore a new business needs to be created by the individual.

We find that separations are positively related to an exit from self-employment for the self-employed without employees and not for the self-employed with employees. Self-employed individuals with employees experience higher levels of work stress than those without employees (Hessels et al., 2017). They also work under higher pressure (Blanchflower, 2004) and have a higher workload with an additional set of tasks compared to the self-employed without employees (Hébert and Link, 1989; Lazear, 2005). Our results suggest that the continuation of their business is not affected by the separation from a life partner. Possibly, the presence of employees (i.e., social capital) may make a self-employed individual and the functioning of his or her business less dependent on the support of a life partner.

Given the economic impact of exits from self-employment, appropriate responses by policy makers may be warranted. One option could be to provide financial and non-financial aid when self-employed individuals find it difficult to continue with the business after a, possibly expensive, separation from the life partner. Although separation refers to a situation in which two life partners voluntarily decide or arrange to stop living or being together as a couple, (local) governments may, in some cases, want to interfere when effects on welfare are large. In such a case, the government might consider issuing relatively cheap loans for separated self-employed individuals or promote certain social activities more actively among recently separated self-employed. Importantly, policy makers could also consider focusing more on preventing the occurrence of separations, for example, by raising awareness about the potentially serious consequences such as the ones demonstrated in this study.

We have a number of suggestions for future research. First, we would like to encourage researchers to identify other mediators that, next to social functioning and household income, explain the positive association between separating from a life partner and exiting self-employment. Potential mediators may include personality traits that may be affected by a separation from a life partner like (reduced) self-efficacy, or diminished motivation for succeeding with the business. Also, we would like to encourage researchers to gain insight into the motives for exiting self-employment after a separation and to further disentangle to what extent an exit following a separation has been voluntary or not and to what extent such exits are successful (such as a harvest sale) or unsuccessful (such as a forced liquidation) (Wennberg et al., 2010). In addition, researchers could also investigate performance implications for businesses of self-employed individuals who do not exit after a separation. Another suggestion would be to conduct a more in-depth study into the consequences of a separation of individuals who have an equal share in a business. Many business owners have a self-employed spouse (Parker, 2008). Research has focused on why this is the case, but future studies may want to investigate what happens in the event of a separation. It is not only interesting to see which exit routes are followed after experiencing an exit, but also what happens to the business and, whenever applicable, to whom the business is awarded. In a related way, future studies could relate the existing findings to research on family firms. For example, family firms are less likely to exit than non-family firms (Chirico et al., 2019; Madanoglu et al., 2019); one may be interested in what the impact on family firms is when there is a separation event in the family business team.

Finally, our conclusions are based on the analysis of Australian data, and this raises the question as to whether the revealed relationships between separation from the life partner and exit from self-employment are specific to Australia or applicable to other countries as well. In the Introduction, we noted that the demographic patterns in terms of divorce in Australia are similar to trends in other Western countries. However, the prevalence of self-employment is relatively low in Australia. Still, the theoretical considerations that backed up our empirical analyses were not specific for Australia, and therefore, we believe that the relationship between separation from the life partner and exit from self-employment as well as the mediating effects through household income and social functioning are likely to be present in other developed countries as well. However, the strengths of these relationships may differ to some extent across countries, and therefore, future studies may want to validate our findings in other economic contexts.

DATA AVAILABILITY STATEMENT

The datasets analyzed for this study can be obtained here: https://melbourneinstitute.unimelb.edu.au/hilda/for-data-users.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the patients/participants/legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

LL, JH, CR, and PZ were involved in all parts of the study, except the data analysis. The data analysis was performed by LL and PZ.

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Caught Between Autonomy and Insecurity: A Work-Psychological View on Resources and Strain of Small Business Owners in Germany

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While research on personality factors and economic success of entrepreneurs has flourished over the years, studies on their specific working conditions and their impact on health and career are surprisingly scarce. This study used a qualitative approach to comprehensively mirror the working situation of German small business owners. To reflect the broadness of this employment type and avoid sampling bias, we applied a quota sampling strategy based on a preliminary typology of solo self-employed respondents we derived from a large quantitative survey. We investigated 29 small business owners who reported, for example, on health complaints, recovery opportunities, and obstacles and resources while running their businesses. Thematic analysis was employed to develop a specific frame model for small business owners based on established work-related stress theories which allowed us to derive concrete hypotheses for further quantitative research. The main results emphasized the meaning of active actions and the workers' own responsibility for creating working conditions and enabling autonomy. Besides personal preferences regarding the chosen career path, marketability, flexibility, and social networks played a role and explained health and career issues. When it came to practical implications, voluntariness played an essential role for selecting this specific career path. Those being pushed into self-employment as their only viable job opportunity should receive particular support through career counseling to sustain their health.

Keywords: autonomy, recovery, strain, mental health, small business owners, entrepreneurship

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INTRODUCTION

Much research has been done on the economic effects of self-employment, environmental conditions for entrepreneurial success, and if the attributes of the person themselves fit into this career path. Successfully running a business is contingent on the health of the entrepreneur. Small business owners (being solo self-employed without personnel) face financial uncertainties, a high workload, long working hours, and are often unable to call in sick. The financial uncertainties and economic insecurity most small business owners face daily recently became apparent with the emergence, spread, and impact of the COVID-19 crisis. This led to the creation of policies to offer specific support for those who were solo self-employed. For example, under the label of "We won't leave anybody alone," the German government has agreed on an emergency aid package worth 50 billion euros to support micro enterprises, freelancers and one-person businesses (Presse- und Informationsamt der Bundesregierung, 2020). Hence, our study aimed to explore the working situation, assuming that resources (e.g., autonomy), strain (e.g., dependency on contracts with clients) and health and career outcomes of small business owners come at the right time.

Small business ownership contributes to the creation of workplaces and new products, and is therefore important for a country's economic development (Carree et al., 2002; Thurik and Wennekers, 2004). Recently, there has been renewed interest in entrepreneurship (Nabi and Holden, 2008) partly in response to the economic and unemployment crises (Urbanos-Garrido and Lopez-Valcarcel, 2015; Vogel, 2015; Santos et al., 2017). An estimated 10% of the working population in Germany is self-employed or owns a small business (Carter, 2020). While this group is comparably large, research so far has mainly neglected the study of the specific situation of small business owners. In this paper, we equate small business owners to solo self-employed people. Solo self-employment can be defined as operating a business and having the sole responsibility for one's economic success without employing others for technical or professional support. Solo self-employed people have to be differentiated from employer entrepreneurs who are self-employed as well but utilize personnel (Schummer et al., 2019). Notably, to be counted as solo self-employed for tax purposes in Germany, helping family members as well as other services (e.g., cleaning staff) are not counted (Brenke, 2013).

With our study, we would like to shed light on the working conditions of the solo self-employed as it might play an important role for their well-being and mental health. Although extant research shows that the self-employed tend to report high levels of happiness and well-being (Binder and Coad, 2013; Schneck, 2014; Markussen et al., 2018), self-employment involves numerous challenges such as risk and long work hours that could threaten their mental health (Baron et al., 2016). These working conditions depend on the market situation and are determined by individual differences regarding the motives for their selected career path. Despite increased research focusing on entrepreneurs' psychological well-being (Ryff, 2019), there is still a paucity of studies exploring the demands and resources arising from solo self-employment. However, demand and resources can heighten or buffer against stress from work. Solo self-employment can be more challenging and demanding than other forms of self-employment, yet small business owners can also enjoy independence and autonomy as they work alone. In contrast, this can also be the cause for some mental health challenges, such as loneliness and lack of social or emotional support. Therefore, we conducted an interview study that aimed to develop a work psychological stress model for solo self-employed individuals based on their lived experiences.

In the following chapters, we will derive our three main research questions (RQs) by first referring to the well-being of small business owners, introducing the interplay of stressors and resources and its impact on mental health for small business owners, and we finally summarize relevant knowledge on the role of personality in well-being. Hence, we look at both work-related and personality factors and how they shape well-being.

Well-Being and Mental Health of Small Business Owners

Recognizing the value of well-being to humans functioning at work, Article 24 of the Universal Declaration of Human Rights focuses explicitly on recovery and sustaining physical and mental health. More specifically, it declares that people should have the right "to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay." Across most countries, restrictions on working hours, quantity of vacation days, as well as duration and frequencies of breaks during working time are protected by legislation and included in employees' working contracts – at least for employees who are regularly employed.

Work is one of the most important aspects of human life, and it is therefore important to psychological development and function (Blustein, 2008). Nevertheless, it also has the potential to thwart psychological function in the case of undesirable experiences in one's work life. Work is essential for gratification of the basic psychological needs of autonomy, competence, and relatedness (Van den Broeck et al., 2016) which in turn foster psychological growth and well-being (Ryan and Deci, 2001; Deci and Ryan, 2008; Van den Broeck et al., 2016). In terms of self-employment, existing research indicates that entrepreneurs tend to be happier and report high levels of psychological well-being (Binder and Coad, 2013; Baluku et al., 2018a; Shir et al., 2018; Nikolaev et al., 2019). In contrast, individuals tend to experience serious mental health challenges such as low self-esteem, substance abuse, and severe mental health concerns when they are out of work (Blustein, 2008; Otto and Dalbert, 2013). Such experiences are not uncommon in self-employment, given that an entrepreneur has to work long hours while undertaking the complex process of starting a venture and going against competition in the business space (Baron et al., 2016).

An important outcome of work, which is one of the major attractions of self-employment, is autonomy (van Gelderen and Jansen, 2006; Schneck, 2014; Jubari et al., 2017; Baluku et al., 2019). This is one of the essential goals that people seek to achieve in their workplaces. However, this outcome is generally threatened by digitalization. There is an increased risk of constant accessibility through digital apparatuses, including the internet and smartphones. This makes it more difficult for employers to separate work from the family domain in order for employees who prefer privacy to recover (Derks et al., 2016). Overall, people who are self-employed, working on-demand, in portfolio careers, or the "gig-economy," often experience little protection, and may even violate their own rights regarding work-family life balance in order to maintain their jobs, customers, or overall employability (Fleming, 2017). Similarly, there is an increasing risk of abuse of independence or autonomy at work among the self-employed. Being one's own boss, coupled with high demands from customers, increases the temptation to work longer, often on weekends and holidays, increasing the risk of exhaustion, diminished relatedness, and stress.

In some forms of self-employment (e.g., solo self-employment), individuals willingly work extra hours with or without being conscious of the implications for their well-being. This facilitates the experience of negative emotions which include fear, strain, and stress. Although these effects may be dependent on regulatory coping behaviors (Patzelt and Shepherd, 2011). The knowledge of health and well-being of small business owners is an important topic to explore. Accordingly, our first research question is as follows:

RQ1: How do small business owners perceive their health status? Do they have sufficient opportunities and time to recover from work? What happens to them in case of sickness?

The Interplay of Stressors and Resources for Well-Being

Despite its positive psychosocial functions, work can be an important source of stress. The term stress refers to a subjectively unpleasant state of strain arising from the fear of being unable to cope with an aversive situation (Zapf and Semmer, 2004). Lazarus and Folkman's structural model of appraisal (1984) is one of the most common models in stress theory. According to the authors, cognitive processes steadily evaluate the current situation regarding its meaningfulness for one's well-being. They differentiate between three kinds of appraisals: the primary appraisal, the secondary appraisal, and the reappraisal. During a person's primary appraisal, he or she evaluates whether the current situation is important for his or her well-being. The situation can be interpreted as positive, irrelevant, or dangerous. In both positive and irrelevant situations, there is no need for action. If a situation is interpreted as dangerous, actions need to be taken to sustain or retrieve one's well-being. In this case, available resources are analyzed in the stage of the secondary appraisal.

Resources can be material, social, physical, or psychological. In other words, resources are factors that are directly or indirectly of value for survival or that lead to the attainment of such value (Hobfoll, 1998). If the person has sufficient resources to cope with the situation, it is perceived as a challenge from which the person can learn or profit in another way (cf. LePine et al., 2005; Widmer et al., 2012). If the person, however, does not have sufficient resources he or she perceives stress, which may result in negative consequences for his or her well-being. This stressful situation can now either be coped with using a problem-focused approach, meaning to act and thereby to change the situation itself, or an emotion-focused one, meaning to change the relation to the situation or to adjust to it (e.g., Lazarus, 1999; Semmer, 2003). The process ends with the reappraisal, which monitors the situation repeatedly and takes care of necessary behavioral adjustments to changing situational characteristics.

The emotions people experience in those situations depend on how they perceive their ability for problem-focused or emotion-focused coping and what is an appropriate response to the situation (cf. Zapf and Semmer, 2004). Thus, personal resources such as self-esteem can buffer negative consequences of social-evaluative threats (Dunkel Schetter and Dolbier, 2011; e.g., by facilitating faster habituation; Elfering and Grebner, 2012). Nevertheless, under conditions of limited stress exposure and successful recovery (cf. Geurts and Sonnentag, 2006; Geurts, 2014), stress exposure itself could have a strengthening effect on the individual (toughness; Dienstbier, 1989; Seery et al., 2010; Ganster and Rosen, 2013). However, if the exposure is not transient, chronic stressors could reduce resource capacity and impair coping (e.g., Elfering et al., 2005) – increasing the vulnerability to stress. Thus, beyond the source of stress, the possibilities to recover and the person's ability to recover are also relevant.

Previous knowledge of work psychology, which mainly comes from studies with paid employees, is the basis utilized when it comes to understanding the health and performance of self-employed people. We assume that stressors and resources in solo self-employment differ as indicated, for example, by the fact that people work solo without any co-workers, superiors, or subordinates. Taking these considerations as a basis for relevant concepts and processes with this research, we aimed at developing a specific work psychological model for small business owners as suggested by our second research question.

RQ2: Which stressors shape the working situation of small business owners? What resources do they experience in their work? How do both types of job characteristics – i.e., stressors and resources – interplay when explaining well-being?

The Role of Personality for Well-Being of Small Business Owners

Small business owners are more strongly responsible for creating their working conditions (on their own) favorably as compared to employed people or employer entrepreneurs (i.e., self-employed people with personnel; Schummer et al., 2019). Also, when it comes to health, stress and strain have individual differences. These emerge and can be traced back to several relevant psychological concepts. For this paper, we limited our review to three concepts that are important to our findings: including personality, psychological resources (psychological capital) specifically self-efficacy, and motives or goals.

Person-environment fit theories have been applied to understand why some people choose, persist, and succeed in self-employment or entrepreneurial careers. Focusing on the theory of vocational personalities and work environments (Lasser, 1974), each of the six personalities represents a set of interests, preferred activities, beliefs, abilities, values, and characteristics (Nauta, 2010) that must be congruent to the environment or the characteristics and realities of a given profession or work. In line with our study focus on "demands and resources in solo self-employment," enterprising individuals tend to be adventurous, acquisitive, ambitious, energetic, optimistic, confident, and sociable (Spokane and Cruza-Guet, 2005). More recent research has advocated to focus on less stable personality traits or constructs such as risk taking ability or risk tolerance, need for achievement, personal initiative, proactivity, and flexibility, respectively (Rauch and Frese, 2007;

Obschonka and Stuetzer, 2017; Baluku et al., 2018c). On the one hand, all these qualities may be important resources in different activities or stages of the business process. On the other hand, a lack of these qualities may represent person-environment incongruence which increases the likelihood of strain, stress, and consequently lowered well-being and work satisfaction.

The entrepreneurial process is complex and each stage of the process comprises of challenging tasks that are potential triggers of stress (Baron et al., 2016). The process is even more demanding for the solo self-employed who must perform all business tasks by themselves. Consequently, a significant amount of psychological resources is required to manage and cope with such work pressures. These resources are constituted in the construct of psychological capital (Goldsmith et al., 1997; Luthans et al., 2004; Luthans and Youssef-Morgan, 2017), which has been found to significantly predict low levels of stress among entrepreneurs (Baron et al., 2016). However, it is not known yet whether this generally applies to all self-employed people, or even small business owners such as the solo self-employed. Based on the positive psychology literature, psychological capital comprises four resources, including self-efficacy (confidence), optimism, hope, and resilience (Luthans et al., 2004, 2007; Luthans and Youssef-Morgan, 2017). It has been suggested that when combined, these resources make a stronger contribution to business success and persistence than tangible, human, and social capitals (Luthans et al., 2004; Baluku et al., 2016, 2018b). Accordingly, psychological capital provides the mental hardiness needed to cope with the work demands involved in self-employment (Baron et al., 2016). Each of the resources involved play different yet complementary roles. Baron et al. (2016) explain, for example, that self-efficacy helps to reduce experienced stress while the positive expectations involved in optimism helps mitigate the stress. Hope is useful in developing multiple pathways to overcome the work challenges and resilience enables individuals to persist in overcoming challenges.

Individuals also differ in their motives and goals for engaging in entrepreneurial activities or small businesses. To some, it is income or the opportunity to create wealth, while to others, it is about the freedom of being one's own boss in contributing to or bringing about a change in society. To others, it is just an employment option that is better than being unemployed. However, the self-determination theory provides an educated framework for understanding human motivations and goals for engaging in different behaviors including work. From this perspective, it is logical to assert that the self-employed seek more than just monetary outcomes (Hamilton, 2000). Rather, and in line with the realities of protean careers (Hall, 2002; Briscoe and Hall, 2006), individuals seek to gratify psychological needs including autonomy, competence, and relatedness (Deci and Ryan, 2000; Deci et al., 2001; Gagné and Deci, 2005). Particularly, autonomy seems to be what most people strive for in the workplace as it facilitates the achievement of organizational goals and personal agendas such as well-being (Hodson, 1991; Gagné and Bhave, 2011; Otto et al., 2013). When psychological needs are satisfied, it results into greater self-motivation, engagement, and volition and consequently creativity, superior performance, and persistence (Deci and Ryan, 2000; Ryan and Deci, 2000; Gagné and Deci, 2005). Hence, gratification of psychological needs can represent further psychological resources for work. However, if self-employment is not facilitating the gratification of these needs, it can result in the experiencing of psychological strain and a lowered well-being. Relatedly, individuals also differ in which pursuit they have in terms of choosing between income or wealth. Attaining financial security to meet familial and other financial needs could boost job resources among the self-employed.

In conclusion, individual differences in personality, psychological resources, goals and motives exist which might have a direct impact on well-being or an indirect impact via evaluating stressors and resources which affect health in turn. Accordingly, we were interested in the role of individual differences for explaining well-being for the solo self-employed leading to our third and last research question.

RQ3: What were the motives for becoming (solo) self-employed? Were the small business owners attracted (push) by this type of employment or did not have a different choice (pull)? Does the product or service as well as the conditions in the market play(ed) a role?

METHODOLOGY

We regard the group of solo self-employed as experts in their field and aimed to conduct expert interviews (Bogner et al., 2009). According to Meuser and Nagel (2009), "an individual is addressed as an expert because the researcher assumes (. . .) that she or he has knowledge (. . .) which is not accessible to anybody (. . .). It is this advantage of knowledge which the expert interview is designed to discover, and it is an exclusive realm of knowledge which is highly potential because and in as far as it is linked with the power of defining the situation" (p. 18).

Sampling Criteria and Sampling Process

As discussed by Robinson (2014), sampling is central for best practice in qualitative research and for its impact and trustworthiness, which calls for a clear (1) definition of a *sample universe* through inclusion and exclusion criteria for potential interviewees; a (2) decision upon a *sample size* by balancing out research-based interests and practical concerns; a (3) well-reasoned selection of a *sampling strategy* as well as (4) *sample sourcing* containing issues of advertising, incentivizing, avoidance of bias, and ethical concerns.

The *sample universe* is set by the definition of solo self-employment indicating that potential participants should run a business and have the sole responsibility for their economic success without employing others for technical or professional support except helping family members (Brenke, 2013).

As solo self-employed people can work in nearly all professional fields, we developed a typology to assess all or at least most of the relevant types of small business owners prior to our interview study (Kottwitz et al., 2019a). This typology was derived from data of a large quantitative survey which also included (solo) self-employed individuals. That way, we tried to avoid bias in *sample sourcing* by making sure that we do not neglect specific types or overestimate them (cf. Robinson, 2014). Specifically, the solo self-employed people to be approached to participate in our expert interview study (Bogner et al., 2009) should mirror the broad range—with respect to demographic factors, prestige, qualification, and job insecurity—within the chosen profession.

We used the data from the Federal Institute for Vocational Education (BIBB)/German Federal Institute for Occupational Safety and Health (BAuA)'s employment survey of the working population on qualification and working conditions in Germany as collected in the year 2012 to conduct cluster analysis and to derive a typology of small business owners. About every 5 years, the BIBB and the BAuA jointly conduct this representative survey. Data were available for 20,036 volunteers who were above the age of 15 years and worked at least 10 h per week (Rohrbach-Schmidt and Hall, 2013). Overall, data of 883 solo self-employed people were available, and their clusters were analyzed and used for the following cluster analysis.

Age and *gender* play important roles when it comes to: (solo) self-employment (e.g., Smith and Tolbert, 2018). The mean *age* of the solo self-employed in the sample was 49.68 years (SD = 11.69), and there were 501 women and 382 men. Besides these two demographic factors, we took the *professional qualification level* into account as it is relevant for our typology. Moreover, we considered the *prestige* of the occupational activities of the small businesses by using the magnitude prestige scale (MPS, Wegener, 1982, 1983) which evaluates the societal reputation of a profession. In the group of solo self-employed of the BIBB/BAuA employment survey, the lowest value was given for agriculture workers in men (30.10) and cleaners in women (32.20) and the highest for doctors or pharmacists (191.30). Finally, there might be important differences regarding voluntariness of, and hence commitment to, the self-employed role (Baluku et al., 2018a,b). As there were no data available concerning the willingness to stay in solo self-employment, we used the *unemployment quote by gender* as a proxy to have an indicator of a range of difficult economic situations and thus higher or lower employment stability. The unemployment quote ranged from the field of "theology and community work," with 0.10% for women and 0.30% for men, respectively, to 42.50% for women in the field of textile work; the mean unemployment quote was 10.31% (SD = 8.26%).

Considering the five aforementioned criteria, we derived the following 11 types of solo self-employed people that were relevant to interview: (1) Female with uncertain status and comparably low qualification level (n = 40, typical professions: cosmetician, assistant in health care, textile processor), (2) Male with uncertain status (n = 85; typical professions: insurance agents, roofer, building technician), (3) Low qualified young female (n = 33; typical professions: nanny, childminder, learning supervisor), (4) Low qualified young male (n = 36; typical professions: carpenter, glazier, photo technician), (5) Young high potential male (n = 17; typical professions: journalist, software engineer), (6) Older solo self-employed with low status but secure employment (n = 174; typical professions: various with low unemployment risk), (7) Low status but secure (n = 115; typical professions: various with low unemployment risk), (8) High qualified and secure status (n = 120; typical professions: business consultants), (9) Older highly qualified and secure status (n = 195; typical professions: business consultants), (10) Highly prestigious female professionals (n = 42; typical professions: psychotherapists, dentists, attorneys), and finally (11) Highly prestigious male professionals (n = 26; typical professions: dentists, physicians, legal advisers).

As for the *sample size*, we aimed to interview between 25 and 30 small business owners. Regarding sampling strategy, we chose a *quota sampling strategy* (Robinson, 2014) based on the percentage of solo self-employed in each category of the typology (as was indicated in brackets above). Accordingly, we planned to approach and interview n = 3 small business owners of category (1), n = 4 of category (2), n = 1 of category (3), n = 2 of category (4), n = 1 of category (5), n = 7 of category (6), n = 4 of category (7), n = 4 of category (8), n = 6 of category (9), n = 2 of category (10), and n = 1 of category (11). Except for category (1) where we interviewed only n = 2 (instead of 3) people, and categories (6) and (7) where due to saturation in the interviews we only questioned n = 4 (not n = 7) and n = 2 (not n = 4) solo self-employed, respectively. Our selection of participants was similar to the one required. While this typology itself should be treated with caution (as relevant indicators as voluntariness might not be perfectly reflected) it was justified for us to use it as a guideline to select participants and to avoid bias in sampling (Robinson, 2014). We created flyers and websites for advertising purposes, received ethical approval and used networks of self-employed people (e.g., unions) to gain access to our experts.

Sample Description

By use of quota sampling and based on the typology explained above, we contacted 40 solo self-employed and asked for their willingness to be interviewed. Of these, 29 agreed to participate, leading to a response rate of 72.5%.

More precisely, we interviewed 11 women and 18 men, of which 27 had a German citizenship. Their age varied between 25 and 84 years old (M = 52.86; SD = 13.31). More than two-thirds (n = 17) of our sample had attended a university or technical college. Eleven small business owners had to deal with unemployment experiences in their past while the same number had received financial support to start their businesses. On average, the interviewees had been solo self-employed for 215.76 months (SD = 174.13).

When it comes to the sectors represented, the majority (20 out of the 29) of interviewees owned their small businesses within the service sector. Other sectors included the fields of adult education, personnel and organizational development, software engineering, and health professions. The remaining participants worked in the fields of commerce, handicrafts, industry, and arts. Twenty-one interviewees run a business in an occupational activity which was completely similar to their study or vocational training, while for another three their study and final careers were slightly less related. For the remaining five small business owners, their practiced occupational activity had nothing to do with their prior qualification.

Interviews and Data Analyses Procedure

All participants were interviewed face-to-face by six trained interviewers. Each interview lasted, on average, 58 min and 50 s (*SD* = 19 min and 53 s). The participants gave permission for the recording of the interviews and this was accomplished using digital recording equipment. Using partially standardized interviews, the interviewees were asked questions about eight major topics. In addition to general information about their occupational activity, these concerned (a) their motives as well as goals and their achievement, (b) perceived advantages and disadvantages of solo self-employment, (c) their adaptability and how to deal with change, (d) working time and the balancing of work and private life, (e) social structures, (f) burdens and resources, and (g) their perceived health, success, and performance. In addition, (h) they were interviewed about their wishes for occupational safety and health which might be particularly relevant for the future design of solo self-employment (see practical implications).

We explored our research questions by use of *thematic analysis*; this is a method involving searching across a data set to find repeated patterns of meaning by constantly moving back and forward between the entire data set, the coded extracts of data as well as the analysis of the data produced (see, Braun and Clarke, 2006). As suggested by Mayring (2015), the audio recordings of the interviews were professionally transcribed as a first step. During the process of data analysis, the transcripts were regularly checked back against the original audio recordings for accuracy and refinement.

As to the level of analysis, we used a *semantic approach* in which themes are identified within the explicit or surface meanings of the data without looking for anything beyond what our experts had said. Regarding the type of analysis, we aimed at providing a *rich thematic description* of the interviews allowing a reader to recognize the important themes limiting potential depth and complexity which according to Braun and Clarke (2006) "might be a particularly useful method when (. . .) investigating an under-researched area" (p. 83).

Overall, our analysis was guided by established stress-theoretical models (deductive approach) but we also looked for data-driven themes (inductive approach). In doing that, our data analysis started with identifying the key phrases from an arbitrarily chosen interview. Considering theory-driven scientific knowledge, but further following the technique of inductive category development, preliminary categories were formed when working through this first interview. They were then revised and refined in the process of coding the remaining interviews.

Finally, for reasons of quality control and to optimize our findings, we applied the method of communicative validation (Kvale, 1995). Specifically, after the interviews were analyzed, with themes identified and a preliminary model developed, we invited our participants to an expert meeting to discuss and refine our model and hence guarantee its validity.

RESULTS

Well-Being and Strain

We aimed to develop a work-psychological stress model specific for solo self-employed people containing but also going beyond the conceptualizations of prior stress theories. Accordingly, our first research question was focused on the well-being and strain situation of solo self-employed people. In line with the World Health Organization (WHO), we define health as a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." To reflect this point broadly, we first asked our interviewees about their general state of health on a quantitative scale. We then asked about their perceived possibility to calling in sick and recovering in case of illness. This was a concrete outcome of health closely linked to their business situation.

On a five-staged measure, five of the 29 interviewees reported that their health status is "very good," 18 said it was somewhat "good," three were "undecided," two answered about having a "somewhat bad," and one solo self-employed even indicated a "very bad health" status.

Our model should ultimately explain how to maintain health for the solo self-employed. One of the main important points to "repair" or sustain well-being is the opportunity to recover. Recovery can be seen as a central mechanism that translates the characteristics of the work into possible consequences. In this respect, we regard recovery as proximal to the maintenance of health. Psychological research has yielded a broad consensus that adequate recovery is needed (Zijlstra and Sonnentag, 2006) to sustain one's health and productivity (Geurts and Sonnentag, 2006).

As recovery seems to be the key to well-being (Geurts, 2014), we asked small business owners in our sample about what happens in case of illness and if they have enough time to recover. While some of the solo self-employed affirmed that they are able to recover, others denied it or admitted that it depends on the circumstance. Hence, we derived three main categories with more detailed sub-categories. The categories, sub-categories, and sample phrases as reported by the interviewees are summarized in **Table 1**.

For those agreeing that they *have time to recover,* the solo self-employed respondents gave unconditional agreement (1a), approval with the restriction to being rarely ill (1b) or approval but granting that it was not like that in the past (1c). Hence, it seems that for some people, there has been a development which might result either from a general demarcation or because of professional success. In cases where it was stated there would be *no time to recover,* the interviewees either worked despite being ill (2a), quoted that they would be rarely ill at all (2b), or expressed that they would work more carefully and conserved personal resources (2c). Moreover, if people stated that it *depended on the circumstances* it was the case that either the duration of the illness (3a), the type of the illness (3b), or the specific business

TABLE 1 | Solo self-employment and time for recovery in case of illness.

Category	Sub-category	Example
(1) Yes, time to recover	(a) Unconditional agreement	"That's a mental question. I guess it's ultimately absolutely brainwork to do that. There's a little trouble when I get sick, but then I throw a switch and crawl into bed without having a bad conscience. Sometimes I am happy to be able to take time off and to withdraw from somewhere and wait until I get fit again. This is how I do it." (*male, 57 years, 32 years solo self-employed*)
	(b) The restriction that someone is rarely ill	"Illness conflicts with my self-employment and I can take time for recovery. Astonishingly enough, I have worked in an organization for almost 20 years before I started my own business. In these 20 years and earlier, I guess, I was more often ill than in self-employment and that's what I find interesting. Additionally, in these 20 years, I very rarely said that I was not coming due to illness. But, I agree, I would do it. By the way, it would not work at all – Once I'm ill I have no chance of doing what we are doing. I might still be able to work representationally, but not in that field. We better cancel and my decision will be accepted." (*male, 59 years, 20 years solo self-employed*)
	(c) Yes, but it was not like that in the past	"When I started teaching, I always thought that if I'm not there, the whole chain would break down. Therefore, I also taught sick. I don't do that anymore, I really take time to cure myself, because it's no good for me or anybody else." (*female, 27 years, 7 years solo self-employed*)
(2) No time to recover	(a) No, working despite illness	"No!" (*male, 40 years, 8 years solo self-employed*)
	(b) No, someone is rarely ill	"I have not been ill for 17 years now. If I would get ill, I would really be in a dilemma. That really wouldn't work. Maybe for 1 week, 2 weeks would already be a catastrophe. If I would be really ill, I would be broke immediately or even dependent on income support. From 1 day to the other. Dead tomorrow." (*male, 53 years, 17 years solo self-employed*)
	(c) No, but working more carefully with personal resources	"I have been 'ill' for 1.5 years now, 'ill' with quotation marks, and therefore I didn't accept too many orders, only standard seminars which I already knew about." (*female, 32 years, 4 years solo self-employed*)
(3) Depending on the circumstances	(a) Duration of illness	"Well, I can manage my time. However, to actually have enough time to cure myself, that's another question." (*male, 84 years, 51 years solo self-employed*)
	(b) Type of illness	"If I see no other way out, yes, of course. However, in case of a non-serious illness, I usually go to work sick. If I have a cold or flu unless my head is really closed now, I can definitely stay at home for 1 day and have to cancel all patient appointments." (*male, 54 years, 11 years solo self-employed*)
	(c) Business situation	"Depending on whether there are any important deadlines, then definitely not. In general, however, you can arrange things so that there is enough time. It'll be fine." (*male, 47 years, 1,5 years solo self-employed*)

situation, i.e., the order situation, determined whether recovering from diseases would be possible or not.

Regarding the first research question, it can be summarized that it is necessary to more strongly explore the health situation of the solo self-employed. The interviews underlined that even if there is a need for recovery, the small business owners do not always have or take the opportunity to detach themselves from their businesses. Some even reported that they worked even if they were actually too sick to do so. This phenomenon is known from research with those who are paid employed and is known as presenteeism. This refers to the act of working while being ill (Johns, 2010) and was shown to have negative effects on work ability (Gustafsson and Marklund, 2011) and health. This also led to an increased risk of emotional exhaustion (Taloyan et al., 2012).

Job Characteristics in Solo Self-Employment

To answer our second research question, i.e., analyzing the specific positive and negative aspects of the work situation, we explored the job characteristics of solo self-employed people. In contrast to other forms of employment (i.e., self-employed with personnel, employed in a company/public institution), the working situation of solo self-employed people is reflected by their sole responsibility for each and every part of their job. Hence, they can be the driver or in charge of healthy workplaces for themselves. They have to build social networks to get support because they have no co-workers, and they have sole autonomy which might be both a blessing and a curse.

Autonomy in solo self-employment is closely linked to the demands of sole responsibility—indicating that stressors and resources seem to merge. Moreover, autonomy is created not only by self-employed work within a specific market and product context itself, but also sets its boundary conditions by its market rules, customer needs, or supplier conditions. Moreover, personality factors play a key role in explaining whether people choose employment with such high levels of responsibility and autonomy and whether they are satisfied and committed to it. This complex model is illustrated in **Figure 1**.

In the following chapter, we will describe parts of the model by introducing (1) work-related demands shaping the working situation, as well as (2) work-related resources helping to deal with it, considering how they are related to: (3) strain, health and recovery as a consequence of the stressor−strain relationship.

Demands Arising in Solo Self-Employment

According to the job demands-resources model (JD-R) (Demerouti et al., 2001), demands are related to strain and described as "physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs" (Bakker et al., 2006, p. 312). In the interviews, the sole responsibility for all working aspects was seen as the key point as shown by answers to the question "what, broadly speaking, usually are the things which are demanding or maybe even burdening in the job"? Overall, we crystalised five different categories of demands (or stressors), with each further containing various sub-categories. A detailed description of the categories, sub-categories, and sample phrases can be found in **Table 2**.

The categories 1 to 3 refer to aspects that are part of paid employment as well. However, the solo self-employed are special

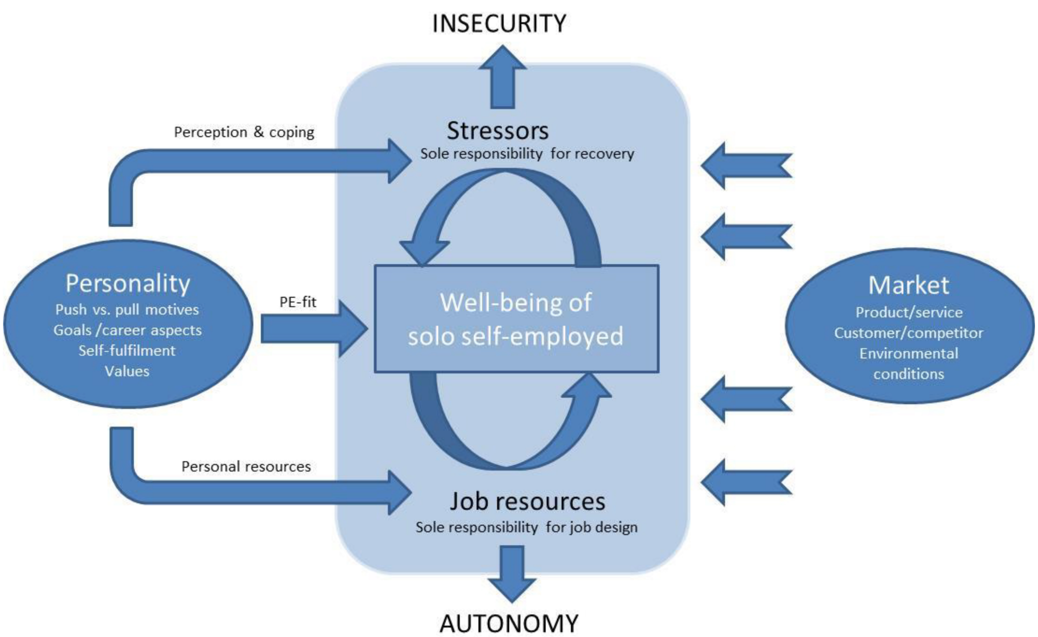

FIGURE 1 | A work-psychological stress model for small business owners.

TABLE 2 | Demands arising from solo self-employment.

Category	Sub-category	Example
(1) Task responsibility	(a) Sole responsibility	"One disadvantage is that you are on your own. . .and solely responsible for everything you do, have to do or want to do." *(female, 55 years, 10 years solo self-employed)*
	(b) Tasks outside occupational core tasks (misfit to occupational role)	"I would like to have someone to delegate organizational stuff to in my team. However, for me this would only be economically viable if I would work with several colleagues in a practice. In view of organizational effort, writing reports, telephone service, consultation hours and so forth. . ." (*female, 43 years, 6 years solo self-employed*)
	(c) Unnecessary tasks (senseless, dictated from outside)	"Things which do not result from workflow or a project, but which one actually has to do – i.e., posting things more frequently in social media or writing an article - not because it's necessary or it has been on my mind for some time now, but because it has to be done again. Thus, actually externally controlled and required by the outside world." (*male, 61 years, 24 years solo self-employed*)
(2) Temporal responsibility	(a) Time and performance pressure	"The other point includes rather an over-load in projects in which you have to provide an intensive service within a short period of time. These are real stress factors; I would say that this is the worst experience you can make." (*male, 47 years, 12 years solo self-employed*)
	(b) Flexibility overload	"As concerns flexibility, it means a shortcoming to me, if you can't limit yourself just a bit because at the end you say: 'Let's also do this and that.' And, as a result, you easily have a 55–65 h week and you are facing administrative matters and accounting problems." (*male, 40 years, 8 years solo self-employed*)
	(c) Lack of time for preparatory work and training	"Sometimes a little bit more time, a stress factor aroused by the fact that I have to manage an essential part of the income and consequently only have little time to familiarize myself with training. Reading, for example, – I always have a number of great books but I don't get around to reading them." (*female, 43 years, 6 years solo self-employed*)
(3) Responsibility for personal success (product responsibility)	(a) Task related uncertainties	"At one point you realize a little bit more surprisingly that the crux of this matter is the handling of not-knowing. Things you don't know about will hit you. These are risks. . .the risk factor and your own dealings with it." (*male, 59 years, 20 years solo self-employed*)
	(b) Conflicts of values	"I experienced it twice, that people during a seminar are not receptive to argumentations at all. Nowadays, the lack of receptiveness almost seems to be normal when you try to discuss with some Pegida* people or others, i.e., famous alternative facts you cannot reach anymore. I am just a qualified natural scientist. I like working with facts and logic. But, however, you cannot reach some people. I have a problem with this kind of people attending a course, which was paid for them. These are all things, which really weight on me." (*male, 59 years, 14 years solo self-employed*)
	(c) Handling of difficult customers (failures, critic)	"General conflicts with a customer, which are very rare, but, however, weight on me. If, for example, strong mistrust or criticism arises." (*male, 57 years, 32 years solo self-employed*)
	(d) Imbalance of effort and reward	"I think time expenditure is onerous as I work very long hours. Compared to the low income - I think you could be paid a lot better considering a 60 h week." (*male, 40 years, 8 years solo self-employed*)

(Continued)

TABLE 2 | Continued

Category	Sub-category	Example
(4) Responsibility for economic success	(a) Self-marketing	"That's what marketing is all about: acquisition, doing things up to the point I am facing a human, interested person with the ability to communicate – then, acquisition, writing offers and developing concepts don't cause me any problem. Compared to initiations of business connections and everything that might happen in an open space." (*male, 61 years, 24 years solo self-employed*)
	(b) Financial uncertainty (cost coverage)	"Direct disadvantages. Yes, sure, self-employment always means a financial game. You never know what a month will look like: will there be any incoming orders. That is always a bit of a problem. Sure, expenditures are rising continuously each month and they sometimes don't go with the expenses, therefore you always have to vary accordingly, thinking of how you could balance expenditure again.' (*male, 58 years, 2 years solo self-employed*)
	(c) Future prospects (job insecurity)	"Insecure order situation, noticeable dependence on a relatively few number of clients, a standing still feeling. The feeling of no actual further development. You just have the feeling that it cannot go on like this. In this sector, you somehow come up against limiting factors, payment comes up against limiting factors. You just have the feeling that development potentialities are extremely limited. If then, in addition, you have the feeling of a step backward. . .At a certain age you don't have the impression of rising strength." (*female, 55 years, 25 years solo self-employed*)
	(d) Social security (savings)	"If I don't work, I don't have any income. I don't have paid holidays, no continued payment of wages in case of illness. These are disadvantages, I guess." (*male, 54 years, 11 years solo self-employed*)
(5) Sole design of interactions in social structures – social problems	(a) Conflicts with colleagues	"Yeah, well, I was also told: 'What do you actually want? Give it a rest. You only take this place away from others. You don't need it. What do you actually want?' That's really sad and I ask myself: how deep does a doctor has to fall to say, think or feel something like that." (*female, 57 years, 24 years solo self-employed*)
	(b) Conflicts with external suppliers/workers	"As a self-employed person you are always stressed – especially in the decisive phase when tasks are to be handled and completed. That's the reason why I sometimes express myself very negatively in some contexts. Why hasn't this been done? Do I have to say that or give reasons a thousand times? Why has the invoice not been issued correctly? Have a look, if this is about 12 euros now and. . . More and more prices to make, actually nobody was talking about at all. I'm annoyed about these things, of course." (*male, 84 years, 51 years solo self-employed*)
	(c) Delegation not possible	"Uncertainty as a whole, planning and everything that goes with it. As an employer, you might more easily say, for whatever reasons: 'Please, do it; I don't want to.' or whatever. They are able to delegate much more. I cannot. Sure, I could instruct myself (laughs). But this is maybe the small advantage for employers." (*male, 58 years, 2 years solo self-employed*)
	(d) Lack of social exchange	"First of all, there's primarily nobody there to talk to. I think that this in itself is a burden. And the fact that I am the only person solely responsible for certain things." (*male, 54 years, 11 years solo self-employed*)

**Pegida, Patriotic Europeans against the Islamization of the Occident: Pegida believes that Germany is being increasingly Islamized and defines itself in opposition to Islamic extremism (Taken from: The End of Tolerance? Anti-Muslim Movement Rattles Germany. Der Spiegel. December 21, 2014).*

because they are shaped through their obligation to create and execute all work tasks themselves, handle time management, and face all possibilities of success and failure. The first category of *task responsibility* illustrates that the small business owner is in charge of all tasks (no matter whether the task is professionally adequate or goes beyond his or her professional knowledge), i.e., has the sole responsibility (1a). Moreover, beyond such legitimate tasks that come from a different professional field yet, the solo self-employed also reported being in charge of tasks that are either perceived as unreasonable (1b; misaligned with occupational role) or unnecessary (1c; dictated from outside). Both kinds of tasks must be evaluated as illegitimate tasks (Semmer et al., 2015) as they should not be expected from the person and contain an element of a lack of appreciation (Kottwitz et al., 2019b) leading to mental impairment (Semmer et al., 2015).

The second category of *temporal responsibility* summarizes aspects that are concerned with time. As stated by an interviewee, "Yes, the time. I always get the feeling the time is not sufficient; the time simply flies." Obviously, the burden of time cannot be shared in solo self-employment and so time and performance pressures (2a) occur. The time strain is further aggravated by the fact that time is equitable to money in business. This is comparably less of a concern in paid employment where a contracted working time is guarded by formal occupational safety regulations that define when an employer can expect his or her employee to work. In contrast, solo self-employment contains the danger of completely exhausting any time constraints (2b; overload) and to make a worker concentrate on tasks that are only immediately relevant for adding financial value (2c; no time for preparatory work and training). Additionally, there is knowledge of changing working strategies to maintain performance in the face of stress within the role of paid employment. For example, this can be seen by the abandonment of actions which are perceived to be of a low priority (e.g., searching for feedback, servicing; see Zapf and Semmer, 2004). This tendency might increase for the solo self-employed who have their economic success in mind, eventually leading to a dangerous balance between health and performance (e.g., McDowell et al., 2019).

The *responsibility for personal success* makes up the third category and is unique to solo self-employed people. Such success is difficult to achieve if demands remain obscure during order fulfilment (3a; task-related uncertainties) or contradict with their own personal values (3b; conflicts of values). Both aspects are well-known as work stressors within the concept of the role stress theory (Kahn and Byosiere, 1992). Feedback regarding work performed in solo self-employment can be given from customers or result from fulfilling the task itself. As customers are classified as a main source of appreciation (Jacobshagen and Semmer, 2009), a difficult customer relationship (3c; handling of difficult customers) might shatter the worker's self-esteem and cause strain (Semmer et al., 2007). It can also be a burden if the effort put into the job is disproportionate to the gained reward (3d; imbalance) both materially or immaterially in the form of appreciation or contract security. It has been demonstrated that an effort-reward imbalance (Siegrist, 2000) may cause emotional distress, potentially leading to the development of physical (e.g., cardiovascular) and mental (e.g., depression) diseases (Van Vegchel et al., 2005).

Next, the fourth category is concerned with the *responsibility for economic success* and relates to the design of the conditions which enable success. The solo self-employed oversee creating and securing economic success to enable their (and perhaps even their family's) living. Self-marketing (4a), and financial uncertainty (4b) refer to the recent income generation and cost recovery and reflect the current situation the person evaluates. In contrast to that job insecurity (4c; future prospects), and savings (4d; social security) are evaluations concerning one's future and hence forward-looking.

Finally, the *sole design of the interactions in social structures* goes hand in hand with social problems and conflicts. Interestingly, two-thirds of the interviewees reported making attempts for social involvement in the case of co-working (Spinuzzi, 2012). Obviously, solo self-employed individuals move around in social makeups which partially differ to those of the paid employed, as their interactions are primarily determined by suppliers, customers, and clients. Social problems can emerge at various interfaces with colleagues (5a) or external suppliers (5b) but can also be further caused by the lack of social support. Based on Fisher's definition (1985, p. 40), "social support is conceptualized as the number and quality of friendships or caring relationships which provide either emotional reassurance, needed information, or instrumental aid in dealing with stressful situations," and can broadly be differentiated into instrumental and emotional support (e.g., McGuire, 2007). In line with this differentiation, the interviewees complained about not having anyone to delegate tasks to: (5c) as well as a lack of social exchange (5d).

Resources Provided by Solo Self-Employment

Following the JD-R model (Demerouti et al., 2001), job resources are related to motivation and defined as "those physical, psychological, social, or organizational aspects of the job that are either/or functional in achieving work goals, reduce job demands and the associated physiological and psychological cost and stimulate personal growth, learning, and development" (Bakker et al., 2006, p. 312). Hence, beyond the demanding aspects of their jobs, the interviewees were questioned about relieving work-related factors, i.e., aspects that are beneficial and aspects that decrease the workload. **Table 3** provides the categories and sub-categories of the resources described by the interviewees, with additional sample phrases for each sub-category.

Across the interviews, *autonomy* turned out to be the most significant resource. Autonomy refers to the degree of freedom people experience in their work, i.e., if they are free to decide how they want to accomplish a certain task and are not getting precise instructions on how the task is to be handled. Autonomy is, according to self-determination theory (Deci and Ryan, 1985, 2000), one of the basic human needs that has to be satisfied. To have control over one's own working situation has been frequently shown to be a resource. It has direct effects on the well-being of the paid employed as well as indirect effects through diminishing the impact of work-related stressors

TABLE 3 | Resources provided by solo self-employment.

Category	Sub-category	Example
(1) Autonomy	(a) Product/customer decision	"Yes, of course, to be able to say no. I think that's the main point. Relief, yes. Being able to say no and being free to choose for me always means relief." (*female, 27 years, 7 years solo self-employed*)
	(b) Time management	"Of course, I am relatively flexible in planning my time, unless I am working on a specific project. In this case, a customer order definitely has priority but I love dividing my time freely, taking up and further developing new thoughts, discussing with colleagues or customers without having this terrible time pressure of not having to think things through to the end and nevertheless having to deliver results. I like it. The degree of freedom, of course." (*male, 47 years, 12 years solo self-employed*)
	(c) Decision latitude	"Customers who give me the choice of carrying out the project the way I want to. Decisions are up to me and I am the expert within a given framework. Then I can develop freely, that's what I like a lot." (*female, 59 years, 18 years solo self-employed*)
(2) Task responsibility	(a) Task completeness	"You basically have a positive feeling when purchasing, planning, implementing und finalizing." (*male, 55 years, 30 years solo self-employed*)
	(b) Diversity/variety	"A really large network of different people obviously connected by a different level of intensity and density. I met and argued with different people, ranging from small individual entrepreneurs to agencies and international top managers of large corporations – that is what diversity means to me. In another context, I would not have been able to experience all this." (*male, 61 years, 24 years solo self-employed*)
(3) Responsibility for personal success	(a) Sense of achievement (quality of work)	"I am doing a good thing with my educational work and that's a good feeling." (*female, 32 years, 4 years solo self-employed*)
	(b) Appreciation/respect	"Yes, as I said at the beginning, 100% recognition. I worked on a project and I completed the project. I somewhat don't have to share it with anybody else. Indeed, I alone have to accept criticism, but, thanks god, compliments prevail. I am solely praised for my work – and this is pretty cool." (*male, 53 years, 17 years solo self-employed*)
	(c) Good cooperation with customers (clients)	"Participants and customers who are solution-oriented involved as well as just motivated people and those who are dissidents. This kind of people might be a burden at work. People who do not really feel like cooperating and, at the same time, relieving if customers just like cooperating. And that's the main point, I guess, having deliberately cooperating customers." (*female, 25 years, 0.5 years solo self-employed*)
	(d) Meaningfulness (usefulness)	"A media business administrator recently said: 'This is fascinating. Exactly the problem we worked on only 1 week later arose in our company and it was so good that I was able to explain how this works.' These incidents are certainly extremely positive." (*male, 59 years, 14 years solo self-employed*)
	(e) Synergies related to multiple job holding	"It certainly also supports me in relation to my work at hospital, where I am not always entitled to have a 100% say." (*female, 47 years, 25 years solo self-employed*)

(Continued)

TABLE 3 | Continued

Category	Sub-category	Example
	(f) Balance of effort and reward	"A customer saying: 'We really worked intensively on this project, my expectations were exceeded.' is a relieving factor, of course. That's great, of course. Getting paid adequately and achieving a turnover represents a relieving factor as well." (*male, 47 years, 12 years solo self-employed*)
	(g) Learning and development options (further development)	"Personal development definitely has a decisive influence on the development of my own personality. This is worth its weight in gold. No matter if business turns up or down. . .the way I have changed skin like an onion within the last few years, I could give myself a slap on the shoulder, I just think that's good." (*male, 47 years, 12 years solo self-employed*)
(4) Personal economic success	(a) Income	"You know exactly that the X Euro you charged per hour will be yours in the end and that there is no other person saying: 'Here a few percent.' Ok, if you work in the service sector you are not paid a commission, but then I inform people on my hourly rate before and they have to count it up - which is normally no problem." (*male, 51 years, 18 years solo self-employed*)
	(b) Follow-up orders (security)	"Office working hours just like today definitively represent a positive factor since you get a feedback and incoming orders. This is motivating and just a pleasant matter." *(male, 58 years, 2 years solo self-employed*)
	(c) Building up of financial reserves/growth	"I built a house for myself and afterward built up the company in the industrial area, bought a bigger property, built a warehouse and, most importantly, I had industrial representations, i.e., from company L. or attic stairs from company R. and these roller shutter boxes I built in 1960." (*male, 84 years, 51 years solo self-employed*)
(5) Sole design of interaction in social structures – social resources	(a) Family support	"What I mentioned before, the tasks my husband kindly takes over for me. Economic and accounting matters in particular and any internet related issues. My husband even installed a newsletter for me. I would not have been capable to get this off the ground all by myself. This is exactly where he really perfectly completes me. Otherwise I would fail. Without him at my side, I would have thought about starting up my own business in the first place and if, from the beginning, he wouldn't had said: 'I will help you, I will do it.' (*female, 59 years, 1 year solo self-employed*)"
	(b) Support from colleagues	"Quality assurance in consulting actually plays a role. Intervention, supervision. . .Interaction and building up a room for your own questions. These are resonances. . .One of the reasons for this network, each of them with a personal and individual supervision." (*male, 59 years, 20 years solo self-employed*)
	(c) Support from suppliers/external workers (interfaces)	"Where good preparatory work has been done, let's put it this way, by the industry or the companies themselves having preset parameters and you know exactly: 'Ok, this is the right person, you have to go there.' That's a positive aspect, that's easy." (*male, 58 years, 2 years solo self-employed*)
	(d) Social independence	"First of all, I realized that, of course, I am not responsible for other people. In hospital, for example, the quality of training was really bad. In my last position as assistant medical director, there was a time when many partly poorly trained assistant physicians came from Eastern regions. That was very stressful since, in the end, you were responsible for what they did in hospital. And that was really a tough affair." (*male, 54 years, 11 years solo self-employed*)

(Zapf and Semmer, 2004; Sonnentag and Frese, 2012). In solo self-employment, autonomy is an inherent part of product and costumer decisions (1a; i.e., the decision of what and with whom to work), time management (1b; i.e., the decision of when to work) as well as a general decision latitude (1c; i.e., the decision of how to work). In contrast to employer entrepreneurs, this autonomy solely focuses on oneself as the requirements and needs of employees do not have to be taken into consideration. As stated by this interviewee: "I do not have to pay anyone more. That's a financial advantage increasing my flexibility."

Concerning sole *task responsibility,* it becomes evident that tasks have to be considered comprehensively and, according to action regulation theory (Hacker, 2003), should (2a) range from the processes of goal orientation, over planning, selection of necessary means as well as executing to inspection. This indicates that the meaning of the task, as well as the task feedback, becomes attributable to the person promoting well-being. Moreover, task variety (2b) decreases the risk of unilateral strain and promotes diverse knowledge, skills, and abilities.

Responsibility for personal success is derived from various resources for small business owners which are already known quantities from research with paid employed people. Its unique nature is caused by the quality of sole responsibility. This refers to one's own actions being traced back to oneself, and the strengthening of self-esteem through that process (Semmer et al., 2007). As a protective mechanism subjective success experiences, i.e., the sense of achievement (3a) promote well-being, health and recovery and vice versa. Simultaneously, perceived personal success lessens potential health impairments (Grebner et al., 2010). Appreciation and respect (3b) foster self-esteem and promote health (Semmer et al., 2007). A satisfying cooperation with clients or customers (3c) reinforces the sense of belongingness and perceived social support (Semmer et al., 2007) which is essential for the solo self-employed as it eases goal fulfilment and secures follow-up orders. Meaningfulness (3d) means that the person acknowledges the benefit of his or her product or service and attributes it with a societal value (Hacker, 2003; Zapf and Semmer, 2004). Being a central part of the job characteristics model of Hackman and Oldham (1976), meaningfulness has been shown to be related to, among other things, increased intrinsic motivation (Fried and Ferris, 1987). For those solo self-employed who execute two or more jobs (multiple job holders; Kottwitz et al., 2017), synergies through higher degrees of freedom in solo self-employment compensate the constraints of other employment forms (3e). A balance between efforts and rewards should be established in terms of professional gratuity (Siegrist, 2000; 3e). Learning and development options (3f), which result from coping with challenging tasks that broaden the existing skills, promote mental flexibility and sustain one's professional qualification (Hackman and Oldham, 1976).

In terms of resources, the sole responsibility of the worker for the *personal economic success* was further evaluated to be relevant. This includes securing the recent income (4a), the guarantee of follow-up orders in the short-run (4b) as well as the opportunity for savings (4c; building up financial reserves) in case of unfavorable times and for retirement.

Compared to the stressors in solo self-employment, the last resource refers to the social environment labeled as *sole design of interaction in social structures*. Besides family support (5a) indicating that the family partly takes on such tasks that co-workers from paid employment would have done to provide support from colleagues (5b) was reported including sometimes the establishment of large social networks. A productive collaboration with suppliers (5c; support from suppliers/external workers) was regarded to be relieving. Lastly, social independence (5d), i.e., being neither responsible for subordinates nor having to report to superiors, was regarded as an unburdening resource.

The Role of Micro and Macro Factors for Shaping the Work Situation

To answer our third research question, and to complete our work psychological stress model for solo self-employed individuals, we explored the role of personality as a micro aspect as well as the market situation as a macro aspect. We already know from studies with dependent employees that a poor economic situation can have a negative impact on the situation of employment (Bispinck et al., 2010). Also, the resources and stressors derived from solo self-employment are shaped by the framing conditions of the market in which the product or services are offered and indirectly affect well-being. Moreover, the motives of the choice of this type of employment play a role: these motives can operate either as individual resources for driving an entrepreneurial life style, fostering resilience and helping to deal with potential obstacles through entrepreneurial self-efficacy, or they are an indicator of individual vulnerabilities when the executed type of employment does not match with the preferred one.

Entry into self-employment can be motivated by push or pull factors (Nabi et al., 2015; Patrick et al., 2016). Push factors are defined as factors that lead to escaping an adverse situation, e.g., unemployment or unsatisfying job conditions (Moore and Mueller, 2002; Saridakis et al., 2014). In contrast, pull factors refer to positively evaluated aspects of an entrepreneurial career path containing, for example, expectations of autonomy regarding timing, implementation of one's own ideas, as well as higher income (Wang et al., 2012; Kolvereid, 2016). In the next chapters, we first describe the macro factors and how they are perceived by small business owners. Finally, we will then summarize the role of individual differences regarding the interviewees' motives for going into solo self-employment.

Macro Effects: Framing Conditions by the Market

The market and product context contains factors such as order situation, competitive pressure (i.e., rivalry among existing competitors), or regulations which are valid for specific products/services (see, e.g., Porter, 2008). Obviously, solo self-employed work has determined itself by the rules of the market which sets the framing conditions for unfolding or limiting autonomy. In the interviews, only demands or stressors, but no resources, were surprisingly named.

The interviews suggest a close link between autonomy and the market and product context: On the one hand, autonomy comes along as a resource for selecting the product (and in that the task) and the market that has to be acquired. On the other hand, the market itself settles the boundary conditions and determines the level of autonomy. When it comes to the perceptions of the role of the market, however, the solo self-employed reflected on it as a boundary factor for their autonomy. Details can be found in **Table 4**, where the categories and sub-categories of the interviewees with added sample phrases for each sub-category are illustrated.

Overall, the market and product contexts cause a *limitation in the decision-making processes*. The market (1a) determines which products and services can and cannot be sold and at what point in time. It also sets the potential access to clients or customers (1b) who have an impact on the design of the product or service as the small business owners must align their supply to their customers' demands. In some fields, external regulations (e.g., rules by the Association of Statutory Health Insurance Physicians) or closeness to other players in the market that drive competition (1c) determine the types of products or services, their quantity, and way of being offered and sold.

Also, there is a *limitation in flexibility* caused by the market. The customers (2a) determine the time frame of the order execution in certain ways. Knock-on effects (2b) in relation to one's own marketability were reported; withdrawal from the market leads to secondary costs.

Finally, diverse *dependencies* emerged. These contained local conditions (3a) such as the necessity to move to the customers and temporal conditions, (3b) and the time when the market is open for products and services. Moreover, coordination requirements (3c) with colleagues, suppliers, or external workers and other external factors (3d) being out of the control of the small business owners were perceived as constraining to one's independence.

Micro Effects: Personality, Motives, and (Fulfilment of) Goals

While the market serves as an external macro factor, internal micro aspects also have to be considered as inter-individual differences determine the perception of a situation and their ability to cope with it (Lazarus and Folkman, 1984; Zapf and Semmer, 2004). Based on Holland's theory of vocational personalities (Holland, 1996, 1997), individuals choose work environments as a result of many different factors. These include their attitudes, values, abilities, personality, and job characteristics, as well as factors relating to organizational structure and culture (Van Vianen, 2000). When it comes to health and well-being, however, not only are motives and goals important, but the fit of motives and goals to their respective working conditions or job characteristics are also particularly important. Research from the field of person-environment fit indicates that career productivity is best when there is a good fit, which increases the likelihood of success and satisfaction (Holland, 1996, 1997).

The interviewees were asked why they wanted to become solo self-employed from the start and what their goals were then. **Table 5** provides the five broad categories derived from the interviews and the sub-categories, with sample phrases for each sub-category. Notably, several parallels to the resources provided by those engaged in solo self-employment (see, **Table 3**) were found.

Most importantly, *self-fulfilment* was named. This was relevant to thematic products and services (1a; thematic interests) or professional decisions (1b; sole employment form for selected profession) as well as the freedom of choice regarding contracts and customers (1c). Moreover, the small business owners preferred to have autonomy regarding the methodology they used (1d; the how) as well as the time they work (1e; the when). Finally, to have control when it comes to task closure (1f) and to have a large variety of tasks (1g) were motives to follow this career path.

Next, the solo self-employed described *career aspects* as guiding motives for the choice of this employment type. Some reported that they liked the idea of having their own business (2a) which may grow eventually (2b; building up something). Also push and pull factors played a role as people entered a sector (2c; pull motivation). These included appreciated aspects of an entrepreneurial career path or exiting from a sector (2d; push motivation) because of unsatisfying working conditions in paid employment (e.g., Moore and Mueller, 2002; Saridakis et al., 2014).

In times of high uncertainty and with atypical employment on the rise (Selenko et al., 2018), the small business owners also reported having chosen their employment type to keep *job security*. This contains statements that indicated an avoidance of unemployment (3a) as well as of failed attempts to find paid employment because of one's qualifications (3b) or age (3c).

In addition, *income* was a central parameter of objective career success (Gunz and Heslin, 2005) and was regarded to be a prime motive. Specifically, the prospect of a better income (4a) as compared to the situation in paid employment as well as making profit (4b) was named. Additionally, the interviewees aimed at achieving a balanced fit between effort and reward (4c; adequate income; Siegrist, 2000) through solo self-employment. Finally, some were motivated by having financial independence (4d) from others.

The last reason was that a solo self-employed job offered a better *compatibility with one's private life*. Here, the opportunity to reduce working time (5a), the encouragement of compensation from work (5b; i.e., promoting a personal balance) as well as an enabling of the fulfilment of family or private responsibilities seemed to be the driver to choosing the entrepreneurial career path.

DISCUSSION

Interpretation of Results

The aim of the present study is to gain an in-depth understanding of how small business owners in Germany perceive their working situation, considering stressors and resources as well as motives and the surrounding market conditions. Using expert interviews (Bogner et al., 2009), we aimed to answer three research questions: first, to get an understanding of the well-being of solo self-employed people by reflecting their options to recover. Second, we aimed to explore the stress or-strain relationship

TABLE 4 | Stress factors in the market and product context.

Category	Sub-category	Example
(1) Limitation in the decision-making process	(a) Market	"For a very long time, actually for the longest period of time of my self-employment, it didn't play a role at all. Only for a few years, I would say since the financial crisis in 2008/2009. Customers are financial services, insurance companies and building societies, which are the most shaken groups on the market. Within the course of the last three years, I cancelled 90% of the counseling budget of my three biggest customers! And afterward they are a flypaper on the market." (*male, 59 years, 20 years solo self-employed*)
	(b) Customer	"I am flexible in my work planning. Sure, the customer has to be fine with it, but in general, he orders something from me because he, let's say, knows my signature." (*male, 47 years, 1,5 years solo self-employed*)
	(c) Competition	"To be stuck in administration and billing related matters." (*male, 40 years, 8 years solo self-employed*)
(2) Limitation in flexibility	(a) Customer	"I have now slightly adapted my program for this year. Last year, I offered walks during the week and finally realized that they were not well booked since most customers preferred walks on the week-end." (*female, 59 years, 1 year solo self-employed*)
	(b) Knock-on effect	"The disadvantage is that if I work less I get fewer orders, if I work a lot, I get a lot of orders. This is something, which will probably be asked more often. That's the biggest problem of self-employment. If I say that I would like to work a bit less, I immediately get less orders the following year." (*female, 56 years, 30 years solo self-employed*)
(3) Dependence	(a) Local conditions	"The catchment area comprises almost 100.000 less people than in G. In Germany, M. is the city with the most expensive rents and students have less money. As a result, students spent less money for parties, thus club owners earn less money and pay DJs less money who, in return, are to pay their employees a minimum wage. Therefore, we have less money than a city like F. or G. That means it has something to do with where I play music." (*male, 32 years, 7.50 years solo self-employed*)
	(b) Temporal conditions	"Temporal conditions in relation to holidays. You just don't have holidays or rather only the holiday you pay yourself. That means you don't have the safety of 'I am continuously payed even if in August there won't be any courses because of my holidays.' These are company holidays – which don't apply to me. I must plan completely differently. I must split costs accordingly for the entire period. That's a second disadvantage." (*male, 59 years, 14 years solo self-employed*)
	(c) Coordination with colleagues/suppliers/external workers	"There are of course situations in which I enter into an exchange with people and I surely face certain dependencies as regards termination, i.e., when we work together in a project in which I am certainly not solely involved and make arrangements with other people. In this case, it might sometimes be a stress factor, if I say 'Okay, I have to discuss this with somebody,' or 'We have to find a date,' or 'I have to check something.' But what I generally consider positively is the fact that I am not alone." (*female, 25 years, 0.5 years solo self-employed*)
	(d) External factors	"One stress factor is my dependence on the weather. This is really stressful for me, since, for example on weekends, when I know I have to complete certain tasks outside, I am already sitting there checking what the weather will look like. This is stressful." (*male, 53 years, 21 years solo self-employed*)

TABLE 5 | Motives for choice of solo self-employment.

Category	Sub-category	Example
(1) Self-fulfilment	(a) Thematic interests (product decision)	"I didn't aim at solo self-employment. You don't have a big choice or a variety of possibilities. If, as a photographer, you don't want to be employed in a photo studio where you have to take pictures of sandwiches all day, you become a freelance photographer. It's the same with graphic designers." (*male, 47 years, 1,5 years solo self-employed*)
	(b) Solo self-employment as sole employment form for selected profession	"First of all, there was no 'why' since in my sector, there is no other possibility. As a dancer, dance educator and fitness trainer you are always solo self-employed. You didn't have a choice." (*female, 27 years, 7 years solo self-employed*)
	(c) Freedom of choice regarding the execution of contract (customer decision)	"I really wanted to get things moving for customers with a certain strategic or knowledge interest. I was originally employed in a company structure in which you sometimes asked yourself whether you are really needed or not. The question is whether you always want to ask yourself why you are doing a certain job. Insofar, I like working together with customers who, of course, have a concrete concern they are willing to pay for. Thus, this is about real exchange and interest and not only a formal and functional interest. This is at least what I would like to think. Working together with people on a relevant issue." (*male, 47 years, 12 years solo self-employed*)
	(d) Autonomy regarding method	"If I think that something doesn't work as successfully as it should, I want to be able to intervene. If people don't listen to my advice I want to be free to decide that this is their decision which, however, I don't support and consequently leave them alone." (*male, 51 years, 18 years solo self-employed*)
	(e) Autonomy regarding time	"It was the flexibility to do things with R. and to decide solely when I would go to France in order to visit my family that confirmed my decision of self-employment, i.e., not to work in a wine shop. I don't want to be limited in actions, I cannot image." (*female, 59 years, 18 years solo self-employed*)
	(f) Task closure	"I aimed to operate in a holistic work enabling me to take care of a women during pregnancy, at birth and even afterward. This is actually the ideal image of my job." (*female, 47 years, 25 years solo self-employed*)
	(g) Variety	". . .variety. I have the feeling that my job is just varied." (female, 55 years, 25 years solo self-employed)
(2) Career aspects	(a) Own business	"At the beginning I said that I would build up a joiner's workshop and that 1 day they will have to carry me out of it feet first and that was it." (*male, 53 years, 17 years solo self-employed*)
	(b) Building up something (growth, sustainability)	"That corresponds to what I said before. In principle, I aimed at setting up a more classical consultancy with a pyramid structure of chief advisors and other consultants, assistants and trainees including a solid secretarial structure, local organization, professional marketing and advertising strategy and so on." (*male, 57 years, 32 years solo self-employed*)
	(c) Entry into a sector (pull-motivation)	"With the goal in mind what motivated me or the fast entry into a sector which otherwise I would not have been able to get into." (*female, 25 years, 0.5 years solo self-employed*)
	(d) Exit from a sector (push-motivation)	"I had simply imagined continuing to work in my previous profession until retirement. I just didn't find that tempting at all." (*female, 59 years, 1 year solo self-employed*)
(3) Job security	(a) Avoidance of unemployment	"I actually imagined being active as independent works council chairman and lecturer at the same time, of course, until retirement. That was my plan until Hartz IV** was introduced. Then suddenly I was sitting there. I have pondered for a few months or almost half a year. Should I look for a job somewhere else, but a job as what? Where? How?" (*male, 59 years, 14 years solo self-employed*)

(Continued)

TABLE 5 | Continued

Category	Sub-category	Example
	(b) Insecurity regarding qualification	"When I was a heating engineer, I was self-employed as well. Then I gave up. Afterward I had worked as employee for a long time and now again. Since the company I last worked for became insolvent, I applied for a job somewhere else where people told me that I was overqualified. Then I said to myself: "Ok, I will start my own business." (*male, 61 years, 4 years solo self-employed*)
	(c) Insecurity regarding age	"I became unemployed but due to my experience not everybody disposes of, I thought that I would certainly find another job some time. However, it always came down to age being a point where most people said: 'No,' you are too old for us; we are looking for younger people, if possible at the age of 35, with a degree and 20 years of professional experience." (*male, 58 years, 2 years solo self-employed*)
(4) Income	(a) Better income (improvement)	"There were two jobs for me on the job market. I could start somewhere for 1,200 euros what was not actually a salary I was looking for, because for 1,200 Euro net, I would have said soon: 'I don't have to get up in the morning.' That is not interesting for me. Especially since occurring costs or costs, which might occur for the employer, would be passed on to the agent, i.e., paper, etc. I would have had to do everything myself and 1,200 euro is by far not enough." (*male, 58 years, 2 years solo self-employed*)
	(b) Making profit	"One goal was definitely always a financial goal since the potential of earning money in this sector was very, very high, at least 12 years ago. So that's the financial issue." (*male, 47 years, 12 years solo self-employed*)
	(c) Adequate income (gratification)	"I finally wanted to be paid according to my educational level because at one point I just became too expensive for my former employer. Or rather they didn't want to accept my salary claim." (*male, 40 years, 8 years solo self-employed*)
	(d) Financial independence	"That was first and foremost financial independence, as I described before. I have always been annoyed that people benefited from my performance, whether it was the master, manager or director in F." (*male, 84 years, 51 years solo self-employed*)
(5) Compatibility with private life	(a) Reduction of working time	"At that time, one goal was definitely to work less since my weekly working time amounted to 60–80 h and I thought that even from a health-related aspect I would not be able to stand this pace if I stay in this job. Although, I actually would have had, from a purely formal point of view, very good prospects in my former job." (*male, 54 years, 11 years solo self-employed*)
	(b) Encouragement of personal balance	"A job offering a good balance between personal interests, free time and job engagement, involving pleasure and further development as well as working together with pleasant people." (*male, 61 years, 24 years solo self-employed*)
	(c) Fulfilment of family/private responsibilities	"I decided to stay at home with my children and that was most compatible with self-employment. That was actually the main reason." (*male, 53 years, 21 years solo self-employed*)

***Hartz IV, a set of recommendations presented by a commission in 2002 under the lead of Peter Hartz. In the fourth stage of the proposed reform of the German labor market, the former unemployment benefit for the long-term unemployed and welfare benefits were merged, so that both are roughly at the lower level of the former social assistance.*

building on ideas of the transactional stress theory by Lazarus and Folkman (1984) in order to develop a work-psychological stress model for the solo self-employed. Third, we further analyzed how factors within the person (e.g., micro level, personality) and in the market (macro level) add to understanding the causes of mental well-being or strain.

Regarding the first research question, we found that well-being is an important issue to consider. For example, the small business owners in our sample demonstrated signs of presenteeism (i.e., working in case of illness; Johns, 2010). This indicates that when people begin to go into business they have other priorities than protecting their health. A high risk of self-exploitation seems to be inherent within an entrepreneurial career path. In pursuing desired success, they overcommit to the business at the expense of their health and family work balance (McDowell et al., 2019). As there are no protections by labor protection laws regulating their working time or time for recovery this risk is hard to control from the outside. Moreover, the solo self-employed have the autonomy to regulate their work patterns, and therefore turn into their own abusers of their right to recovery.

In considering the second research question, we found some stressors and resources which were comparable to other jobs but having sole responsibility for each and every part of the working conditions makes them especially vital. In studies with dependent employees, it became clear that too much responsibility and a role overload is perceived as a stressor that is associated with health impairments (e.g., Kivimäki et al., 2002; Vanishree, 2014). Solo self-employed people also report various stressors (e.g., charge of all tasks, lack of time or handling of difficult customers) due to having sole responsibility. At the same time, they also view responsibility as a resource and opportunity for self-realization. Self-realization is in turn positively related to health. Thus, the double role of responsibility in the work of the solo self-employed is unique.

When trying to answer the third and last research question, we found that aspects on the micro and macro level should not be neglected when looking into the stress—strain relationship of solo self-employed people. For the macro level, the market conditions strongly determine how work can be created considering both stressors and resources as it constrains the flexibility and affects health and strain indirectly. Moreover, high dependency from suppliers, customers, and colleagues reduced autonomy. This turns responsibility into a stressor and decreases well-being. Moreover, the macro level is interrelated with the micro level by shaping working conditions. They determine if a person-environment fit (Caplan, 1987) can be achieved. Perceived congruence between personal and work environment factors results in more readiness for a given career path and a higher well-being (Jiang and Jiang, 2015). Micro aspects such as motives, interests, goals, abilities, or personality factors are relevant for the readiness to go into solo self-employment (Baluku et al., 2018c). It is also relevant for selecting the specific field to which the product or service belongs to and in which market (Holland, 1996, 1997). Finally, it is relevant when evaluating, framing, and coping with job characteristics (Lazarus and Folkman, 1984; Lazarus, 1999).

Finally, our developed stress model highlights the specific conditions of solo self-employed people for whom resources and stressors are more closely linked than for paid employed individuals or employer entrepreneurs, and for whom resources and stressors are equally determined by their sole responsibility. On the positive end, autonomy as an overarching framework, which is based on self-determination theory (Deci and Ryan, 1985, 2000), is one of the basic human needs that can be perfectly satisfied through solo self-employment if people prefer autonomous work and sole responsibility (*micro aspects*). To achieve this, they create their working conditions in a way that autonomy can count as a work-related resource and not so much as a stressor (*meso aspects*), and when the macro aspects of the market allow flexibility (*macro aspects*). However, on the negative end, solo self-employment is associated with high insecurity caused by uncertain market conditions, a high dependency on customers or suppliers, a low person-environment fit by being pushed to this career path, or by dealing with adverse working conditions and having no recovery opportunities. This type of employment would be bad for a person's well-being.

Strengths and Limitations

To the best of our knowledge, this is the first study examining the interplay of stressors and resources shaped by market conditions and the personal motives of solo self-employed people. While there is a lack of research overall with this specific group, it is clearly a strength of our study to explore their working conditions in detail, as this group is less secured by support from specific unions or other representatives as the group itself is extremely diverse. In our study, we interviewed a cleaning woman as well as a physician. It might still be difficult to reflect the broadness of this employment type.

While we used a representative study for our typology to build a broad picture on solo self-employed people from various sectors, the economic situation and demographic data such as age and gender might still not reflect people at extreme ends that are not contained in the representative data. For the people on the very prestigious end, they might not have the time or feel the need to take part in the study – so they might not be reflected in our sample of the solo self-employed. However, it can be assumed that these people have advantageous working conditions. The lack of people on the precarious end might be more problematic as they might be involved in precarious types of solo self-employment. To be part of the BIBB/BAuA employment survey of the working population on qualification and working conditions in Germany, one must be fluently able to speak the German language on the phone. Hence, there might be small business owners that never entered into the data pool as they were not German speaking. Also, as our interviews were conducted in German, it would have been difficult to interview such solo self-employed people who were not able to reflect on their situation in German. This must be considered when generalizing the data.

Theoretical Contribution and Practical Implications

Although there is growing literature on individual psychological factors that determine entrepreneurial intentions, persistence, and success (e.g., Baluku et al., 2018b), little is known about how the job of being a small business owner looks like from a work-psychological perspective. Our study adds to the limited research on the specific working conditions of small business owners (in our case: solo self-employed). A significant group of people, not only in Germany, are engaged in solo self-employment. Moreover, there is a paucity of research focusing on the realities of their work and working conditions, their lived experiences of success and constraints, and how these affect their other domains of life. Our study, therefore, generally brings knowledge to some important insights that can stimulate research into the different issues involved in solo self-employment that affect the lives of people in this type of employment.

Arguably, it has been observed that entry into self-employment tends to increase in the face of changing dynamics in labor situations, such as limited opportunities for salaried positions (Rissman, 2003; Falter, 2005). While the German labor market still offers a variety of jobs in dependent employment, there are occupational fields (e.g., journalism, nanny) where solo self-employment is quite common. Yet, not all small business owners voluntarily chose and follow this career path as shown in our interviews. Particularly for those being pushed into self-employment, they were not attracted ("pulled") by its autonomy and decision latitude. Hence, they might face the downside of this employment type to a greater degree as they might have the same amount (or even more) of job stressors (as high economic insecurity, dependency/conflicts with clients) but will not perceive the inherent employment opportunities of autonomy as a resource (in contrast to those who chose this career path to fulfill their need for autonomy). Future studies should further look into the impact of voluntariness in the long run and try to uncover if solo self-employed workers get used to the (once "unwanted") entrepreneurial role if they succeed with their business and eventually start to like this employment type with its autonomy and sole responsibility. This would offer more job resources to buffer strain and sustain health. They could also possibly continue to "suffer" under this role as it does not match their preferences ("person-career-fit"), resulting in consequences for their health and well-being.

Moreover, we conducted interviews in a developed country where the pressure to become an entrepreneur is comparably low than in less developed countries, where entrepreneurship might be the only viable option (e.g., Baluku et al., 2019, 2020). Hence, the "push" to start a business might increase for people in developing countries. Financial security and social safety could be even lower there, resulting in poorer working conditions and health risks. Yet, it could also be the case that those small business owners have levels of higher resilience. Further research should take work situations, resources, stress, and strains from a cross-country and cross-cultural perspective into account and to add further macro factors – such as culture, economic conditions, or the social safety net of a country – to our developed model.

Notably, our results also have implications on dependent employees. With increasing flexibility, more dependent employees are also working in a highly marketable way and have to organize their work themselves outside of company structures. The current changes in work forms also require a strengthening of the health competence of employees, their participation in the design of work processes, and the support of non-business actors (e. g. health insurance companies).

Our findings indicate that some self-employed individuals have trouble with the time required for recovery from work related fatigue and from sickness. The question that emerges from this finding is what can be done to support solo self-employed individuals to have adequate time and personal resources for recovery despite the pressure that work places on their time. Recovery being a relevant issue also became apparent when questioning the interviewees about their wishes and further suggestions regarding measures of occupational safety and health (OSH). As one small business owner stated, "I would simply say to take a cure somewhere means for me being out of professional life for 3 weeks. It does not work. It's fatal, that does not fit." Limitations in structural opportunities (e.g., participating in a back-training course was impossible due to time reasons), lack of information on OSH (e.g., how often one should take breaks) or no adequate support for the self-employed at all (e.g., health insurances should offer courses on occupational safety and health protection) were reported.

Similarly, there are aspects in the work context and personal motives that are potential stimulators of strain and stress. Hence the question is how solo self-employed individuals can be supported to cope with the demands exerted by professional and personal goals. An important insight here can be derived from positive psychology. Given that psychological resources and capital such as self-efficacy and resilience are reported to support the psychological health of entrepreneurs (Baron et al., 2016), it is important for the relevant authorities to develop interventions that support the development of psychological resources of small business owners.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethical committee of the Faculty of Psychology (Marburg). The patients/participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable data included in this article.

AUTHOR CONTRIBUTIONS

KO, LH, and MK collaborated in a project investigating the health of people in solo self-employment from which the data was collected. MK and KO developed the concept. KO, MB, and MK structured the ideas for this article. MK performed the analyses and reporting in German. KO wrote the first draft. All authors read and approved the final manuscript.

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Gender Role Characteristics and Entrepreneurial Self-Efficacy: A Comparative Study of Female and Male Entrepreneurs in China

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This study, based on Bem's (1974) gender schema theory, investigates gender differences in and the relationship between gender role characteristics and entrepreneurial self-efficacy (ESE) of 261 female and 265 male entrepreneurs in China. The results show that male and female entrepreneurs did not differ significantly in ESE or in masculine gender role characteristics, but differed significantly in feminine gender role characteristics. Examining four different stages in the entrepreneurial life cycle, we find that for female entrepreneurs, feminine characteristics had a positive influence on ESE in the searching and planning stages of entrepreneurship, and masculine characteristics had a positive influence on ESE in the searching stage. For male entrepreneurs, feminine characteristics had a positive influence on ESE in the searching and planning stages, and masculine characteristics had a positive influence on ESE in the marshaling and implementing stages. In addition, one feminine characteristic, "Friendly," showed a positive association with male entrepreneurs' ESE in the marshaling stage. Overall, the feminine gender role factor of "Friendly" and the masculine gender role factor of "Compete" played a greater role on ESE than other characteristics. Implications of the findings are discussed. This study contributes a new perspective to extant research on entrepreneurial self-efficacy and female entrepreneurship.

Keywords: gender role orientation, entrepreneurial self-efficacy, female entrepreneur, male entrepreneur, China

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INTRODUCTION

Previous research offers diverse views of the relationship between gender and entrepreneurial self-efficacy (ESE). Women embark on entrepreneurial careers less often than men do, which some studies contend may be ascribed to a higher level of ESE of male entrepreneurs than female entrepreneurs. For example, Scherer et al. (1990) found that the ESE of female MBA students was lower than that of male MBA students, and that female students were also lower than male students in their aspirations of entrepreneurship as a career choice. Wilson et al. (2007) found that gender differences in ESE appear early, with implications for entrepreneurial career choices. Other scholars contend that women appear to be less self-assured that they have the skills of starting up companies (Koellinger et al., 2008). Yet, Chen et al. (1998) and Zhao et al. (2005) found that gender is not associated with ESE. Building on previous scholarship on the relationship between gender and ESE, the present study examines gender differences in and the relationship between gender role characteristics and ESE in a Chinese context.

Entrepreneurial self-efficacy is an important psychological variable in entrepreneurship. Most previous studies have focused on the impact of ESE on entrepreneurial intention, entrepreneurial behavior and entrepreneurial performance, representing the formative mechanism of ESE on various entrepreneurial outcomes. As Palmer et al. (2019) note, few studies examine ESE from the perspective of the psychological characteristics of senior leaders of SMEs. By focusing on the gender role characteristics of entrepreneurs, the present study addresses this gap.

A notable example of the study of entrepreneurs' psychological characteristics is Stephen and Mary (2008), who examined the influence of entrepreneurs' gender-role identification on ESE, and found a positive association. However, their study was based on MBA students (only 11% of the 216 individuals studied had their own companies). The applicability of their conclusions to entrepreneurs needs to be examined and verified. Based on this previous study by Stephen and Mary (2008), in the present study we examined the impact of gender-role identification on ESE for 526 Chinese entrepreneurs (265 males and 261 females). Our study further subdivides the structure of gender roles into masculine and feminine dimensions, discusses the impact of each dimension on ESE at each of the four stages of entrepreneurship: searching, planning, marshaling, and implementing (Wilson et al., 2007; Kickul et al., 2009), and compares the relationship between gender role orientations and ESE for male and female entrepreneurs. The main research questions of the study are: (1) Is there a gender difference in ESE? and (2) What are the effects of gender role orientations on ESE and is there a gender difference in the effect?

THEORY AND HYPOTHESES

Gender Role Orientation

Gender role theory posits that gender roles consist of people's expectations and beliefs about normative gender differences in psychological and behavioral characteristics (Eagly et al., 2008). Gender roles are social roles that encompass behaviors and attitudes considered acceptable or appropriate based on a person's biological or perceived sex. Constantinople and Anne (1973) developed a theoretical framework, in which the similarity of the two genders were discussed. In this framework, Constantinople (1973) proposed that males and females are two separated structures, rather than the two poles of a continuum. Building on this perspective, Bem (1974) created the Bem Sex Role Inventory (BSRI) which recognizes that individuals may demonstrate both masculine and feminine characteristics. Bem's views were widely applied in later research (e.g., Spence et al., 1980; Stieger et al., 2014). Studies on the influence of socialization on male and female college students' gender roles indicate that men's masculinity is considerably higher than women's, and women's femininity is higher than men's (Stephen and Mary, 2008; Zhi, 2011).

Previous research indicates that all males, including those that exhibit masculine and feminine characteristics, are attributed to possess the psychological characteristics (i.e., the self-concept and self-esteem) suitable for being a leader (Kent and Moss, 1994; McCabe et al., 2006). Drydakis et al. (2018) found that women who exhibit masculine personality traits are more competitive than those displaying feminine personality traits.

In the entrepreneurship literature, Holm et al. (2013) found that a sample of Chinese entrepreneurs had a higher desire to enter competition than non-entrepreneurs, which is consistent with male gender role characteristics. While Gneezy et al. (2003) found that males performed better than females in competitive environments, a study of 105 female entrepreneurs and 69 male entrepreneurs found that female entrepreneurs have a higher demand for autonomy and the experience of new things (Sexton and Bowman-Upton, 1990), which are also masculine gender role traits. Masculine personality traits increase perceptions of competency levels and leadership capability, and therefore both male and female entrepreneurs benefit from exhibiting masculine characteristics. Further, since the male and female respondents in the present study are established entrepreneurs, both groups are likely to be confident (a masculine role trait) in their entrepreneurial abilities.

Since feminine characteristics are not as highly valued as masculine characteristics for leadership, and since women are more likely to exhibit feminine characteristics, we hypothesize a gender difference between male and female entrepreneurs in feminine gender role traits, but not masculine gender role traits. Thus,

> *Hypothesis 1. There are no significant differences between male entrepreneurs and female entrepreneurs in masculine role characteristics, but there are significant differences in feminine role characteristics.*

Entrepreneurial Self-Efficacy

Self-efficacy is a core concept influencing an individual's motivation and behavior (Albert, 1990; Bandura, 1990). It is "the perception of one's capabilities to attain performance outcomes" (Audia et al., 2000, p. 4). Related to entrepreneurship, self-efficacy can drive an individual to conquer the various hurdles and challenges of starting-up and operating an enterprise (Shanea et al., 2003). One of the central ideas in self-efficacy theory is that engagement and persistence in a given activity is a function of an individual's assessment of their skills and capabilities to successfully accomplish the activity as well as cope with challenges in the environment (Arshad et al., 2020).

Entrepreneurial self-efficacy (ESE) is the specific application of Bandura's (1990) concept of self-efficacy to entrepreneurship (Chen et al., 1998). Chen et al. (1998) proposed that ESE refers to an individual's confidence in achieving the role of an entrepreneur and completing entrepreneurial tasks, and suggested that it is one of the predictive variables of the likelihood of being an entrepreneur. ESE reflects the ability to prevent and control negative actions and thoughts (Drnovsek et al., 2010). Previous research has found that ESE is positively related to firm performance (e.g., Miao et al., 2017).

ESE develops from entrepreneurial socialization as entrepreneurs deal with various unexpected problems and difficulties in the process of establishing a business. Since they have successfully started a business, ESE is generally higher for entrepreneurs than the general public (van der Westhuizen and Goyayi, 2020). While male and female entrepreneurs should have higher ESE levels than the general population, there is no theoretical reason to hypothesize an innate gender difference in ESE. Since our study investigates those who have already established entrepreneurial businesses, we posit that there will be no differences in ESE between male and female entrepreneurs.

Although there are fewer female entrepreneurs than male entrepreneurs, we posit that women are less likely to intend to or become entrepreneurs due to gender-restrictive social norms, and not because women's ESE is lower than men's. Attitudes toward entrepreneurship, which have a positive impact on entrepreneurial intentions, are driven by social norms. Social norms regulate individuals' attitudes and lead to the adoption of socially acceptable actions. Arshad et al. (2016) found that while ESE had a greater effect on the entrepreneurship attitudes of males than females, perceived social norms had a greater effect on female entrepreneurship attitudes. Entrepreneurship attitudes of women were found to be primarily driven by community feelings and aspirations (Arshad et al., 2020). Social norms regarding gender roles generally hold that men are more suitable as entrepreneurs since they are perceived as more agentic, independent, and as working outside the home (Delmar and Davidsson, 2000; Eagly et al., 2008) and women are perceived as more communal and more concerned with the harmonious functioning of groups and interrelationships (Skitka and Maslach, 1996; Eagly et al., 2008). Thus, we hold that gender difference in intentions to become an entrepreneur is not caused by gender differences in ESE, but the result of social norms. In previous research, entrepreneurship has been found to enhance women's empowerment, self-drive, and autonomy (Zgheib, 2018).

Hypothesis 2. There is no difference in the ESE of male and female entrepreneurs.

The Relationship of Gender Roles and ESE

To better understand the relationship between male and female entrepreneurs' gender role characteristics and their ESE, this study investigates ESE at four stages of entrepreneurship: searching stage, planning stage, marshaling stage, and implementing stage (Wilson et al., 2007; Kickul et al., 2009). Each stage of the entrepreneurial life cycle has multiple functions, with 10 different tasks (Wilson et al., 2007).

The effect of gender role identification on entrepreneurial self-efficacy is first reflected in entrepreneurial opportunity identification. Because of their different cognitive styles, male and female entrepreneurs may differ in their recognition of entrepreneurial opportunities. Entrepreneurial opportunity identification is an information processing practice that depends on individual cognitive characteristics (Gaglio and Katz, 2001). Cognitive style can influence the preferences of individual entrepreneurial cognition. Individuals with an intuitive cognitive style tend to pursue unique ideas rather than sticking to rules and standards. They are more creative and have higher innovation performance than individuals with an analytic cognitive style (Kim et al., 2012). Individuals with an intuitive cognitive style are better at identifying entrepreneurial opportunities, and they are more likely to identify opportunities for innovation (Baldacchino, 2013).

When entrepreneurs focus on identifying entrepreneurial opportunities (trying to develop a new product, service, or technology), they tend to think intuitively. Intuition reflects differences among individuals based on environmental event sensitivity and is a key element in identifying opportunities for entrepreneurs (Kozhevnikov et al., 2014). Intuition is an unconscious, holistic, fast, emotion-driven judgment process (Dane and Pratt, 2007; Kozhevnikov et al., 2014). In the process of their socialization, women learn the skills of relationship and empathy, and are socialized to be sensitive to their environments and think in intuitive ways. Entrepreneurs with more feminine characteristics tend to employ an intuitive cognitive style, which is more effective in identifying entrepreneurial opportunities.

Identifying entrepreneurial opportunities can stimulate entrepreneurs' confidence and motivation, which helps to enhance their self-efficacy in the stage of entrepreneurial search. Therefore, we expect that:

Hypothesis 3. Feminine gender role characteristics are positively associated with the ESE of male and female entrepreneurs in the searching stage.

The cognitive style of business leaders has an impact on entrepreneurship and is related to innovation ability (Li et al., 2020). Jeffrey et al. (2012) suggested that an individual is more likely to be an entrepreneur if they are aggressive, adventurous and self-disciplined. These characteristics are typically regarded as masculine gender role characteristics. Individuals with masculine gender role characteristics tend to be rational and have an analytical cognitive style. An entrepreneur's rational, analytic, and cause-and-effect-oriented processes organizes their intent and action, and are the foundation of a formal business plan, opportunity analysis, resource acquisition, goal setting, and observable goal-directed behavior (Bird, 1988). Olson (1985) also pointed out that when entrepreneurs plan and execute new enterprises, their information processing is significantly analytical. Brigham et al. (2007) showed that individuals with an analytic cognitive style show higher self-efficacy than those with an intuitive cognitive style, and they tend to get more satisfaction during the planning stage.

Similar to the planning stage, the marshaling or resource integration stage also requires analysis and processing, especially when financing business endeavors. A CEO's cognitive ability helps them to make decisions that are conducive to maintaining the sustainable development of the company (Sarfraz et al., 2020). The marshaling stage also demands high competitiveness, enterprise and networking capabilities, especially in raising necessary resources and financing for the business. Since community culture plays a large role in ESE (Coleman and Kariv, 2014), masculine characteristics will likely enable enhanced access to community resources and financing.

In the implementing stage of entrepreneurship, individuals demonstrating male-typed analytic characteristics likely exhibit greater trust in their own abilities, and stronger confidence in accomplishing activities like prediction, preparing, designing, and organizing. These logics are aligned with Kickul et al. (2009) who suggested that individuals with an analytic cognitive style are likely to demonstrate stronger ESE at the planning, marshaling, and implementing stages of entrepreneurship than those with the intuitive cognitive style. Thus,

Hypothesis 4. Masculine gender role characteristics are positively associated with the ESE of male and female entrepreneurs in the planning, marshaling and implementing stages.

METHODS

Data were collected through an anonymous survey, conducted in accordance with the ethical rules and approval of the Ethics Committee of Shanghai Normal University, China. All participants gave informed consent.

Sample

The study's sample consisted of male and female entrepreneurs of small and medium sized businesses in the developed regions of East China. We selected this region because it is active in entrepreneurship, with many entrepreneurs in this region. We conducted a two-phase questionnaire survey. In the first-phase survey, we distributed questionnaires to female entrepreneurs studying in Executive MBA programs at institutions in which we teach as well as other entrepreneurs in our personal networks. In the second-phase survey, we turned to the head teachers of a primary school in Zhejiang Province of China for help in distributing questionnaires to their elementary school students' fathers who are entrepreneurs. We distributed 350 questionnaires to female entrepreneurs and collected 312 completed survey responses. 370 questionnaires were distributed to male entrepreneurs and 325 completed survey responses were collected. After filtration, the final number of the usable questionnaires was 526, of which 261 were from female and 265 were from male entrepreneurs. **Supplementary Appendix 1** provides the questionnaire items. **Table 1** shows descriptive information about the sample.

Measures

We utilized Bem's Sex Role Inventory (BSRI) to measure gender role characteristics. BSRI is one of the most widely used measures of gender roles (Szymanowicz and Furnham, 2013; Stieger et al., 2014), whose effectiveness has been established by various research studies and applications (Katsurada and Sugihara, 1999; Hoffman and Borders, 2001). The BSRI rating scale is formatted with 40 items, 20 in the masculine sub-scale, 20 in the neutral sub-scale and 20 in the feminine sub-scale. The neutral sub-scale was originally used to distinguish between masculine and feminine characteristics when the scale was compiled. Subsequent research using the BSRI has not employed the 20 items of the neutral sub-scale. Since the purpose of the present study is to focus on the influence of masculine and feminine gender role characteristics on ESE, we employ only the 40 items in the masculine and feminine sub-scales, and not the 20 additional items in the neutral sub-scale.

We conducted an exploratory factor analysis on half of the sample data (n = 262) and found that gender roles could be split into seven factors, with loadings of each item being over 0.5 (see **Supplementary Appendix 2**). The seven factors were: Self-government, Enterprise, Power, and Compete as four masculine gender role factors and Forthright and Sincere, Friendly, and Empathy as three feminine gender role factors. The four masculine factors were from the BSRI masculine sub-scale and the three feminine factors were from the BSRI feminine sub-scale. We used AMOS statistical software to conduct a confirmatory factor analysis on the other half of the sample data (n = 264) and the results indicated high construct validity (the Fit Index of the confirmatory factor analysis was: χ^2 = 379.08; df = 250; χ^2/df = 1.52; GFI = 0.90; AGFI = 0.87; CFI = 0.92; IFI = 0.92; PNFI = 0.67; RMSEA = 0.044). The reliability coefficient of the overall BSRI scale was 0.838, while the feminine and masculine sub-scales had reliability coefficients of 0.770 and 0.842, respectively.

To measure ESE, we used the scale developed by Kickul et al. (2009), including 10 task items and the four stages of entrepreneurship, searching, planning, marshaling, and implementing. Kickul et al. (2009) believed the ESE four-factor model has the best performance. The reliability coefficient of the ESE scale was 0.856. All statistical analyses in this study were conducted using SPSS 16.0 and AMOS 17.0.

Common Method Bias Test

Since the study uses a single-source survey for data collection, there may be common method deviations. To control for this, we utilized the following methods. First, some remedial measures were taken during implementation of the questionnaire, such as ensuring the respondent's anonymity, emphasizing that there is no right or wrong answer, and trying to reduce socially acceptable responses. Richman et al. (1999) believe that paper-pencil and electronic tests are less socially acceptable deviations than face-to-face interviews, especially when anonymous. Second, the Harman single factor method was used to test the common method deviation. Principal component analysis of all variables shows that the explanatory variance of the first factor before rotation is 12.648%, which is far less than the critical standard of 50%, indicating that the common method deviation of this study is within the acceptable range.

RESULTS

Differences in Gender Role Characteristics Between Female and Male Entrepreneurs

The questionnaire used to collect data for this study contained a number of demographic variables, including age, education, type of company, time of establishment of the company, number of employees, and industry. When conducting statistical analysis, these variables were examined as potential control variables. However, since none of these characteristic variables showed significant differences in either gender role identification or ESE, they are not reported here.

Table 2 shows the tests of difference between the masculine and feminine gender role factors for male and female entrepreneurs. While male entrepreneurs were higher than female entrepreneurs in the masculine factors, and females were higher in the feminine factors, the only significant differences were in the factors "Forthright and Sincere" and "Friendly," supporting Hypothesis 1.

Differences in ESE Between Female and Male Entrepreneurs at Entrepreneurship Stages

Table 3 shows the differences in the ESE of female and male entrepreneurs at the four stages of entrepreneurship. The results indicated no significant differences, supporting Hypothesis 2.

The Relationship Between Gender Role Characteristics and ESE of Male and Female Entrepreneurs at Various Entrepreneurship Stages

Table 4 presents the correlations among the gender role factors and ESE at each of the entrepreneurship stages. **Table 5** provides the findings of the regression analyses. The results show that for female entrepreneurs, the masculine factor of "Compete" and the feminine factor of "Friendly" were positively associated with ESE in the searching stage. For male entrepreneurs, the feminine factor of "Friendly" was positively associated with ESE in the searching, planning and marshaling stages, which partly supports Hypothesis 3.

The "Friendly" factor was positively associated with ESE in the planning stage for female entrepreneurs. The feminine factor "Empathy" was positively associated with male entrepreneurs' ESE in the planning stage as well. The "Enterprise" and

TABLE 1 | Sample description.

	Female (N = 261)			Male (N = 265)		
	Category	**n**	**%**	**Category**	**n**	**%**
Age	20–30 years old	63	24.1	20–30 years old	8	3.0
	31–40 years old	142	54.4	31–40 years old	147	55.5
	41–50 years old	43	16.5	41–50 years old	96	36.2
	Over 50 years old	11	4.2	Over 50 years old	13	4.9
	Missing value	2	0.8	Missing value	1	0.4
Enterprise creation time	Below 1 year	24	9.2	Below 1 year	13	4.9
	1–3 years	77	29.5	1–3 years	64	24.2
	4–5 years	40	15.3	4–5 years	57	21.5
	5–10 years	53	20.3	5–10 years	74	27.9
	Above 11 years	57	21.8	Above 11 years	55	20.8
	Missing value	10	3.8	Missing value	2	0.8
Industry	Manufactory	39	14.9	Manufactory	73	27.5
	Service/trade	129	49.4	Service/trade	86	32.5
	High technology	11	4.2	High technology	14	5.3
	Finance/real estate	13	5.0	Finance/real estate	17	6.4
	Others	59	22.6	Others	70	26.4
	Missing value	10	3.8	Missing value	5	1.9
Education	High school and below	84	32.2	High school and below	139	52.5
	Community college	87	33.3	Community college	63	23.8
	Bachelor degree and above	72	27.6	Bachelor degree and above	53	20.0
	Master degree and above	12	4.6	Master degree and above	8	3.0
	Missing value	6	2.3	Missing value	2	0.8
No. of employee	1–10	140	53.6	1–10	108	40.8
	11–50	64	24.5	11–50	80	30.2
	50–99	15	5.7	50–99	31	11.7
	100–199	15	5.7	100–199	27	10.2
	Above 500	14	5.4	Above 500	13	4.9
	Missing value	13	5.0	Missing value	6	2.3
Enterprise nature	Family business	22	8.4	Family business	21	7.9
	General private business	128	49.0	General private business	134	50.6
	Self-employed business	105	40.2	Self-employed business	108	40.8
	Missing value	6	2.3	Missing value	2	0.8

TABLE 2 | *T*-tests of gender role factors.

	Male (N = 265)		Female (N = 261)		t
	Mean	*SD*	*Mean*	*SD*	
Masculine factors					
Self-government	4.073	0.676	3.994	0.562	−1.45
Enterprise	2.811	0.911	2.810	0.828	0.01
Power	3.735	0.683	3.623	0.625	−1.95
Compete	3.874	0.633	3.805	0.604	−1.29
Feminine factors					
Forthright and sincere	2.384	0.868	2.977	0.704	8.60***
Friendly	3.762	0.696	4.001	0.539	4.39***
Empathy	3.839	0.694	3.944	0.609	1.84

***$p < 0.001$.

TABLE 3 | *T*-tests of entrepreneurial self-efficacy in entrepreneurship stages.

ESE	Male		Female		t
	Mean	*SD*	*Mean*	*SD*	
Searching	3.709	0.862	3.778	0.873	0.90
Planning	3.376	0.963	3.456	0.905	0.99
Marshaling	3.348	0.825	3.402	0.866	0.74
Implementing	3.853	0.801	3.933	0.746	1.19

"Compete" factors were positively associated with male entrepreneurs' ESE in the marshaling and implementing stages respectively, which supported Hypothesis 4.

Overall, the "Compete" and "Friendly" factors appeared to be more frequently associated with ESE than other factors. In addition to the typically masculine gender role characteristics of "Compete" and "Enterprise," the feminine gender role characteristics of "Friendly" and "Empathy" appear to be important for male entrepreneurs' ESE in multiple entrepreneurship stages. Likewise, in addition to the typically feminine gender role characteristic of 'Friendly," the masculine gender role characteristic of "Compete" appears to be important for female entrepreneurs' ESE in the searching stage of entrepreneurship.

DISCUSSION

In this study, we sought to investigate the differences in and relationship between the gender role characteristics and ESE of 261 female and 256 male entrepreneurs. The results reveal that the only significant mean differences between female and male entrepreneurs occur for the feminine gender role factors of "Forthright and Sincere" and "Friendly," supporting Hypothesis 1. This result is compatible with previous research findings (Williams and Best, 1982; Stephen and Mary, 2008; Zhi, 2011) indicating that men (including men exhibiting feminine characteristics) and women exhibiting masculine traits demonstrate the psychological characteristics of self-concept and self-esteem typically associated with suitability for leadership (Kent and Moss, 1994; McCabe et al., 2006). However, the results also showed that female entrepreneurs exhibit higher feminine gender role factors than male entrepreneurs, suggesting that traditionally feminine gender role characteristics are still important for female entrepreneurs to display.

Previous research results are mixed on the influence of gender on ESE, which may be summarized as either women's ESE is lower than men's (Scherer et al., 1990; Wilson et al., 2007) or there is no gender difference in ESE (Zhao et al., 2005; Stephen and Mary, 2008). However, these studies primarily utilized samples of MBA students and non-entrepreneurs. In the present study which investigated established entrepreneurs, who may be expected to have higher ESE than non-entrepreneurs, we found no gender differences in ESE exhibited across four different entrepreneurship stages, a result that is compatible with Chen et al. (1998). It may be that in today's China, although women share equal rights and social status as men, long-term gender stereotypes may still prevail. For women entrepreneurs to succeed, therefore, they may need to exhibit the same levels of entrepreneurial intention and self-efficacy as their male counterparts do. Women also tend to have a higher drive to succeed and persist in business given the opportunity offers it for work-family balance (Baron and Henry, 2011).

In terms of the tests of association between gender role factors and ESE at various entrepreneurship stages, the results show that the feminine factor "Friendly" had a positive influence on male and female entrepreneurs' ESE at the searching stage, partially supporting Hypothesis 3. Within the structure of gender role orientation, "Friendly" is defined as considerate, understanding and peaceful, which allows people to more easily establish positive interpersonal relationships with others, which is essential to obtaining information and discovering opportunities during the entrepreneurial process. For female entrepreneurs, in addition to "Friendly," the masculine characteristic of "Compete" also had a positive impact on their ESE in the searching stage. While not in accordance with Hypothesis 3, we may infer that female entrepreneurs having the masculine characteristic of "Compete" together with the feminine factor of "Friendly" likely see themselves as confident, strong in action and leadership, ambitious, resourceful, and having ease in establishing good interpersonal relationships with others, all of which are more conducive to gaining new business opportunities.

The study also found that masculine gender role factors are not associated with male and female entrepreneurs' ESE in the planning stage of entrepreneurship. However, the feminine factor "Friendly" appears to play an active role in this stage as well, for both male and female entrepreneurs. In planning the birth of an enterprise, entrepreneurs may be confronted with uncertainties, such as changes in the external environment, uncertainties about partners, etc. Thus, entrepreneurs must be adaptive, nimble and flexible in this stage. When facing uncertainties, "Friendly" enables male and female entrepreneurs to adapt to possible changes through communication and connection with others. Additionally, the feminine factor "Empathy" was positively associated with male entrepreneurs' ESE in the planning stage. The factor "Empathy" was defined as compassionate, cheerful, and affectionate in the present study, representing an

TABLE 4 | Correlations.

	Composite reliability	Convergence validity	Discrimination validity										
	CR	**AVE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1. Self-government	0.812	0.465	**0.659**										
2. Enterprise	0.661	0.424	0.136**	**0.584**									
3. Power	0.708	0.447	0.329**	0.350**	**0.637**								
4. Compete	0.771	0.530	0.358**	0.332**	0.462**	**0.667**							
5. Forthright and sincere	0.682	0.462	−0.056	0.183**	0.055	0.017	**0.574**						
6. Friendly	0.604	0.380	0.163**	−0.011	0.179**	0.212**	0.236**	**0.589**					
7. Empathy	0.632	0.363	0.199**	0.059	0.220**	0.153**	0.234**	0.363**	**0.579**				
8. Searching stage	0.812	0.683	0.142**	0.084	0.169**	0.230**	0.022	0.224**	0.135**	**0.827**			
9. Planning stage	0.695	0.533	0.106*	0.102*	0.102*	0.150**	0.151**	0.211**	0.124**	0.614**	**0.730**		
10. Marshaling stage	0.772	0.461	0.095*	0.102*	0.056	0.132**	0.101*	0.118**	0.082	0.488**	0.557**	**0.679**	
11. Implementing stage	0.496	0.332	0.173	0.107*	0.153**	0.241**	0.031	0.089*	0.157**	0.411**	0.419**	0.490**	**0.576**

*Factor reliability coefficients are provided in bold in the diagonal. *p < 0.05, **p < 0.01.*

TABLE 5 | Regression analysis.

		Entrepreneurial self-efficacy							
Gender role factor	**Gender**	**ESE in searching stage**		**ESE in planning stage**		**ESE in marshaling stage**		**ESE in implementing stage**	
		Beta	***t***	***Beta***	***t***	***Beta***	***t***	***Beta***	***t***
Self-government	Male	0.038	0.583	0.061	0.918	0.034	0.495	0.119	1.820
	Female	0.012	0.184	0.022	0.329	0.108	1.596	0.030	0.439
Enterprise	Male	−0.003	−0.041	0.007	0.107	0.166	2.382*	0.070	1.040
	Female	0.067	0.966	0.112	1.626	−0.017	0.239	−0.041	−0.598
Power	Male	0.125	1.843	0.007	0.102	−0.065	−0.911	−0.033	−0.481
	Female	−0.051	−0.663	−0.058	−0.754	−0.015	−0.192	0.106	1.376
Compete	Male	0.123	1.720	0.049	0.669	0.041	0.543	0.239	3.291***
	Female	0.187	2.574*	0.130	1.794	0.115	1.575	0.122	1.679
Forthright and sincere	Male	0.101	1.527	0.043	0.628	−0.040	−0.578	0.104	1.546
	Female	−0.029	−0.433	−0.001	−0.010	0.090	1.349	0.099	1.491
Friendly	Male	0.172	2.613**	0.159	2.359*	0.138	2.005*	−0.050	−0.749
	Female	0.171	2.545*	0.168	2.499*	0.006	0.094	0.018	0.264
Empathy	Male	−0.084	−1.329	0.145	2.220*	0.005	0.074	−0.032	−0.504
	Female	−0.006	−0.096	0.052	0.817	0.124	1.957	−0.002	−0.024
F	Male	5.889		3.612		1.994		4.980	
	Female	2.585		2.418		2.247		2.183	
R^2	Male	0.115		0.065		0.026		0.095	
	Female	0.067		0.037		0.032		0.031	

$^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. Male: n = 265; Female: n = 261.

understanding of the perspectives and constraints of others. In the planning stage, where it would be important to coordinate with others, empathy and emotional intelligence are important. Previous research has shown that emotional intelligence has a positive influence on ESE (Leonidas et al., 2009). The results indicate that empathy is particularly important for male entrepreneurs' ESE in the planning stage, possibly because it may help them to understand, connect, and relate with others.

The results also indicated that for male entrepreneurs, the masculine factors "Enterprise" and "Compete" were positively associated, respectively, with their ESE at the marshaling and the implementing stage, and the feminine factor "Friendly" was positively associated with their ESE at the marshaling stage. For female entrepreneurs, neither masculine nor feminine factors were associated with their ESE at the marshaling and the implementing stages, which supports Hypothesis 4. According to Stephen and Mary (2008), during the marshaling and implementing stages of entrepreneurship, typical masculine teams show a higher level of ESE than typical female teams. "Enterprise" and "Compete" were defined as confident, aggressive, dominant, and spearheading in the present study, which are typically masculine characteristics. During the entrepreneurial process, the searching and the planning stages mainly cover the preparation of business while not requiring as strong a demand of leadership to spearhead, coordinate, and control others. The marshaling and the implementing stages, on the other hand, require entrepreneurs to demonstrate their leadership skills, self-confidence, and power to influence investors, suppliers, and new employees, all of which are typical masculine factors. It is interesting that these associations were obtained only for male entrepreneurs; it seems that male but not female entrepreneurs' ESE is bolstered by these masculine factors in the marshaling and implementing stages. Additionally, at the marshaling stage, entrepreneurs need excellent communication skills to persuade and encourage others, so the factor "friendly" is important for male entrepreneurs.

Contributions and Implications

The present study's theoretical contributions are as follows. First, we studied a novel phenomenon in the literature on ESE. Most previous studies have employed ESE as an antecedent variable to explore its influence on entrepreneurial intent and entrepreneurial performance. In this study, we employed ESE as an outcome variable to explore the influence of entrepreneurs' gender role on ESE in various stages of entrepreneurship and between male and female entrepreneurs. Our study enriches the extant ESE knowledge base in these respects.

Second, the integration of the Bem Sex Role Inventory (BSRI) in the present study provides new and nuanced insights about the influence of gender roles in the development of ESE. Our study explores the content and structure of the BSRI, dividing gender roles into seven factors, of which three are feminine and four are masculine, comparing and analyzing the differences between female and male entrepreneurs' on these gender role factors and ESE. Previous studies using BSRI have divided gender roles into only two dimensions of masculinity and femininity. Thus, this study not only reveals the influence of gender role identification on ESE, but also provides a more nuanced perspective on gender roles. Third, our data were collected from practicing entrepreneurs, which is another strength of this study. Unlike previous studies, which mostly focused on MBA students, our study focused on male and female entrepreneurs, ensuring that the ESE being captured was closer to reality than aspiration.

There are two practical contributions of this study. First, it eliminates the stereotype that men are more suitable for entrepreneurship than women, and provides strong evidence for female entrepreneurship management. In recent years, although women have become more active in entrepreneurship and the trend of female entrepreneurship has increased annually, men are still generally considered to be more suitable for entrepreneurship than women. By comparing 261 female entrepreneurs and 265 male entrepreneurs, our study found that there is no difference between female entrepreneurs and male entrepreneurs in terms of their ESE. In practice, thus, society should encourage and attach equal importance and support to female entrepreneurship as to male entrepreneurship, providing women entrepreneurs with a larger space and platform than they currently have, so that they can give full play to their talents and achieve entrepreneurial performance.

Second, our results suggest that both masculinity and femininity are important for entrepreneurship. The present study found that male entrepreneurs and female entrepreneurs have no differences in masculine characteristics; that is, female entrepreneurs also have masculine characteristics, indicating that masculine characteristics are essential for entrepreneurship. At the same time, the feminine intuitive factor played an important role in opportunity identification in the search stage, and the feminine factor of friendly was important in multiple stages. In practice, we should not only pay attention to the cultivation of the male characteristics of female entrepreneurs, but also cultivate the female characteristics of male entrepreneurs, so as to make entrepreneurs more effective in all stages of the entrepreneurial life cycle.

Limitations and Future Research

While the present research verified the hypotheses, there are certain limitations, the first of which is the limited representativeness of the sample. Respondents were drawn from the developed regions of East China, where the entrepreneurial environment is rich enough to drive strong entrepreneurial motivations. Likely our respondents are opportunity-oriented entrepreneurs, and thus the results of this study may not represent entrepreneurship in other regions in China or in other countries. Second, although we launched remedial measures to control for the use of cross-sectional data, common method bias is still an issue. In this regard, the questionnaire deployed was anonymous and we emphasized to respondents that there are no right or wrong answers. Additionally, we intentionally avoided questions having social desirability so as to further lower common method biases. Richman et al. (1999) suggested that pen-and-paper tests and electronic surveys show less social desirability bias than face-to-face interview, especially when responses remain anonymous. We also conducted tests to ensure that common method bias was within the acceptable range. To overcome these limitations, future research should undertake cross-cultural comparisons of gender role characteristics and ESE, and consider more qualitative explorations to tease out the nuances of gender role orientations and entrepreneurial self-efficacy displayed by female and male entrepreneurs.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the Human Participants Ethics Committee of Shanghai Normal University, China. The patients/participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

CL, DB, and XG have been engaged in research on organizational behavior. They have done many researches on organizational culture and female entrepreneurship and have published dozens of research manuscripts in recent years. CL and XG has presided over two National Social Science fund project, three provincial-level projects, and many other projects. CL's monograph Organizational Culture: from the Perspective of Organizational Effectiveness won the second prize of the 12th Philosophy and Social Science Outstanding Achievements of Shanghai (China) in 2014. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

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Understanding Unemployment Normalization: Individual Differences in an Alternative Experience With Unemployment

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Unemployment is a major concern of societies and people around the world. In addressing this phenomenon, the literature has suggested a change in unemployed people's perceptions of this transition period. In this paper, we apply a differential approach to explore the concept of unemployment normalization, an individual emotional regulation process. The results show how the global socioeconomic context and some individual and psychological variables influence the normalization of unemployment. Thus, the age of the person but also work involvement, coping strategies, locus of control, and level of self-esteem have indirect differential effects, mediated by unemployment normalization dimensions, on unemployed people's perceived health. Only neuroticism has a direct link to subjective well-being. These results offer a new understanding of the perception of unemployment and are also discussed in the area of career and vocational counseling.

Keywords: unemployment, normalization, individual differences, personality, coping, perceived health, subjective well-being

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INTRODUCTION

Unemployment is a rather important negative life event (ranking 13th out of 51 events) with a slightly higher impact for men (Hobson et al., 1998). Thus, it has to be considered a very high life stressor. Nevertheless, different individuals respond to unemployment in different ways, and the differential mechanisms and processes used to deal with unemployment need to be studied more (Gowan, 2014). The consequences of unemployment on subjective well-being (SWB), health, identity, and distress have already been widely studied; scholars agree about the deleterious effects for the unemployed (McKee-Ryan et al., 2005; Wanberg, 2012). Nevertheless, a recent body of research has shown that complex mechanisms of emotional regulation during unemployment may explain inter- and intraindividual variability in experiences and feelings about this professional transition period (Houssemand and Pignault, 2017; Pignault and Houssemand, 2017; Thill et al., 2018). Thus, by losing revenue but also by being deprived of the well-known beneficial latent functions of work (Jahoda, 1997; Creed and Evans, 2002; Paul and Batinic, 2010), individuals must somehow adapt to or cope with this stressful situation through psychological compensation (Lazarus and Folkman, 1984; Latack and Havlovic, 1992). In unemployment research, some authors have suggested that a coping strategy that can effectively deal with unemployment may compensate for its negative effects on mental health (Fryer and Payne, 1984; Starrin and Larsson, 1987;

Leana et al., 1998; Patton and Donohue, 1998; Lin and Leung, 2010). Kinicki and Latack (1990) identified two strategies for avoiding the impact of unemployment: "distancing from loss" and "job devaluation." They then paved the way for a body of research that focuses on the processes of intraindividual regulation of job loss and unemployment. This regulation is considered to be linked to individual psychological dimensions (Latack et al., 1995) but also depends on regional economic factors and social norms related to work and unemployment (Houssemand and Pignault, 2017; Pignault and Houssemand, 2018). These recent results indicate that the history of unemployment in a country or region has effects on a person's feelings and experiences, a finding that appears to contradict Paul and Moser's (2009) robust and well-known results. Even though the regional unemployment rate alone is not a good socioeconomic indicator of unemployment, it now seems clear that different relationships can exist between occupational status and SWB (e.g., Stam et al., 2015; Buffel et al., 2017). Thus, whereas the negative effects of unemployment are felt in the same way by unemployed people from culturally and geographically close countries, other psychological dimensions have differential effects on this subjective experience (Hahn et al., 2015; Houssemand and Pignault, 2017; Pignault and Houssemand, 2017). In sum, there seems to be an individual cognitive mechanism for regulating unemployment, but it depends on the contexts in which unemployed people live.

In this vein and drawing on Ashforth and Kreiner's (2002) work, which showed how people *normalize* certain "extraordinary" situations in an organizational context in order to make them seem more acceptable and more ordinary, Pignault and Houssemand (2018) suggested the concept of *unemployment normalization*. Because the unemployment situation is stressful, the authors described a process by which unemployment is normalized, consisting of a form of emotional regulation involving a process of cognitive reappraisal (Gross and Thompson, 2007). Nevertheless, without going so far as to identify the normalization of unemployment as a social construct, it is important to understand that this concept depends on the social, cultural, and economic circumstances in which unemployed people try to regulate their emotions. Thus, the normalization of unemployment must be understood as a multidimensional adaptive and cognitive response to a situation that is considered new and stressful (Pignault and Houssemand, 2018). In this sense, normalizing unemployment would enable a person to implement a self-regulation strategy (certainly unconscious) to maintain their SWB in a positive way or at least in a way that is as high as possible under these conditions (Rasmussen et al., 2006; Wanberg, 2012) and to confer resilience (Johnson et al., 2016).

Coping With Unemployment

Coping has been studied a great deal in the field of work stress (for an extensive review, see Dewe et al., 2010). As in all stressful situations, people use cognitive appraisals that are composed of primary appraisals (the process by which the situation is analyzed) and secondary appraisals (the process of choosing coping mechanisms that will determine the impact of the stressor on well-being). Depending on the nature of the environment in which the stress occurs, coping strategies might change, and different response behaviors might work better or worse for certain stressors. Nevertheless, people have coping styles that represent the general habits they apply to respond to stressors. Coping strategies have been widely studied (for a review, see Folkman and Moskowitz, 2004), and there are many models of coping strategies. For example, the first one empirically distinguished problem-focused coping from emotion-focused coping (Lazarus and Folkman, 1984), whereas others have provided systematic reviews of different coping measurement tools describing hundreds of coping behaviors (e.g., Skinner et al., 2003). Some overlap exists between models, and the more complex models can often be summarized with simpler ones. Nevertheless, stressors are generally identified as specific to different contexts, and environmental situations can explain the coping responses that are used. The specific context of a lack of job security, including actual unemployment, has an important effect on subjective strain and well-being (Probst, 2009). A coping strategy based on proactive behaviors seems to stabilize or increase the well-being of unemployed people and reduce their uncertainty about employment (Mantler et al., 2005).

Some reviews have been conducted on coping with unemployment (e.g., Waters, 2000; Gowan, 2014), but such reviews have concluded that there is a need for more research, especially analyses of the process of coping with unemployment (e.g., Kinicki et al., 2000; Waters, 2000; McKee-Ryan et al., 2005; Rudisill et al., 2010). These models may be helpful for improving our understanding of the coping process. We can summarize this field of research by listing some important steps.

On the basis of Lazarus and Folkman's (1984) research on differential coping and appraisal processes during stressful events, DeFrank and Ivancevich (1986) proposed one of the first models related to coping with unemployment. Based on organizational (e.g., company history or financial condition) and individual (e.g., age, education, or chronic health) risk factors, a worker can lose his or her job, which immediately impacts the person's income (e.g., money) and social status. Some personal (e.g., personality or flexibility), social (e.g., social support or impact on family), economic (e.g., climate or location), and job-related variables (e.g., involvement or satisfaction) moderate the differential perception or appraisal of a layoff, coping attempts, and effects (e.g., physical or psychological).

Leana and Feldman (1988) model of job loss was designed to explain individuals' reactions to this situation. Because it is a stressful event, job loss implies physiological changes but also cognitive appraisal and emotional arousal, which drive how people cope with unemployment. Coping strategies are moderated by personality (e.g., locus of control or self-esteem) and situational (e.g., labor economic conditions or social support) factors. These coping processes may affect the job attainment which influence some outcomes (e.g., job attitudes or general health).

An extension of the two previous models was presented by Latack et al. (1995). This model, which was based on coping theory, control theory, and self-efficacy, tries to explain the coping process used to maintain psychological equilibrium during unemployment. It involves cybernetic control process (Edwards, 1992) because job loss is considered a stressful situation where individuals compare their actual situation to economic, psychological, physiological, and social standards. People's appraisals of this discrepancy impact their coping goals. Finally, coping strategies are determined by coping goals moderated by coping resources and coping efficacy.

Gowan and Gatewood's (1997) model subdivides the process of coping with involuntary job loss into four steps. The first consists of individual and situational coping resources that are causal antecedents of people's reactions to stress. The second one is represented by cognitive appraisal (e.g., reversibility or perceived fairness) and coping strategies (problem, symptom, or emotion-focused coping) as mediating processes. At the third level, coping strategies influence immediate effects of job loss, which are psychological affects (especially distress) and reemployment status. Finally, the final level of the model includes the long-term effects or outcomes (e.g., psychological, social, and physiological well-being).

Waters (2000) criticized previous models of the process of coping with unemployment because it proposed that coping is a stable disposition of a person and, thus, it failed to completely explain the coping process. The main objections against the trait-based approach to studying coping processes are (a) a failure to consider permanent and constant changes in coping and its un-static reality (Lazarus and Folkman, 1984), (b) the consideration of coping as a unidirectional phenomenon even if the relationship between the environment and coping is certainly bidirectional (e.g., Moore and Cooper, 1998), (c) the confounding of the impact of coping efforts and coping outcomes, and finally (d) no direct examination of cognitive appraisal during unemployment. The new model proposed by Waters (2000) considered "non-recursive relationships between stressors, cognitive appraisals, coping efforts and psychological health during unemployment" (p. 169).

Recently, a new model of the process of coping with unemployment was proposed by Pignault and Houssemand (2018). Based on the previous model, an intermediate process was integrated into this new model as a moderator between the individual (e.g., locus of control or coping strategies), social (e.g., norms or values), and economic (e.g., unemployment history or employment rate) characteristics of unemployment and outcomes (e.g., stress or well-being). This normalization process is an emotional regulation process based on cognitive reappraisal (reappraisal that views unemployment as a normal and inevitable phase in a person's career path and as the result of external circumstances). The outcome of this process is that a person's feelings about being unemployed are less negative, and stress may decrease.

Based on these previous studies and models, it is possible to summarize the potential process of coping with unemployment (broadly interpreted) in **Figure 1**.

Unemployment Normalization

Unemployment normalization depends on four interrelated individual emotional or cognitive dimensions (Pignault and Houssemand, 2017). The authors named these four dimensions *negative perceptions of unemployment*, *positive perceptions of unemployment*, *unemployment justifications*, and the *unemployment norm*.

On an emotional level, individuals experience negative and positive feelings about their unemployment status, represented by the negative and positive perception dimensions, respectively. These two contradictory feelings, which are moderately correlated with each other, seem to indicate opposing but simultaneous (not sequential) feelings about being unemployed (alternating periods of negative and positive feelings). Thus, this

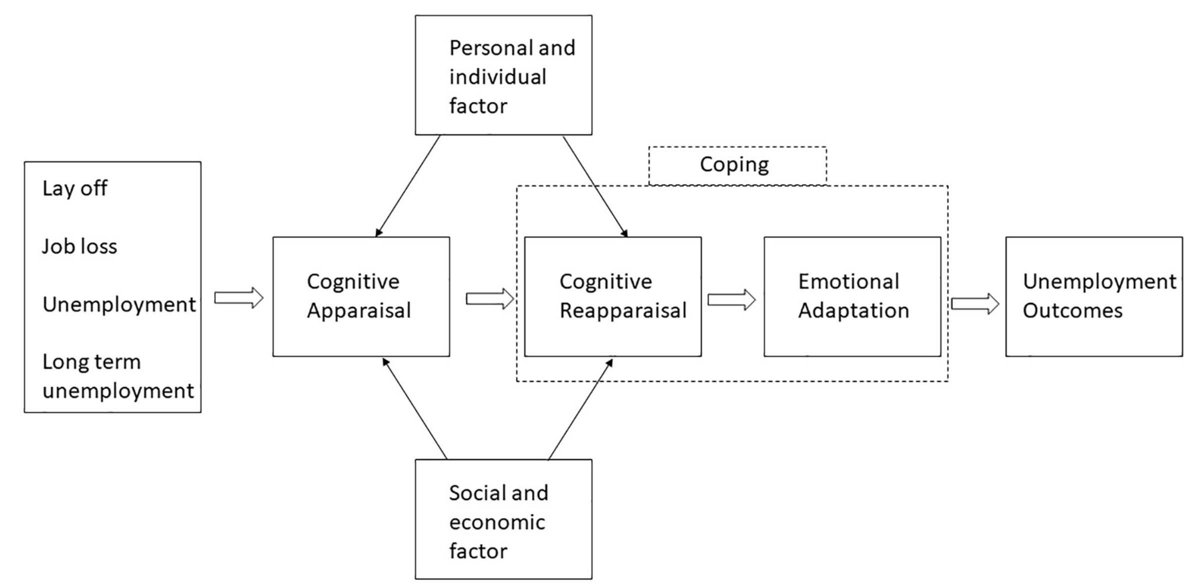

FIGURE 1 | Process of coping with unemployment – a literature summary proposal.

situation can have harmful effects on unemployed people but simultaneously provide them with positive outcomes (more time for personal activities or an opportunity to reflect on possible career changes).

On a cognitive level, two dimensions that are moderately correlated with each other are based on the individual explanations given for being unemployed. The first concerns the external justifications given (e.g., companies, the economic crisis), represented by the unemployment justifications dimension. The second is a kind of fatalistic explanation of the unemployment situation that mirrors social and economic changes in modern societies (unemployment is unavoidable in today's career paths), which is the unemployment norm.

The authors found positive correlations between the negative perceptions of unemployment and its justifications and between the positive perceptions of unemployment and the unemployment norm. Finally, they found that negative perceptions of unemployment had a strong negative impact on mental health, whereas positive perceptions preserved psychological well-being.

The extant scholarship has explored a variety of coping strategies among the unemployed but has not yet considered strategies as shaped by the new normalization construct. A consideration of normalization as a coping strategy is summarized in **Figure 2**.

The Differential Approach to the Experience of Unemployment

Other studies have already highlighted the importance of effects of socioeconomic and cultural dimensions on the normalization of unemployment (Houssemand and Pignault, 2017; Pignault and Houssemand, 2017). Unemployed people living in a more favorable socioeconomic context and in a region with less history of unemployment tend to identify fewer positive aspects of unemployment, consider this period less normal in their careers, and less often justify their situation by naming external factors. Nevertheless, beyond these initial findings, individual differences within the same regional context exist, and such differences suggest the existence of personal characteristics that influence the use of regulation strategies. The individual determinants of the unemployment experience have been studied previously, but any empirical confirmation of whether links exist between people's psychological characteristics and unemployment normalization have yet to be presented.

Work centrality (McKee-Ryan et al., 2005; Wanberg, 2012) and work commitment (Paul and Moser, 2006) are psychological constructs that are often taken into account to better understand the effects and experiences of unemployed people. Studies have shown that the people most engaged in their work are also those who have a more negative experience with being unemployed. Such people find themselves in a situation of cognitive dissonance when deprived of an essential and organizing principle in their lives. Thus, work centrality may have an effect on the unemployment normalization and increase people's negative feelings about it.

In addition, perceived control is another psychological construct that is traditionally considered in related studies. Nevertheless, perceived control is usually not studied as the only psychological dimension related to unemployment but in relation to coping with unemployment (Wanberg, 1997), job search strategies (Kanfer et al., 2001), and reemployment (Ginexi et al., 2000). In this vein, Petrosky and Birkimer (1991) found a negative relationship between internal locus of control and emotion-focused coping strategies. Moreover, some studies have shown that the effect of unemployment on SWB can be compensated for when people can draw on certain types of coping strategies to deal with the situation (Fryer and Payne, 1984; Starrin and

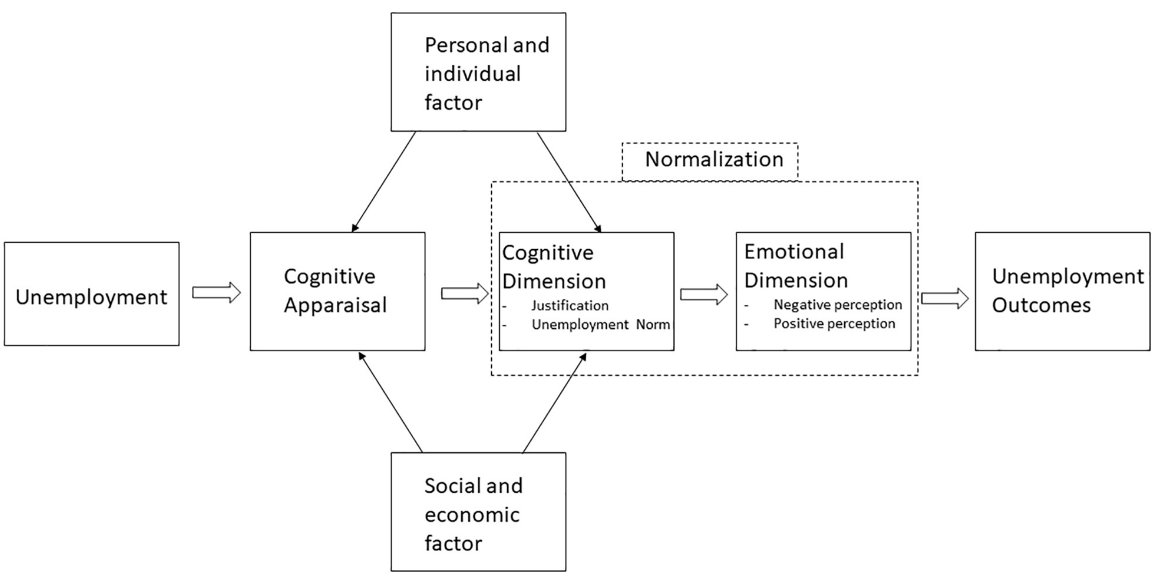

FIGURE 2 | Consideration of normalization as a coping strategy.

Larsson, 1987; Leana et al., 1998; Patton and Donohue, 1998; Lin and Leung, 2010). Thus, they found that the negative impact of unemployment was greater for people using an emotion-focused coping strategy. We therefore expected that locus of control and coping variables would influence unemployed individuals' unemployment normalization.

Many studies have further highlighted the influence of personality variables and self-esteem on the experience of unemployment and return to work. In terms of personality, Creed and Evans (2002) showed that the manifest and latent benefits of work were significantly associated with psychological well-being but qualified these results by showing that the variance in terms of SWB is explained primarily by personality dimensions and particularly by neuroticism. Unemployment is probably perceived less negatively by people with a low level of neuroticism even if this link may be discussed (Kokkonen and Pulkkinen, 2001; Boyce et al., 2015). Self-esteem has also been shown to play a moderating role by reducing the level of psychological distress and increasing SWB and the motivation to seek employment (Rowley and Feather, 1987; Wanberg et al., 2005). An unemployed person who maintains good self-esteem will perceive the unemployment situation as less out of their control, as less stressful, and thus as more normalized.

Finally, some other variables that significantly influence the unemployment experience and the SWB of the unemployed should be included as determinants of the level of unemployment normalization. For instance, jobseekers' age and gender have led to differential effects in the relationships with a person's unemployment experience, and such differences have been found to be a function of perceived norms, work centrality, and career commitment (Broomhall and Winefield, 1990; Paul and Moser, 2009; Strandh et al., 2013). Moreover, the duration of unemployment and the recurrence of unemployment have been linked to how unemployment is experienced (Hahn et al., 2015). Researchers do not fully agree on the effect of unemployment duration on the experience of the situation. Nevertheless, studies have shown that timing plays an important role in the process of whether people adapt or not, depending on the duration of their unemployment (Clark, 2006; Paul and Moser, 2009; Wanberg et al., 2012a,b). Concerning the recurrence of periods of unemployment, in a longitudinal study, Luhmann and Eid (2009) found that life satisfaction decreased with repeated unemployment, and Booker and Sacker (2012) wondered if unemployment recurrence led to adaptation or sensitization. Thus, these individual non-psychological variables can influence the way of normalizing unemployment, influence one's experience of this professional transition, and therefore potentially affect the mental health of the unemployed.

The Present Study

Considering that normalization is a regulating mechanism for unemployment, it becomes important to rethink the relationships between unemployed people's individual characteristics and their mental health. Indeed, it is probable that the opportunity of emotionally regulating the state of being unemployed depends on a set of individual psychological dimensions (personality, locus of control, coping strategies, and work centrality) and non-psychological characteristics (age, sex, and unemployment history). The dimensions of the unemployment normalization also depend on the socioeconomic characteristics of the unemployed person's living context. Finally, the unemployment normalization should have a differential impact on jobseekers' mental health. Thus, as proposed by a heuristic model of unemployment normalization (Pignault and Houssemand, 2018), this emotional regulation of unemployment depends on both psychological and demographic personal characteristics and specific social and economic conditions.

The purpose of this article is to test the heuristic model of the unemployment normalization (Pignault and Houssemand, 2018). As already mentioned, some studies have already highlighted the impact of socioeconomic conditions on this mode of emotionally regulating unemployment (Houssemand and Pignault, 2017; Pignault and Houssemand, 2017). Other research has attempted to understand how the dimensions of the normalization of unemployment interact and compensate for each other, in order to maximally preserve the jobseekers' SWB (Thill et al., 2018). But, research has yet to take into account unemployed people's individual characteristics in order to better understand the psychological and individual determinants of the unemployment normalization and its influence on the mental health of the unemployed. This study attempts to address this gap and provide several main hypotheses that are based on previous studies.

- H1: Work centrality is linked to the experience of unemployment. It is positively correlated with the negative perception of unemployment (people for whom work is important in life live in bad times) and, conversely, it is negatively correlated with a positive perception of unemployment. It is also negatively linked to well-being.
- H2: Internal locus and emotion-focused coping are linked to the emotional dimension of unemployment normalization and to well-being. People with a more prominent internal causal attribution do not feel the negative effects of unemployment as profoundly and have better health. People with emotion-focused coping are more affected by unemployment, feel its negative effects more profoundly, and have lower well-being.
- H3: Unemployment is perceived less negatively by people with a low level of neuroticism.
- H4: A high level of self-esteem decreases stress and increases well-being. Self-esteem is negatively linked to a negative perception of unemployment and positively linked to well-being.

MATERIALS AND METHODS

Participants

The sample consisted of 1,038 French-speaking unemployed people (defined as people above a specific age who are currently available for work, seeking work, but without work during some reference period, International Labour Organisation, 2000), of whom 611 were in Luxembourg and 427 in France, contacted during their mandatory individual appointments with state employment agencies. Participants were 38.53 years old on average (*SD* = 11.31); 51.6% were women; 54.5% of them had been unemployed at least once previously; 63.8% received unemployment benefits; and the majority of them (44.7%) had been unemployed for less than 6 months this time around (20.3%: 6 months to 1 year, 24.3%: 1–3 years, 10.7%: more than 3 years). They participated voluntarily at state career centers in Lorraine (*Pôle Emploi*) and Luxembourg (*Agence pour le développement de l'emploi*: *Adem*). Pôle Emploi and Adem are national public employment agencies that were partners of the present study, which was a part of a broader research program funded by the *National Research Fund of Luxembourg* (CORE Program: Project UnemployNorm, under grant number C13/SC/5885577). The state employment agencies gave access to their buildings, announced the study to unemployed people (by email, the press and during follow-up meetings with their guidance professionals), and introduced the researchers to job seekers. This assistance by the agencies helped to achieve a high response rate by unemployed people, as their involvement increased the trust felt by potential respondents. In this sense, the sample was made up of people representing the vast majority of jobseekers officially registered with the public employment services, and thus featuring in the official unemployment figures in France and Luxembourg.

Anonymity and confidentiality were guaranteed. Information concerning the study's goals, the researchers' identities, and data processing was provided to participants orally and in writing. The two data collection sites are geographically close but have very different socioeconomic contexts. Thus, in this region of France (Lorraine), the unemployment rate is very high (above 10%), whereas it is rather low in Luxembourg (6%, with the latter being one of the lowest in the European Union; Eurostat, 2018). In addition, the history of unemployment is different between these two countries: There has long been unemployment in France, but it is quite recent in Luxembourg. For example, in 1996, France's unemployment rate was 11.6%, and Luxembourg's was 2.9%. Luxembourg is considered a "favorable labor market" (Houssemand and Meyers, 2011, p. 378). Comparisons between these two employment regions can thus further the understanding of the importance of the socioeconomic context on the unemployment experience.

Measures

A multipart questionnaire was administered to participants.

Unemployment Normalization Questionnaire (Pignault and Houssemand, 2017)

Answers were given to 16 items broken down into four dimensions on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The scale is coherent with the model depicting the coping with unemployment processes. It described a cognitive dimension, composed of two factors. In this, unemployment is perceived as a normal stage in professional careers, and so is considered to be a norm, *unemployment norm,* (example: *Unemployment is now an inevitable stage in life*), and through *external justification* of unemployment (example: *Unemployment is a result of the crisis*). This cognitive dimension has impacts on an emotional dimension, described as a *negative perception* of unemployment factor (example: *Since I have been unemployed, I feel different from others*) and a *positive perception* of unemployment factor (example: *Since becoming unemployed, I feel better than before*). The complete scale has already been published (Pignault and Houssemand, 2017).

General Health Questionnaire (Goldberg, 1972)

This mental health questionnaire was selected because it has 12 items, good psychometric characteristics (Hankins, 2008), and enables international comparisons because of its temporal and cross-cultural invariance (e.g., Mäkikangas et al., 2006). A high score on this scale indicates more severe mental health problems, whereas a low score reveals good mental health. The respondents have had to judge if different dimensions of their current life were actually changed (example: *Have you recently been able to concentrate on what you are doing?* less than usual, no more than usual, rather more than usual, or much more than usual, with these answers coded, respectively with 0-1-2-3).

Rosenberg Self-Esteem Scale (Rosenberg, 1965)

Responses were given to 10 items on a scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*) (example*: I feel that I have a number of good qualities*). The scale therefore varies from 0 to 30, with a high score indicating a higher level of self-esteem.

Control of Unemployment Scale (Houssemand et al., 2019)

The *Multidimensional Health Locus of Control* (MHLC) Scale (Wallston et al., 1978) was used, but the context of the items was changed. The scales were tailored specifically to unemployed people and the situation of being unemployed (Meyers and Houssemand, 2010; Houssemand et al., 2019). Based on Levenson's (1973) theory, this 16-item scale measures three dimensions of control in situations of unemployment and job-seeking. It uses a 4-point Likert scale, ranging from 0 (*absolutely disagree*) to 3 (*absolutely agree*): internal locus of control (example: *If I take care, I can avoid being unemployed again*); powerful others (example: *Being in regular contact with the administration office is the only way for me to find a job*); and chance (example: *Most of the things that affect my job search happen by chance*).

Work Involvement Scale (Warr et al., 1979)

This six-item scale measures work centrality and thus the importance given to this activity (example: *Having a job is very important to me*). Responses range from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Thus, higher scores reflect greater importance of work in the respondent's life.

Way of Coping Checklist (Vitaliano et al., 1985)

Coping was measured with 27 items describing three coping strategies: Problem-focused (example: *I made a plan of action and followed it*); Emotion-focused (example: *I hoped a miracle would happen*); and Social-support coping (example: *I talked to someone to find out about the situation*). Participants' responses were coded 1 (*No*), 2 (*Somewhat no*), 3 (*Somewhat yes*), and 4 (*Yes*).

Neuroticism (Costa and McCrae, 1998)

Neuroticism was assessed with the 12-item *NEOFFI* scale (Costa and McCrae, 1998), a short five-factor omnibus test of personality (example: *I am rarely sad or depressed*). Items were rated on a 5-point scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*).

These scales were chosen for their psychometric qualities and their frequent use in international studies. All these surveys were written in French. A series of demographic questions were also asked: age (in years), unemployment duration (modalities were: less than 6 months, 6 months to 1 year, 1–3 years, and, more than 3 years), recurrence (first period of unemployment or not), and whether or not the jobseeker was receiving unemployment benefits (in France and Luxembourg, under certain conditions related to age and previous work duration, unemployed people may receive financial assistance from the government while they are looking for work).

Statistical Analysis

In order to respect the level of measurement of the data (Stevens, 1946), the analyses in this study were based on polychoric correlation matrices between the items on each scale (Carroll, 1961; Muthén, 1984). As a result, structural equation modeling (confirmatory factor analyses and path analysis) used the DWLS estimator (diagonally weighted least squares) in the R-package Lavaan.

RESULTS

Homogeneity of Scales

Table 1 presents the internal consistencies of each of the dimensions of each scale. We observed that these values were all very high and close to 1, indicating that the items on each scale or subscale are homogeneous, which allowed us to estimate the latent psychological scores.

TABLE 1 | Cronbach's alphas for each dimension.

Scale/dimensions	Alpha
Unemployment Normalization:	
•Negative perceptions of unemployment	0.77
•Positive perceptions of unemployment	0.77
•Unemployment justifications	0.63
•Unemployment norm	0.76
General Health Questionnaire	0.92
Rosenberg Self-Esteem Scale	0.85
Control of Unemployment Scale	
•Internal locus	0.69
•External locus	0.65
•Chance locus	0.71
Work Involvement Scale	0.83
French version of Way of Coping Checklist	
•Problem-focused coping	0.83
•Emotion-focused coping	0.79
•Social-support coping	0.76
NEOFFI Neuroticism Scale	0.87

In general, for all scales, the internal consistencies of each dimension were greater than or very close to.70 and corresponded to the values observed in research using these scales. It was therefore possible to calculate a composite score indicating the individual score of each subject on each of the psychological dimensions measured in this study.

Links Between the Psychological Dimensions and the Unemployment Normalization

In order to understand the relationships that may exist between the various psychological dimensions and the unemployment normalization, we computed correlations. **Table 2** presents all links between all study variables. There was a strong positive relationship between the intensity of negative perceptions of unemployment and mental health problems, work centrality, neuroticism, and emotion-focused coping. So, unemployed people who considered work to be an essential part of their life, who also expressed negative feelings easily, and had not coped well in an active fashion, perceived the unemployment situation to be a more negative experience and that their subjective health had worsened. In addition, the intensity of positive perceptions of unemployment was inversely related to mental health problems and work centrality. Thus, unemployed people who saw some positive aspects to a period of unemployment, had better feelings of subjective health. More generally, these were people for whom work is less essential. Finally, the justification and unemployment norm dimensions were only weakly related to the other psychological variables.

Links Between Demographic Data and the Unemployment Normalization

In order to better understand the unemployment normalization and the individual differences in its implementation during unemployment, we computed ANOVAs on the four dimensions of normalization and demographic variables. **Table 3** presents the results.

Three dimensions of unemployment normalization (negative perceptions, positive perceptions, and justifications) were related to the duration of this period. Thus, the negative perception of unemployment and its external justification tended to increase the longer a period of unemployment persisted. As for positive effects, they were relatively higher at the beginning of this period of career transition, but they faded after about a year of unemployment. For unemployment recurrence, people unemployed for the first time were less likely than others to view it as a normal part of their career and to give it an external justification. People receiving unemployment benefits also tended to give higher rating to the benefits of unemployment. Finally, Luxembourg-based respondents tended to give slightly higher ratings to the perceived negative effects of unemployment than those living in France, as measured by the negative perception factor of the scale. There were no other group differences in the normalization dimensions. Nevertheless, these results must be interpreted with caution

TABLE 2 | Correlations between normalization dimensions and psychological variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Negative perceptions													
(2) Positive perceptions	−0.539***												
95% CI	[−0.582; −0.494]												
(3) Unempl. justifications	0.489***	−0.162***											
95% CI	[0.440; 0.534]	[−0.221; −0.101]											
(4) Unempl. norm	−0.077*	0.336***	0.320***										
95% CI	[−0.138; −0.016]	[0.280; 0.389]	[0.264; 0.375]										
(5) Mental health	0.649***	−0.448***	0.270***	−0.115**									
95% CI	[0.612; 0.684]	[−0.496; −0.397]	[0.212; 0.327]	[−0.175; −0.053]									
(6) Self esteem	−0.397***	0.162***	−0.113**	0.080*	−0.495***								
95% CI	[−0.448; −0.344]	[0.101; 0.221]	[−0.173; −0.051]	[0.013; 0.136]	[−0.540; −0.447]								
(7) Internal locus	−0.076*	0.050	−0.090*	0.050	−0.162***	0.198***							
95% CI	[−0.137; −0.013]	[−0.010; 0.115]	[−0.155; −0.031]	[−0.009; 0.115]	[−0.222; −0.102]	[0.138; 0.257]							
(8) External locus	0.170***	0.079*	0.171***	0.172***	0.080*	−0.233***	−0.050						
95% CI	[0.109; 0.230]	[0.017; 0.141]	[0.110; 0.231]	[0.111; 0.231]	[0.016; 0.139]	[−0.290; −0.173]	[−0.112; 0.012]						
(9) Chance locus	0.192***	0.070*	0.231***	0.225***	0.137***	−0.239***	−0.189***	0.901**					
95% CI	[0.131; 0.251]	[0.007; 0.131]	[0.171; 0.289]	[0.165; 0.283]	[0.076; 0.197]	[−0.296; −0.180]	[−0.248; −0.128]	[0.889; 0.912]					
(10) Work involvement	0.368***	−0.524***	0.159***	−0.118**	0.286***	−0.030	0.129***	0.040	0.000				
95% CI	[0.313; 0.420]	[−0.567; −0.478]	[0.099; 0.219]	[−0.178; −0.056]	[0.229; 0.341]	[−0.094; 0.029]	[0.068; 0.189]	[−0.027; 0.097]	[−0.064; 0.059]				
(11) Problem coping	0.000	−0.010	−0.030	−0.010	−0.113**	0.226***	0.255***	0.020	−0.050	0.150***			
95% CI	[−0.066; 0.059]	[−0.072; 0.052]	[−0.095; 0.029]	[−0.074; 0.051]	[−0.174; −0.052]	[0.166; 0.284]	[0.196; 0.312]	[−0.044; 0.080]	[−0.116; 0.008]	[0.088; 0.209]			
(12) Emotion coping	0.547***	−0.273***	0.215***	−0.030	0.483***	−0.385***	−0.040	0.297**	0.302***	0.237***	0.310***		
95% CI	[0.502; 0.589]	[−0.330; −0.214]	[0.155; 0.274]	[−0.090; 0.034]	[0.434; 0.529]	[−0.436; −0.331]	[−0.106; 0.018]	[0.239; 0.352]	[0.244; 0.357]	[0.178; 0.295]	[0.254; 0.365]		
(13) Social coping	0.229***	−0.103*	0.070*	−0.020	0.143***	−0.010	0.126***	0.173**	0.119**	0.200***	0.785***	0.627***	
95% CI	[0.169; 0.287]	[−0.164; −0.041]	[0.010; 0.134]	[−0.077; 0.048]	[0.082; 0.203]	[−0.068; 0.056]	[0.064; 0.187]	[0.112; 0.233]	[0.057; 0.180]	[0.139; 0.258]	[0.760; 0.807]	[0.588; 0.663]	
(14) Neuroticism	0.544***	−0.216***	0.245**	0.010	0.641***	−0.652**	−0.136***	0.262**	0.316***	0.113**	−0.112**	0.543***	0.159**
95% CI	[0.499; 0.586]	[−0.274; −0.156]	[0.186; 0.302]	[−0.048; 0.075]	[0.603; 0.676]	[−0.686; −0.615]	[−0.196; −0.074]	[0.204; 0.319]	[0.259; 0.371]	[0.052; 0.173]	[−0.173; −0.051]	[0.498; 0.585]	[0.098; 0.218]

$^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

TABLE 3 | ANOVAs on normalization dimensions and demographic variables.

	Sex *N* = 1005 Men = 48.5% Women = 51.5%	**Duration *N* = 1005 <6 months = 43.4% 6–12 months = 20.4% 12–36 months = 24.6% >36 months = 10.6%**	**Redundancy *N* = 1004 First period = 45.2% Not first period = 54.8%**	**Unempl. benefits *N* = 1001 Yes = 63.8% No = 36.2%**	**Country *N* = 1009 Luxembourg = 57.9% France = 42.1%**
Negative perceptions	$F_{(1,1003)} = 0.08$	$F_{(3,1001)} = 32.97^{***}$ $\eta^2 = 0.03$	$F_{(1,1002)} = 0.08$	$F_{(1,999)} = 0.06$	$F_{(1,1007)} = 4.03^{*}$ $\eta^2 = 0.01$
Positive perceptions	$F_{(1,1003)} = 0.25$	$F_{(3,1001)} = 7.16^{**}$ $\eta^2 = 0.01$	$F_{(1,1002)} = 1.73$	$F_{(1,999)} = 4.20^{*}$ $\eta^2 = 0.01$	$F_{(1,1007)} = 2.84$
Justifications	$F_{(1,1003)} = 2.64$	$F_{(3,1001)} = 34.34^{***}$ $\eta^2 = 0.03$	$F_{(1,1002)} = 11.58^{***}$ $\eta^2 = 0.01$	$F_{(1,999)} = 1.06$	$F_{(1,1007)} = 5.04^{*}$ $\eta^2 = 0.01$
Norm	$F_{(1,1003)} = 3.33$	$F_{(3,1001)} = 1.73$	$F_{(1,1002)} = 11.06^{***}$ $\eta^2 = 0.01$	$F_{(1,999)} = 2.77$	$F_{(1,1007)} = 0.48$

$^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. Comparisons of means (negative and positive perception, unemployment justification and norm) by sex of job-seeker, duration of unemployment, unemployment benefits, and country of the respondents.

because the variance explained in the normalization by each of the demographic variables was less than 4%. Moreover – because the study did not feature longitudinal data about the duration of unemployment – intra-individual variability over time was not analyzed: Only groups of participants unemployed for different lengths of time when they participated in the study were compared with each other.

Finally, correlations were computed between the dimensions of the unemployment normalization and respondents' age. A significant positive correlation was observed between age and negative perceptions of unemployment ($r = 0.162$, $p < 0.001$). A similar relationship between age and external justifications ($r = 0.277$, $p < 0.001$) was also observed. Thus, older unemployed people tended to have more negative feelings about their situation than younger unemployed people, and they also tended to justify their unemployment situation as being due to circumstances beyond their control, such as social and economic factors. By contrast, age was not related to positive perceptions of unemployment ($r = -0.048$, $p = 0.128$) or the unemployment norm ($r = -0.032$, $p = 0.321$).

Path Analysis of the Unemployment Normalization

In order to verify the impact of all psychological and demographic variables on the unemployment normalization, we ran several analyses. The first was a path analysis including all scales of the study and metric demographic variables. To do this, all items from all psychological scales were introduced into the statistical model to determine the latent psychological variables of the model, and regression analyses were modeled. Finally, a heuristic model of unemployment normalization was computed to provide a better understanding of the influence of individual variables. **Figure 3** shows the results of these analyses with satisfactory fit indices ($\chi^2 = 15929.89$, $df = 2815$, RMSEA = 0.070, CFI = 0.928, TLI = 0.926).

Each latent variable was defined by all the items of the corresponding scale (to simplify, no items were represented in the figure). All the represented paths were significant ($p < 0.05$).

The external justification of unemployment had a positive effect on negative perceptions of unemployment. This same type of relationship was found between the unemployment norm and positive perceptions. These two types of perceptions, positive and negative, were inversely influenced by work centrality. Those who viewed work as important in their lives felt the deleterious effects of unemployment more. The negative effects of unemployment decreased when self-esteem was high and increased with age and emotion-focused coping. The positive effects of unemployment were felt more by those with a more internal locus of control. People who thought that what happened to them was partly due to chance (chance locus) tended to justify their situation more externally and thought a period of unemployment in a career was normal. This trend toward an external justification of unemployment was highly dependent on the age of the unemployed person, and this trend grew over time. Conversely, younger people were more likely to view the period of unemployment as inevitable in life. Finally, we explored the influence of the unemployment normalization on mental health. Those who felt the most negative about being unemployed subjectively felt that they had more problems. The opposite was true for positive perceptions of unemployment. Moreover, perceived mental health also seemed to depend on work centrality, which protected participants from health problems in the same way but to a lesser degree than emotion-centered coping. Finally, neuroticism was positively correlated with the intensity of the problems experienced.

To control for the differential effect of other, non-metric demographic variables in the study, we computed a series of invariance analyses of the previous model. This statistical procedure allows us to confirm if a model is or is not dependent on different groups of people. We used Hirschfeld and von Brachel's (2014) procedure with the SemTools R-package. The results showed weak invariance for participants' sex ($\Delta\chi^2 = 42.649$, $df = 65$, $p = 0.985$), country ($\Delta\chi^2 = 43.561$, $df = 65$, $p = 0.981$), whether they received unemployment benefits ($\Delta\chi^2 = 23.8146$, $df = 65$, $p = 1.000$), recurrence of unemployment ($\Delta\chi^2 = 29.534$, $df = 65$, $p = 1.000$), and unemployment duration ($\Delta\chi^2 = 56.140$, $df = 195$, $p = 1.000$).

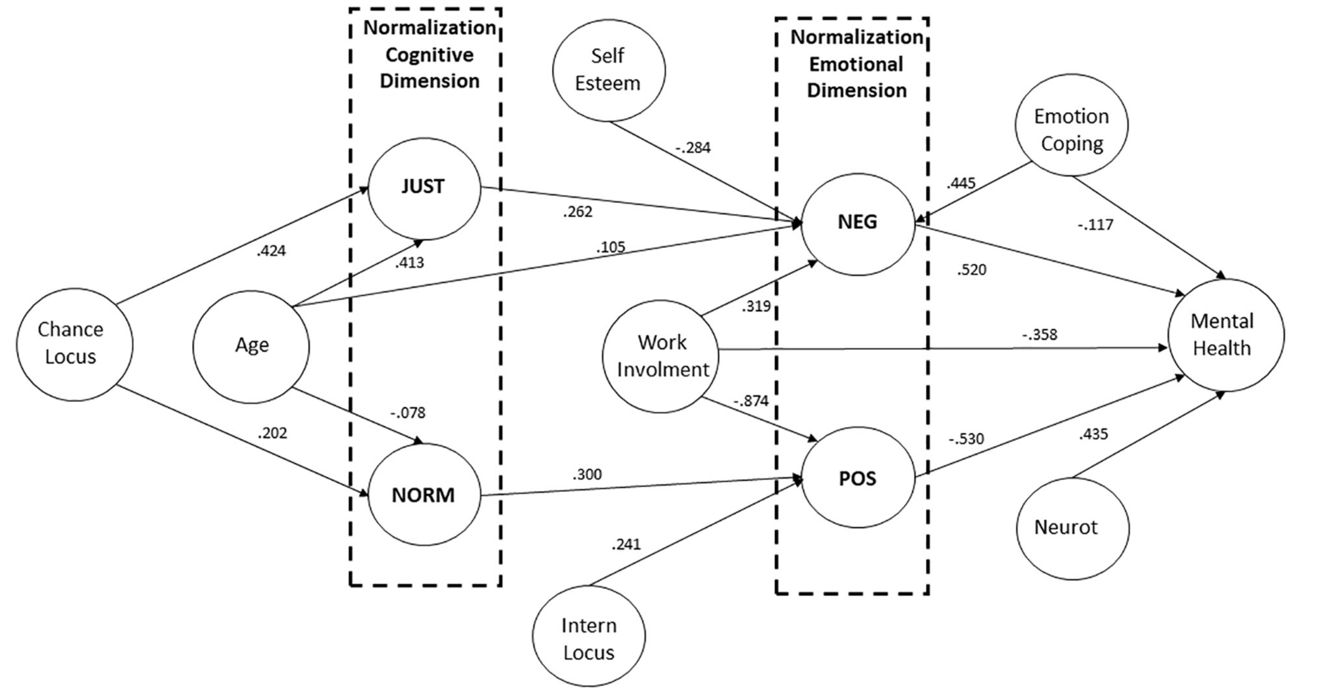

FIGURE 3 | Path analysis of the unemployment normalization. JUST: unemployment justifications; NORM: unemployment norm; NEG: negative perceptions; POS: positive perceptions; Neurot: neuroticism.

This indicates that the structural model proposed above did not differ according to these demographic variables when the factor loadings were constrained to be equal. In other words, the proposed model can be considered general enough to represent the process of unemployment normalization for all categories of jobseekers interviewed in this study. It can be considered as being identical for many types of unemployment scenario: men and women; people from both France and Luxembourg; those who do or do not receive welfare benefits; short-term or longer term job-seekers; and people experiencing joblessness for the first-time or not.

Finally, these results fully supported H1 and H2, and partially supported H3 and H4. Thus, the study confirmed the link between work centrality and how unemployment is experienced. Unemployed people for whom work was important in their lives perceived periods of unemployment in a more negative way than others. Conversely, finding some positive aspects to unemployment seemed to be connected to lower feelings of work involvement. These different perceptions were inversely associated with subjective health. In the same vein, unemployed people with more prominent internal causal attribution, did recognize the more positive aspects of unemployment. People with emotion-focused coping mechanisms were more affected by unemployment, felt its negative effects more profoundly, and had lower feelings of well-being. Self-esteem is negatively associated with a negative perception of unemployment, but was not directly linked to well-being. Neuroticism had no impact on negative or position perceptions of unemployment, but there was a direct connection to mental health.

DISCUSSION

The objective of this study was to better understand the mechanisms of the unemployment normalization first described by Pignault and Houssemand (2017, 2018) in a differential approach. Until now, only a few local socioeconomic variables had revealed that this coping strategy and individual emotional regulation might depend on the social image of unemployment (Houssemand and Pignault, 2017). The negative effects of unemployment should thus be felt more strongly in regions where unemployment is lower, with less history of unemployment, and with shorter periods of labor crises. Conversely, unemployed people in regions more affected by unemployment should have a stronger tendency to find ways to compensate for their job loss, to justify unemployment externally, and to view unemployment as more "normal" within a professional career. These differences were not thought to result from a difference in the negative effects of unemployment between economically different countries but rather to variability in the available emotional regulation and compensation mechanisms. These results clearly emphasize that whereas unemployment always causes significant deleterious effects, the regulation strategies during this period are psychological and individual and can be influenced by the socioeconomic context in which the unemployed live. For example, it may seem more "normal" to experience a period of unemployment in one's life when a large part of a person's family, friends, or coworkers have also experienced unemployment. Such regulation and reassessment strategies are possible when unemployment is high locally and is less possible for jobseekers in regions less affected by unemployment. This is therefore not a local and regional habituation to unemployment but an increase in the sources of emotional compensation available individually. In this sense, these results do not contradict research that has described only the deleterious effects of unemployment and considered their constant heavy impact across regions and over decades (e.g., Paul and Moser, 2009). The interest of this new research is to consider the unemployment experience as a more complex process that is based not only on the strong negative effects of unemployment but also on a set of cognitive mechanisms aimed at reducing these effects (Thill et al., 2018). It therefore offers a cognitive approach to analyzing emotional regulation and an understanding of a psychological phenomenon rooted in a socioeconomic context that has potential interactions with the strategies individuals implement.

As such and in order to advance the understanding of these regulatory mechanisms, with this study, we attempted to extend the understanding of how certain psychological constructs and demographic variables influence the unemployment normalization. Drawing on an extensive literature review (Pignault and Houssemand, 2018), a set of psychological variables were selected and linked with the general model of unemployment normalization. Then, a general model of the unemployment normalization and its four dimensions was confirmed as well as their effects on health (Pignault and Houssemand, 2017). The affective variables, *negative* and *positive perceptions* of unemployment, were positively and moderately influenced by the cognitive dimensions of normalization, specifically *external justifications* of unemployment for negative perceptions of unemployment and the *unemployment norm* for positive perceptions. These two cognitive variables depended on the age of the unemployed and their belief in the role of luck or chance in their employment situation (chance locus). Thus, jobseekers who think that chance is responsible for their unemployment attribute their situation more to external factors (companies and the economic downturn) and have a greater tendency to believe that today, unemployment is an inevitable part of one's career. The age of the unemployed person had a differential effect on the intensity of these two cognitive mechanisms: Younger people believe more that unemployment is a mandatory stage in life, and older people view their employment as dependent on variables they cannot control. The negative effects of unemployment are greater for people with an emotion-focused coping strategy, for those who consider work important in life, and for older jobseekers. On the other hand, there are fewer negative effects for people with high self-esteem. With regard to the positive experiences of unemployment, jobseekers who feel that work is not the only concern in their lives report that being unemployed does not have only disadvantages. This was also the case for those who think that their situation is their responsibility (internal locus). Finally, as expected, negative perceptions of unemployment increased mental health problems and, to the same extent, the opposite was true for positive perceptions of unemployment. Although work centrality mediated the effects of these two dimensions on perceived health, work centrality also had a direct impact on health. It seems to protect against a deterioration in unemployed people's SWB. The interpretation of this result is rather difficult given the current state of information. It may be the case that the importance of work leads to jobseeking and/or solution strategies that protect these people from health problems. This potential explanation will have to be verified, for example, by introducing questions on the jobseeking activities of the unemployed. In the same vein, emotion-focused coping also had a slight direct effect on mental health by tending to reduce the problems they experienced. Finally, only the personality trait *neuroticism* had a unique direct link to unemployed people's health, and people with high neuroticism scores tended to report significant health problems.

The main result of these analyses shows that, apart from neuroticism, all the psychological variables are related to mental health only because they influence the dimensions of the unemployment normalization. In fact, the current results confirm most of the conclusions of previous studies but bring to light the need to consider the mechanisms for normalizing unemployment as an intermediate vector of the relationship with jobseekers' perceived health. Nevertheless, further studies are needed to confirm these results and other variables related to unemployment. A survey on jobseeking techniques should be introduced in order to better understand how the normalization process, beyond the emotional regulation it allows, may influence jobseeking behaviors.

These results are important because they provide a process-oriented understanding of the perception of unemployment, whereas most previous studies, with the exception of Kinicki and Latack (1990) and Latack et al. (1995), only verified correlations between psychological variables and the health of unemployed people. The current results also make it possible to imagine ways for employment and vocational advisors to better address the individual situations of jobseekers. For example, it may be possible to highlight the more positive elements of unemployment in order to reduce the likelihood of experiencing the health problems it produces. More practical studies on new intervention methods would enable us to confirm the present results and the intervention options they propose.

Limitations

As with any study, certain limitations may mitigate the results that were observed. Although this study offers a cognitive approach and was designed to understand the concept of unemployment normalization and its mechanisms, its focus on multiple dimensions and scales did not allow us to conduct an in-depth exploration of how these effects of compensation may occur between the modes of emotional regulation and how these mechanisms may change over time. Longitudinal studies should be conducted to provide a better understanding of such changes and whether the effects of the psychological variables considered here are constant or change with the duration of unemployment and the jobseeking activities of the unemployed.

The study sample consisted of a relatively limited number of participants, compared to the total population of jobseekers in France and Luxembourg. Moreover, because only volunteers participated in the survey, not every characteristic of the entire population of jobseekers could be taken into account. Even if all unemployed people are required to attend compulsory interviews with the national public employment services, it is conceivable that those who are furthest away from finding work, for objective or subjective reasons, might be poorly represented in this study. Thus, replications of the survey will have to be carried out in order to seek to refine these results and to and to identify differences that may exist between jobseekers.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements. The Luxembourg Agency for Research Integrity (LARI) specifies that according to Code de la santé publique - Article L1123-7, it appears that France does not require research ethics committee [Les Comités de Protection des Personnes (CPP)] approval if the research is non-biomedical, non-interventional, observational, and does not collect personal health information. Otherwise, with regard to Luxembourg regulations, Code de déontologie médicale, Chapter 5, Article 77 of states "The experimentation on a healthy subject is admitted if it is about a person of major age able to give freely his consent." Because the present research is not a study for the development of biological or medical knowledge, thus CNER approval is not required.

AUTHOR CONTRIBUTIONS

CH was responsible for study conceptualization, data collection, data preparation, data analysis, and report writing. ST was responsible for data collection and data preparation. AP was responsible for study conceptualization, data collection, and report writing. All authors contributed to the article and approved the submitted version.

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The Roles of Psychological Capital and Gender in University Students' Entrepreneurial Intentions

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Universities increasingly play an important role in entrepreneurship, which has contributed to gender equality in the business world. The aim of this study is to establish a causal model of entrepreneurial intentions and explore it by gender, based on the dimensions of the Theory of Planned Behavior, and how these are mediated by the individuals' resilience and psychological well-being. The previous work experience was considered as one of the control variables, in order to analyze whether this influence the entrepreneurial intention. With a convenience sample of 644 Portuguese students, Structural Equation Modeling (SEM) was used. For a better understanding, multivariate analyses were performed and each one was individually reported, and for appropriate comparisons by gender, the *t*-student test was used. The comparison of means, between genders, showed that there are differences only between perceived behavioral control, subjective norm, and entrepreneurial intention, with women scoring the highest values, and psychological well-being, with men scoring the higher. A serial mediation path was performed, and psychological resilience was found to mediate a significant effect between perceived behavioral control and intention in females, but not in males. It also mediates a significant effect between attitude and intention in females, but not in males. These results show that attitude is a determining factor for females to become entrepreneurs. Finally, after discussing the results, theoretical and practical contributions are analyzed, with regard to the field of entrepreneurship in Portugal, and alternatives are pointed out for a more entrepreneurial future, reinforcing the role of higher education institutions.

Keywords: entrepreneurship, gender, psychology, intention, Portugal

INTRODUCTION

The 2008 economic and financial crisis led to a sharp decrease in investment levels, with significant consequences for companies and people, all over the world. In 2013, Portugal started an expansion cycle, in which 2015 stands out as the best year for entrepreneurship in Portugal (GEM, 2019). Entrepreneurship is a growing phenomenon worldwide, not only because entrepreneurial activity contributes to job creation but also because it contributes to the sustainability of the competitiveness of a country's economic activity.

As a crucial key for the transmission and dissemination of knowledge, Universities are considered a mechanism to improve economic growth (Audretsch and Caiazza, 2016), helping the development of potential entrepreneurs. This can help a country, here in particular Portugal, to reduce unemployment levels and increase entrepreneurial activity. Universities are generally seen as a driving factor, especially for young people entering the labor market; however, these are also seen as a complex issue. On the one hand, due to the vast number of areas of education and occupational approaches and, on the other, to the vast differences between individuals who are part of this branch of education.

In this study, we will focus our approach on the second topic mentioned, specifically gender differences. Entrepreneurship is portrayed in the literature as a male-dominated field (Markussen and Røed, 2017), which means that gender is a highly complex variable and moderates the individual's behavior and intentions in becoming an entrepreneur (Markussen and Røed, 2017; Guzman and Kacperczyk, 2019). Although Universities can be a starting point for an individual's decision to become an entrepreneur, we argue that the variability of entrepreneurial potential at the heart of the academy, by gender, must also be understood (Bergmann et al., 2018; Dilli and Westerhuis, 2018).

In Portugal, entrepreneurship is seen as the third mission of universities, as it aims to reflect their contributions to society. Currently, data from reports on entrepreneurship in Portugal assess the entrepreneurial intent of the university population (e.g., Global University Entrepreneurial Spirits 'Student Survey, 2018); however, do not study gender differences in depth. Three important Portuguese universities (University of Aveiro, University of Porto and University of Minho) created the Entrepreneurship Observatory, whose objective is to characterize entrepreneurship ecosystems, in order to understand their evolution; this mechanism seeks to make an analysis upstream and not downstream, not fully covering the characteristics of the entrepreneur or potential entrepreneur from the theoretical point of view (Santos et al., 2013).

This study seeks to answer to this gap, and the aim is to analyze the entrepreneurial intention in a Portuguese university context, and, more specifically, to understand how gender differences affect this factor. In this way, a mapping of the causal relation of psychological variables with the entrepreneurial intention will be made, in both male and female; later, it will be discussed how this relates to the situation of entrepreneurship development in Portugal.

Entrepreneurial activity is understood as being a process that develops over time, and it has a beginning long before the moment when the individuals create their company. Thus, like any other human behavior, it requires planning and understanding of the process of intention and decision making to become a business person (Loiola et al., 2016). Accordingly, the entrepreneurial intention is seen as a previous and determining element for the realization of a new enterprise, it is assumed to be the first step in the formation of new businesses behavior (Krueger, 2009; Margaça et al., 2020).

Although commonly studied in several areas (e.g., health), intrinsic psychological variables, such as resilience, are rarely included in models of intention. This is a huge gap in the literature, considering that they are variables that influence the decision to create new businesses (Lindsay, 2014). In addition, they are also cited as a reason for the creation of companies in many countries, such as Germany, and especially in females (GEM, 2019).

Thus, this study aims to 1—establish a causal model for entrepreneurial intentions applicable to the Portuguese and university context and analyze it by gender and 2—explore what the role some psychological variables play in the intention of being an entrepreneur in university students and by including them in a new causal model to understand how future entrepreneurship-oriented initiatives are explained by the current situation in the country (OECD, 2019). Finally, the study will analyze the models separately by gender, which will allow to better visualize difference and similarities, meaning it goes explaining genders as models.

THEORETICAL BACKGROUND AND CONCEPTUAL MODEL

The Role of Gender in Entrepreneurship

The definition of an entrepreneur is a strong challenge, as it is necessary to attend to the idiosyncrasies and heterogeneity of each one (Margaça et al., 2020). Thus, the concept of entrepreneurship is also not based on a static profile of people and interests (Mwatsika et al., 2018) and described as *a maturing strand of enquiry* (Jennings and Brush, 2013). It is seen as a set of individual (Kerr et al., 2018) and group (Parker, 2018) actions, which lead to the creation of new ventures that may vary according to the assessment of interests and opportunities. The literature points to a set of differences when an entrepreneurial initiative is created by groups, namely, with regard to gender (Nwankwo et al., 2012; Lima et al., 2016; Pérez-Quintana et al., 2017). It is mainly Psychology that describes strong empirical evidence that the structure of male entrepreneurship is different from the structure of female entrepreneurship, both in building business (Kelley et al., 2017) and in the goals they hope to achieve (Minniti, 2009; Marlow and Dy, 2017). These data allow us to affirm that there is a male and a female pattern in the way of making entrepreneurship happen. Some studies (Marques and Moreira, 2013; Kelley et al., 2017) show that men are more interested in Engineering and Technology, while women opt for the social aspect (Barbosa et al., 2011). The differences between both in terms of objectives, business perceptions, and resilience are also evident (González-López et al., 2019). On the one hand, these differences can be seen as positive, in the sense of a broader contribution and in different business sectors, as well as for the development of society (Brush, 2006). On the other hand, these differences are seen as gender stereotypes, that is, the business world is seen as belonging to the male universe, which increases the favorability of male models of behavior (Lewis, 2006; Feder and Nițu-Antonie, 2017). Based on this, we are allowed to argue that these evidences influence how the act of entrepreneurship is perceived by men and women.

The basis of the intention to undertake is seen as a different experience between men and women, as the perception and cognition of both (Hyams-Ssekasi et al., 2019) lead to a different path in their development. This fact has attracted interest from researchers in this field on why people become entrepreneurs and what is the role of gender in increasing entrepreneurship.

Literature assumes that intention is influenced, for instance, by personal variables and is the one that better predicts and anticipates a given behavior. Entrepreneurial intention (EI) is presupposed as being the first step in new business formation and is a deliberately designed behavior (Krueger, 2009). EI is a conscious state of mind that directs attention toward a specific goal or pathway in order to achieve the stated ambitions (Liñán and Fayolle, 2015). Recently, it has been pointed out as being a cognitive representation of the actions to be implemented by individuals who want to establish new companies (Paço et al., 2015). According to Loiola et al. (2016), the orientation of an action to a new venture can be influenced, on the one hand, by interpersonal relationships, which can provide economic, social and informational resources. Secondly, it can be influenced by cultural aspects, such as the group's acceptance and approval of the group to certain economic activities, values, and principles (Balog et al., 2014). In general, it can be said that personality and psychological competences, as well as the environment, affect individuals' intention to become an entrepreneur. It is this set of variables that will be considered to analyze gender differences.

MALE vs. FEMALE: WHO IS MORE ENTREPRENEURIAL?

The Role of Personal Perceptions

According to a literature review, it is evident that there is an inequality in relation to gender and entrepreneurship. The characteristics associated with male are seen as better adjusted to the creation of the business itself, especially with regard to motivation, attitude, and behavior (Caliendo et al., 2015). Minniti (2009) states that the difference between men and women is in their personal and entrepreneurial character, as they create businesses in different areas, stipulate different goals and the way they organize the businesses is very specific. It reveals that the differences are based on the particularities of the personality and on their psychological skills. Differences in personality, principles, and moral values lead men and women to choose different professional activities and to prefer a different organizational format. Studies also suggest that men and women differ in terms of entrepreneurial orientation and that these differences are able to explain their preferences and behaviors (Ngek and van Zyel, 2016). The 2016 World Economic Forum report describes Portugal as a country where inequality between men and women decreases from year to year, occupying Portugal 31st place in the ranking of gender differences between 142 countries. In terms of the percentage of men–women, Portugal had an evolution in parity compared to previous years, with the overall active population in Portugal having 9.2% men and 6.1% women entrepreneurs (GEM, 2019). According to the Mastercard Index of Women Entrepreneurs (2019), Portuguese women are in the top 10 worldwide. Some recent studies (e.g., Oliveira et al., 2013; Fernandes et al., 2018) corroborate that the Portuguese male students have a higher percentage toward the intention or determination to be entrepreneurs. This result is also common in other countries (e.g., Gupta et al., 2008; Ventura and Quero, 2013; Ward et al., 2019); therefore, we consider to expect the same output in this study.

Personal perceptions of controllability and self-efficacy related to a certain behavior strongly influence the perceptions of situational risks, as well as the intentionality and decision making in becoming an entrepreneur (Yates and Stone, 1992; Krueger and Brazeal, 2017). Considering evidence, it is expected in this study to find differences in the average of perceptions between male and female; however, the same is not expected in relation to the causal predictions to intention between both. In order to explore the perception of entrepreneurial behavior in students, we will use the Perceived Behavioral Control (PBC). This will make it possible to study both the controllability and the effectiveness of the respondents. Supported by Ajzen (1991), PBC is a determinant of both behavioral intention and of the behavior itself. On a conceptual basis, PBC is similar to self-efficacy—both constructs refer to the person's belief that the behavior in question is under his or her control. However, operationally, PBC is often assessed by the ease or difficulty of the behavior, while self-efficacy is operationalized by the individual's confidence in being able to carry out the behavior in the face of extenuating circumstances (Ajzen, 2002). Controllability refers to a person's assessment of the ease or difficulty of becoming an entrepreneur, which means a person's belief or perception about executing and controlling a determined behavior. In addition, it is important to emphasize that these factors can be affected by "exogenous influences" (Souitaris et al., 2007).

> H1: For males and females—PBC has a significant and positive effect on EI, which is not significantly different from each other.

The attitude toward a behavior refers to the degree of evaluation—favorable or unfavorable—in relation to this behavior (Ajzen, 1991). In the field of entrepreneurship, the attitude toward creating own business is usually defined as "the difference between perceptions of personal desirability in becoming self-employed and employed" (Souitaris et al., 2007, p. 570). Several authors (e.g., Ajzen, 1991; Goethner et al., 2012; Fernandes and Proença, 2013; and many others) point out two components of the attitude: (1) affective/experiential—feelings or emotions (e.g., joy, satisfaction) and drives engendered by the perspective of performing a behavior and (2) instrumental/cognitive—beliefs, thoughts or rational arguments. This suggests that entrepreneurial behavior is a very complex interaction between predispositions (Zhao et al., 2010; Zhang et al., 2019) perceptions (Arenius and Minniti, 2005), and competences. Taking these two components into account, according to Tavares et al. (2019), it is possible to affirm that higher levels of psychological well-being positively influence the meaning at work. The individual's attitude toward entrepreneurship (ATE) is thus determined by salient beliefs in relation to behavior—behavioral beliefs—and by personal assessment of the consequences of this behavior. Several authors (e.g., Liñán and Chen, 2009; Lopes, 2010) assume that experience, education, and human capital, that is, individual skills, cleverness, and competences, and other demographic variables influence the formation of entrepreneurial intention. Studies that related Theory of Planned Behavior and entrepreneurship concluded that both ATE and PBC are significant predictors of intention. Others have tried to separate the components of ATE and PBC to examine their relative importance in predicting intention. There is evidence that gender has a significant, albeit weak, effect on ATE and PBC (Haus et al., 2013). In this study, we do not expect to achieve significant differences between men and women. As university students, exposure to knowledge and academia is expected to improve your skills and insights on what it takes to become an entrepreneur.

H2: For males and females—ATE has a significant and positive effect on EI, which is not significantly different from each other.

The Role of Psychological Capital

Psychological capital refers to a person's mental state, who exhibits positive organizational behaviors and demonstrates high job performance (Costa and Neves, 2017). Psychological capital is related to the achievements and well-being of individuals. This evidence, when developed, will determine the existence (related to the entrepreneurial intention), the development and prosperity of a business (Costa and Neves, 2017; Darvishmotevali and Ali, 2020). In recent years, academy has begun to study well-being as an important entrepreneurial outcome, focusing on the psychological and resilient coping mechanisms that can affect entrepreneurs (Uy et al., 2013, 2017; Stephan, 2018). Several empirical studies (e.g., Diener et al., 2009; Peters et al., 2018; Stephan, 2018) demonstrate that the entrepreneurs' well-being influences the cognitive processes involved in a conscious behavioral choice, such as goal setting. Thus, it is also possible to affirm that well-being influences the decision to become entrepreneur, and the direction, intensity, and persistence in the establishment and pursuit of entrepreneurial goals. A study of women entrepreneurs in the United States (O'Hare and Beutell, 2020), for instance, revealed how they emphasized the need for autonomy and flexibility (Sánchez-Cañizares and Fuentes-García, 2010), challenge, feelings of accomplishment, and well-being. The narratives of these women entrepreneurs help us understand the factors that motivated to start their business and the importance of the business for their overall well-being (O'Hare and Beutell, 2020). Other studies show the variability of the reasons for starting an enterprise, between genders, stating that men are mainly looking for profits (Maes et al., 2014). The literature makes it possible to state that motivational factors influence decision making to become an entrepreneur (Williams and Williams, 2011). GEM (2019) mentioned that 48% of Portuguese women entrepreneurs are driven by pull factors, against 27% driven by necessity. In other words, Portuguese women have an intrinsic motivation to initiate the entrepreneurial activity, explore the opportunity on their own incentive, are more motivated, and do what they want in order to also guarantee well-being. Other studies also suggest that men and women differ in terms of entrepreneurial orientation and these differences are able to explain their preferences and behaviors (Neneh et al., 2016). The Psychological Wellbeing (PWB) of workers in general can be perceived as being a multidimensional psychological construct, assimilated by fulfillment and commitment to work and affective commitment to the organization (Siqueira and Gomide, 2004; Siqueira and Padovam, 2008). Self-employed workers have higher levels of vitality and feel positively energized and cognitively more active, which translates into a better perception of health (GEM, 2019). In this way, we expect to find differences between both genders in relation to the PWB, with regard to controllability and attitude.

H3: PWB mediate the positive effect of PBC on intention, which is stronger in females.

H4: For males and females—PWB mediate the positive effect of ATE on EI, which is not significantly different from each other.

The Role of Individual Skills

Some studies (e.g., Borges et al., 2016) report that entrepreneurs make subjective perceptions of the social environment. According to these authors, it is the social context that influences the entrepreneur in the development of strategies, and therefore, it has an important role in determining the results. This element can be perceived in different ways, when referring to gender. Portugal does not escape this trend, because there are clear phenomena of horizontal and vertical segregation, different degrees of vulnerability to unemployment, and precarious and atypical forms of employment and variable propensities to create own jobs (Casaca, 2012; Marques and Moreira, 2013), which tend to operate to the disadvantage of women, in particular. Policies aimed at promoting the entrepreneurship of women are still relatively incipient in most European Union member states (Instituto para o Fomento e Desenvolvimento do Empreendedorismo em Portugal [IFDEP], 2014, p. 33). The unequal involvement of women and men in entrepreneurial activities depends on two main factors: (1) contextual obstacles—educational choices in the formal education system and dominant representations of femininity, science and innovation and (2) economic obstacles—requiring the innovation sector to make a substantial investment and women appear to be less credible than men in terms of financing (European Commission, 2014). Since it is difficult to measure perceptions, we chose to use the subjective norm (SN), in order to infer how the social pressure that individuals can feel can influence the decision to become an entrepreneur. Some studies (Hartman and Hartman, 2008; Leroy et al., 2009) suggest that, in certain contexts, women may be more strongly motivated by social pressures than men. Hartman and Hartman (2008) found that normative beliefs are more important to influence women's occupational intentions in an activity dominated by men. Women tend to value more the opinion of the social environment where they are inserted when deciding whether or not to become an entrepreneur. The Ease of Doing Business Index (2020) ranked Portugal in 63 out of 190 economies and presents the same results for men and women results in terms of ease of business creation. Previous research (e.g., Verheul et al., 2006) offered little empirical evidence that there is more social pressure for men to become entrepreneurs than women. Indeed, literature presents no significant gender differences in the normative opinion of others to become an entrepreneur. To summarize, both are equally stimulated by the social milieu to make the decision to become entrepreneurs. However, based on the study of Leroy et al. (2009), we believe that SN have a more important role in stimulating women entrepreneurship, who also want guarantee their well-being.

H5: For males and females—SN toward entrepreneurship has a significant positive effect on EI, which is not significantly different from each other.

H6: For males and females—PWB mediates the positive effect of SN on EI, and the effect is significantly stronger in females.

The transformations in the global economy and in the world of work have led to new forms of labor relations and thus demand new personal and professional characteristics. In a highly competitive market, it is not enough to have technical skills and expertise in line with what is required. Increasingly, behavioral competencies have represented a major differential for the success and failure of a career and a business of its own (Shin and Kelly, 2015). Faced with difficulties and, through Psychological Resilience (PsyResil), people are able to renew and dedicate themselves to achieve success, dealing with previous mistakes as a learning and seeking the necessary knowledge for good management and market vision (Kolar et al., 2017). PsyResil is considered as an interactive process between the person and the social environment (Rutter, 1987; Rutter, 2012); it is an important and essential feature in the decision to become an entrepreneur, as well as guiding success in maintaining their venture (Cheng et al., 2020).

In the current competitive business world, PsyResil is a predictor of business success at all stages of the entrepreneurial activity, and an important personal quality for entrepreneurs, both men and women (Bullough and Renko, 2013). The literature points out that female entrepreneurs exhibit different characteristics of entrepreneurial resilience when compared to men (Markman et al., 2005). Women from decision making tend to be more psychologically resistant and ready to face challenges in a stable way. In addition, it is believed that women entrepreneurs who demonstrate entrepreneurial resilience are willing to work harder to achieve all their goals, to adapt quickly to changes, in order to create and take advantage of new business opportunities (Loh and Dahesihsari, 2013).

According to National Statistics Institute (INE) data, in October 2019, the youth unemployment rate in Portugal was estimated at 18.3%, still above the European average, despite having had a significant reduction in Europe. The unemployment rate, in Portugal, in the fourth quarter of 2019 was 6.7%. However, in March 2020, the same source reveals that were created 2565 companies. In the perspective of Vell (2009), the increase in entrepreneurship levels leads to an increase in the progress of economic performance and the hiring of employees by new entrepreneurs; therefore, the increase in entrepreneurship levels leads to a decrease in unemployment. Consequently, there is an urgent need for entrepreneurship to develop a country's social and economic market (Deli, 2011). Currently, it is recognized that women play an essential role in a country's growth process and that their participation can strengthen economic acceleration (Micozzi and Lucarelli, 2016). Some authors (e.g., Silva et al., 2019) say that PsyResil can play an important role in motivating women who face adversity since the beginning of their entrepreneurial activities. In this sense, we expect that PsyResil can positively predict and mediate the effect on entrepreneurial intentions, and that the resilience will have a higher impact on women's performance.

H7: For males and females—PsyResil has a significant positive effect on EI, which is not significantly different from each other.

H8: For males and females—PsyResil mediates the positive effect between PBC and EI, which effect is significantly stronger in females.

H9: For males and females—PsyResil mediates the positive effect between ATE and EI, and is not significantly different from each other.

For males and females: PBC (H10) and ATE (H11) positively increase PWB, one of the reasons that makes individuals more resilient to deal with the undertake process, having a positive effect in their EI.

In view of the above, **Figure 1** represents our structural model. Due to the influence of other variables present, we controlled its effect. Previous studies highlight the influence of previous work experience in relation to entrepreneurial intention (Arenius and Minniti, 2005), as well as the fact that parents have their own business (Kuckertz and Wagner, 2010).

MATERIALS AND METHODS

Sample and Procedure

Sampling

The sample was collected by stratified sampling. It was proceeded as follows: (1) Despite being a small country, Portugal and the

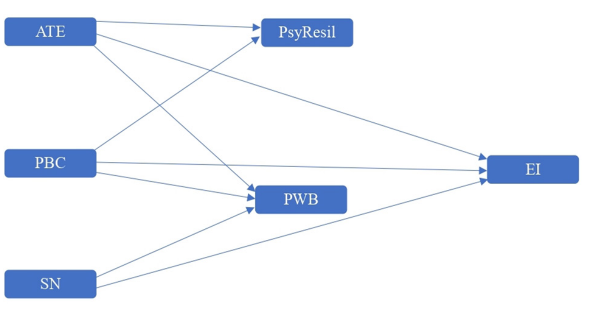

FIGURE 1 | Structural model.

Islands have cultural and political variations and (2) the study did not specifically focus on business students, since different academic fields may also show differences in the entrepreneurial behavior. In order to increase the representativeness of the population, this study specifically aimed to reach as many possible geographic regions and academic fields.

The sampling was carried out between December 2018 and February 2019, through the collaboration of educational contacts from all Portuguese universities, which led the students to answer our questionnaire. Before the questionnaire, students should agree to an informed consent, where we specified the purpose of the study, as well as ensuring the protection of their data, which included anonymity and confidentiality.

All students received the questionnaire by e-mail, and they responded using an online platform. Participants were instructed on how to access the questionnaire and how to answer it. The questionnaire had no time limit to be answered, but the duration to fill it was estimated at 20 min approximately.

Participants

The study sample comprised of 644 university students from Portugal, representing the 18 districts and Azores Archipelagos and 21 universities and 7 polytechnic institutes. The age varied between 18 and the 64 years, with an average age of 25. **Table 1** presents the demographic details of the sample by gender and academic field, and **Table 2** presents the different regions of the country and islands. Women represent the majority (69%), while men represented 31%. Almost a third of the sample comes from courses in the Health field, namely, Medicine and Nursing (31.21%), followed by Management and Economy (18.32%) and Psychology (14.59%).

Instruments

The Entrepreneurial Orientation Questionnaire (Sánchez-García, 2010) used in this study presents statements that must be answered in range metrics, that is, a Likert scale from 1 to 5. The scale has the specific objective of measuring entrepreneurial skills and related attitudes, and it is potentially useful for university students who must choose their professional future career. We used the following subscales, which will explain below, for which we also present the reliability of the original subscales: Perceived Behavioral Control (6 items, α = 0.884), Attitude toward Entrepreneurship (10 items, α = 0.834), Subjective Norm (4 items, α = 0.781), Psychological Resilience (9 items, α = 0.89), Psychological Well-Being (29 items, α = 0.90), and Entrepreneurial Intention (6 items, α = 0.936). This Questionnaire was administered to a sample of 1,810 university students from Spain, Portugal, Mexico, Brazil, and Argentina; for that reason, the original model of the scale was also validated for the Portuguese population.

Perceived Behavioral Control (PBC α = 0.942) is defined as the perception of the ease or difficulty of becoming an entrepreneur, the feeling of confidence and ability to control and carry out a behavior to create a company. There are some examples of the items: "Starting a business would be easy for me" or "I know how to develop an entrepreneurial process." Both are respectively examples of self-efficacy and controllability.

Attitude Toward Entrepreneurship (ATE α = 0.964) is deeply connected to intentional and volitional behavior, beliefs, attitudes (Elfving, 2008), and a set of skills. ATE refers to the "degree to which a person has a favorable or unfavorable appraisal of the behavior under scrutiny" (Fini et al., 2012, p. 390). As an example, we highlight one of the items "I feel very competent and confident that I could identify market opportunities for a new business."

Subjective Norm (SN α = 0.965) refers to the perceived social pressure to perform or not a behavior and the perception what the important people for the individual could think about the decision to become an entrepreneur. This variable is commonly measured by asking participants to what extent they think the relatives and close people that would support them in engaging in entrepreneurial activities (Ajzen, 2002; Liñán and Chen, 2009).

Psychological Resilience (PsyResil α = 0.952) can be considered as an ability to cope with adversities and recovering from adverse experiences, being a set of continuous behaviors, formed by the fusion of the following personal behavioral characteristics: flexibility, high motivation, perseverance, and optimism. This fact gives an entrepreneur with discernment the ability to adopt the application of different strategies to deal with a challenge until it is overcome (Margaça et al., 2020). We measure PsyResil by asking students, for example, "I think I can grow positively when facing difficult situations."

Psychological well-being (PWB α = 0.961) is measured according to Ryff's Psychological Well-being Scale reduced version (1995) (Ryff and Keyes, 1995). Well-being can be identified from the psychological resources that the individual has. There are cognitive, affective, and emotional processes that are globally described from six central dimensions to positive psychological functioning: acceptance of self, positive relationships with others, mastery environment, personal growth, life goals, and autonomy. There is the perception that well-being influences the cognitive processes involved in a conscious behavioral choices, such as decide to become an entrepreneur.

Entrepreneurial intention (EI α = 0.961) is a conscious state of mind that directs attention toward a specific goal or pathway in order to achieve the stated ambitions (Liñán and Fayolle, 2015). One of the items of assessment was "I will make any effort to start and develop my own business."

In this study, three control variables were used: Spirituality, Previous Work Experience (PWE), and Independent Work Experience (IWE), the last two being dichotomous. Considering these last two variables, the literature points out that one of the factors that promote entrepreneurial intention is previous work experience (Carvalho and González, 2006). Some authors highlight Spirituality as being a strong predictor of a successful entrepreneur—in particular, someone who bases the company on the personal values. Spiritual intelligence focuses on skills that predict functioning, adaptation, and ability to produce valuable products and services. Accordingly, questions were asked such as: "When faced with an important decision, my spirituality plays absolutely no role (0) or it is always the primary consideration (10)," using the six-item Intrinsic Spirituality Scale by Hodge (2003)—which was translated and adapted for the Portuguese language (Spirit α = 0.981). This scale measures the degree to which spirituality functions as an individual's master motive, for

TABLE 1 | Sociodemographic data.

Variable	Female		Male		Total sample	
	N	%	*N*	%	*N*	%
Gender	444	68.9	200	31.1	644	100
Previous work experience	203	45.72	107	53.5	310	48.14
Independent work experience	135	30.41	52	26.0	192	29.81
Independent work—mother	50	11.26	25	12.5	75	11.65
Independent work—father	66	14.86	50	25.0	116	18.01
Health	161	36.26	61	30.5	222	34.47
STEM	72	16.22	52	26.0	124	19.25
Law and humanities	39	8.56	47	24.0	86	13.36
Social sciences	75	16.89	19	9.5	94	14.59
Management and economy	79	17.79	39	19.5	118	18.32

N = 644 students; universities = 29; age mean: 25.

TABLE 2 | Participants by regions.

Region	Participants
North	80
Center	193
Lisbon and Tejo Valley	174
Alentejo	83
Algarve	23
Azores Archipelago	91

theistic and non-theistic populations, both within and outside of religious frameworks. The scale uses a sentence completion format to measure various attributes associated with spirituality; that is, an incomplete sentence fragment is provided, followed directly below by two phrases that are linked to a scale ranging from 0 to 10. The range provides with a continuum on which to reply, with 0 corresponding to absence or zero amount of the attribute, while 10 corresponds to the maximum amount of the attribute (Hodge, 2003).

Statistical Procedure

In this study, to analyze the model and measure causal relationships, we used Structural Equation Modeling. For this, IBM SPSS Amos 23 and IBM SPSS 23 were used for the remaining analyses.

Model Fit

In this study, the sample totalized 644 participants. According to Kline (2011), a typical sample size in studies where SEM is used is about 200 cases. Thus, the following indices were considered for model fit: the Comparative Fit Index (CFI), the Tucker–Lewis Index (TLI), the Adjusted Goodness of Fit (GFI), the Root Square Error of Approximation (RMSEA), and the Expected Cross Validation Index (ECVI). The adjustment index values are as follows: CFI $>$ 0.90; GFI $>$ 0.95; and RSMEA $<$ 0.05 (Hair et al., 2010); TLI $>$ 0.90 (Awang, 2012); although the ECVI does not have specific threshold indexes, it is assumed that the lower the index, the better the fit and the better the model can predict the future covariance of the sample (Browne and Cudeck, 1992). In order to demonstrate how much of the variation of the independent variables is explained by the predictors, multiple squared correlations (R2) were performed.

Direct, Indirect, and Moderation Effects

The Maximum Likelihood Estimate was performed to calculate the coefficient and significance of the direct effects. In order to estimate the mediation effects and group differences, Bootstrap was used with 2000 interactions and 0.95 bias correction. The product or the difference between the unstandardized regression weights was considered, on the mediation or moderation path, to test whether the effect between the variables is statistically significant, at a 95% confidence level. The alpha was $p < 0.05$ for statistical significance.

Mean Comparison Between Genders

The *t*-test statistic was used to calculate and compare the mean difference between genders. In order to observe the homogeneity of the variables ($>$0.05), we used the Levene test.

RESULTS

Model Fit

The model adjustment indexes for SEM obtained in the study were CFI = 0.912; TLI = 0.901; GFI = 0.976; RSME = 0.04; and ECVI = 0.445. According to the index of adjustment values described above (Browne and Cudeck, 1992; Hair et al., 2010; Awang, 2012), our model presents a good fit and above the common standards, which means that the proposed model accounts for the correlations between the variables proposed in the data set. R2 values are also adequate, explaining in females 77% and in males 75% of the variance of the dependent variable. Pearson correlations can be found in **Table 3** and highlight a strong and significant correlation of ATE with entrepreneurial intention, which corresponds what the literature point out. The results achieved allow us to underline the required theoretical coherence, thus, we proceed to test the remaining hypotheses.

TABLE 3 | Pearson correlation analyses.

	1	2	3	4	5	6	7	8	9
1. PBC	1								
2. ATE	0.880**	1							
2. SN	0.908**	0.842**	1						
4. PsyResil	0.831**	0.854**	0.840**	1					
5. PWB	−0.006	−0.005	−0.006	−0.005	1				
6. Spirit	0.849**	0.869**	0.961**	0.916**	0.014	1			
7. PWE	−0.016	−0.035	−0.016	−0.031	−0.040	−0.026	1		
8. IWE	0.039	0.037	0.034	0.039	−0.064	0.042	−0.045	1	
9. EI	0.814**	0.849**	0.823**	0.916**	−0.002	0.921**	−0.019	0.033	1

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

Regression Weights

It is important to highlight the weight of each regression to understand how each variable interacts individually, before elaborating the path model. Thus, we demonstrate these values for both genders in **Table 4**.

The three exogenous variables of our model significantly predict the students' entrepreneurial intention, with the PBC presenting a stronger regression value, for both female and male. There is a significant difference between coefficients from the other exogenous variables on gender. For females: $p = 0.001$ when to compared to ATE, and when compared to SN $p = 0.001$; and for males: when compared to ATE $p = 0.017$ and $p = 0.001$ when compared to SN. No statistically significant differences were found between groups (for PBC $p = 0.389$, for SN $p = 0.145$, and for SN $p = 0.376$). However, females reach higher coefficients on SN, and males on PBC and ATE. That is, the perception of these variables of both genders affects their intentions, although not significantly different from each other.

For male, PBC and ATE have a statistically significant regression to PWB. However, none of them affect significantly the male students' PsyResil. In the case of female, the PBC has not a significant regression in the PWB, and in the case of PsyResil both (PBC and ATE) has a significant regression. SN has no significant impact in male for PWB and PsyResil, but the opposite is true for females.

PsyResil impacts significantly entrepreneurial intentions in females, but not in males. Similarly, the PWB effect is drastically stronger and significant on entrepreneurial intentions in females, but not in males.

Regarding the other control variables, Spirit effect is drastically stronger and significant on entrepreneurial intentions and PsyResil in both females and males. Interactions with PWE and IWE presented non-significant (e.g., PWB) and/or negative effects. Both PWE and IWE impact negatively in females' intentions; in the case of males, only PWE has a negative effect.

Path Model Effects

When females have a favorable and elevated perception to achieve an entrepreneurial behavior, this increases their well-being and the entrepreneurial intention. That is, the PWB mediates a very positive and significant effect between ATE and EI. The PWB also mediates positively and significantly the relationship between SN and EI.

PsyResil mediates a significant effect between PBC and Intention in females, but not in males. Also mediates a significant effect between ATE and Intention in females, but not in males. We ran a serial mediation path and found that ATE positively affects (1) PWB, which affects (2) PsyResil and that in turn affects (3) EI, just in females. These results highlighted that ATE is a determining factor for females to achieve their entrepreneurial activities. **Table 5** demonstrates the results obtained from path model by gender.

Mean Comparison Between Genders

Table 6 indicates the average of each variable by gender, and the results are obtained in t-test analysis. The biggest responses' difference we found concerns EI, with a mean difference of –0.234 (significant, $p = 0.004$), and the smallest difference concerns ATE, with a value of mean difference of –0.045 (not significant, $p = 0.543$). Considering that they are university students, regardless of gender, we conclude that the fact that there is no difference between them is due to the ease of access to resources for promotion and improvement of their skills and competences, which could be useful in the case that they become entrepreneurs. Cohen's d is an appropriate effect size for the comparison between two means. When we calculated this test for differences between means, was found that only the PWB and EI reached acceptable effect size values, $d = 0.48$ (medium effect size) and $d = 0.241$ (small effect size), respectively (Cohen, 1988).

Contrary to what would be expected and according to several sources, our sample contradicts the common tendency for males to score higher and significantly in EI, with females presenting higher and more significant values. Males only score higher and significantly for the PWB. In other words, their psychological sustainability allows the creation, intrinsically and more effectively than women, of the necessary social milieu to take the step toward entrepreneurship.

DISCUSSION

Discussion of the Results

Several studies (e.g., Bohnenberger et al., 2007) suggest that entrepreneurial behavior and the development of

TABLE 4 | Regression weights by gender.

	Females			Males		
	B	SE	ρ	B	SE	ρ
PWB←PWE	0.378	0.409	0.299	0.152	0.261	0.438
PWB←IWE	0.122	0.048	0.389	0.039	0.126	0.585
PWB←ATE	0.173	0.035	***	0.243	0.068	0.004**
PWB←PBC	0.086	0.028	0.068	0.198	0.055	0.003**
PWB←SN	0.124	0.036	0.022*	−0.022	0.058	0.781
PsyResil←PBC	0.188	0.041	***	0.021	0.056	0.789
PsyResil←ATE	0.150	0.055	***	0.222	0.097	0.171
PsyResil←SN	0.132	0.024	0.023*	0.326	0.078	0.231
PsyResil←Spirit	0.161	0.055	***	0.372	0.078	***
PsyResil←PWB	0.199	0.038	***	0.176	0.069	0.031*
PsyResil←IWE	−0.221	0.511	0.399	0.041	0.311	0.896
EI←PBC	0.623	0.039	***	0.734	0.069	***
EI←ATE	0.146	0.044	0.003**	0.439	0.089	***
EI←SN	0.335	0.048	***	0.186	0.085	0.031*
EI←PWE	−0.042	0.059	0.546	−0.133	0.213	0.212
EI←IWE	−0.179	0.499	0.697	0.062	0.481	0.787
EI←PsyResil	0.123	0.042	0.039*	0.064	0.096	0.630
EI←PWB	0.301	0.049	***	0.150	0.078	0.123
EI←Spirit	0.408	0.042	***	0.398	0.051	***

*Maximum likelihood estimation; B: unstandardized estimates; ***p = 0.001 or less; is significant at the <0.05 value, **p < 0.01; *p < 0.05.*

TABLE 5 | Effects for path model by gender.

	Females				Males			
	Effects		Confidence interval		Effects		Confidence interval	
	β	ρ	LB	UB	β	ρ	LB	UB
PBC → EI	0.522	***	.	.	0.623	***	.	.
ATE → EI	0.122	0.003**	.	.	0.244	0.007**	.	.
SN → EI	0.211	***	.	.	0.176	0.041*	.	.
PBC → PsyResil → EI	0.107	0.004**	0.010	0.058	0.002	0.634	−0.011	0.032
ATE → PsyResil → EI	0.014	0.024*	0.002	0.034	0.008	0.421	−0.011	0.072
PBC → PWB → EI	0.014	0.066	−0.001	0.037	0.032	0.048*	0.000	0.092
ATE → PWB → EI	0.044	***	0.017	0.074	0.044	0.066	−0.001	0.098
SN → PWB → EI	0.018	0.015*	0.004	0.040	−0.003	0.834	−0.042	0.032
PBC → PWB → PsyResil	0.013	0.052	0.000	0.033	0.043	0.022*	0.006	0.097
ATE → PWB → PsyResil	0.044	***	0.012	0.058	0.042	0.038*	0.004	0.110
PWB → PsyResil → EI	0.022	0.023*	0.004	0.047	0.011	0.367	−0.023	0.064
PBC → PWB → PsyResil → EI	0.004	0.060	0.000	0.005	0.004	0.265	−0.004	0.015
ATE→ PWB→ PsyResil→ EI	0.006	0.017*	0.001	0.011	0.004	0.322	−0.005	0.018

*β: standardized estimates; ***p = 0.001 or less; p is significant at the <0.05 value. **p < 0.01; *p < 0.05. Indirect effects: Bootstrapping: 2000 iterations and 0.95 bias-corrected. Direct effects: maximum likelihood estimation. LB is the lower bound of the confidence interval; UB is the upper bound of the confidence interval.*

entrepreneurship are influenced, above all, by the individuals' first social group—the family. However, entrepreneurial behavior can also be learned (Colette, 2013) and, therefore, the influence of entities/organizations is evident, as is the case with Universities, which support young people, transmitting knowledge and skills. In addition to the academic context, in Portugal, there are business initiatives, in the form of associations or organizations (e.g., ANJE—National Association of Young Entrepreneurs), which play a crucial role in promoting young people's attitude toward entrepreneurship. In this study, it was possible to verify that there are no statistically significant differences in the attitude toward entrepreneurship between

TABLE 6 | Variables' mean by gender.

Variable	Mean by gender				*t*-test		
	Gender	Mean	SD	SE	*t*	ρ	Mean dif.[a]
PBC	Male	3.585	0.872	0.062	−2.342	0.019	−0.160
	Female	3.745	0.769	0.037			
ATE	Male	3.563	0.965	0.068	−0.609	0.543	−0.045
	Female	3.608	0.820	0.039			
SN	Male	3.664	0.975	0.068	−2.127	0.034	−0.166
	Female	3.830	0.889	0.042			
PWB	Male	3.632	0.367	0.026	5.685	0.001	0.178
	Female	3.454	0.368	0.017			
PsyResil	Male	3.538	0.878	0.062	−0.784	0.433	−0.055
	Female	3.593	0.798	0.038			
EI	Male	3.542	1.006	0.071	−2.866	0.004	−0.234
	Female	3.776	0.937	0.044			

t-test statistic for equality of means by gender. For t-test = equality of variance is assumed in all variables: Levene's test = $p > 0.05$; 95% confidence interval for lower and upper values.
[a]Mean difference positive value means males score higher, negative value means females score higher.

both genders' students, and the attitude positively impacts the intention to undertake.

Entrepreneurship is increasingly becoming an alternative means of entering the labor market; the result of European and Portuguese directives aimed at universities (European Commission, 2013; Marques, 2015). On the one hand, there is consensus that the University can be seen as a means of promoting entrepreneurship among students, and for another the study area is not relevant. For instance, in the study by Sieger et al. (2014) it is evident that the students of management and economics have the highest levels of entrepreneurial intention; a study by Teixeira (2008) pointed out that Portuguese Pharmacy students were more entrepreneurial, yet another study with Portuguese students reveals that Social Science students score at the same level as Management Science students, regarding their desire to become entrepreneurs (Santos et al., 2010). As discussed in previous studies, it is clear that entrepreneurial skills are not a unique characteristic to the business students (e.g., Ward et al., 2019; and many other). However, exposure to knowledge and learning useful skills for creating an own business have also revealed slight impacts on intention. Thus, the university educational environment becomes an equal means in terms of gender, as it eliminates nuances of discrimination between them. A reflection of this is the fact that the sample does not reveal significant differences. Rauch and Hulsink (2015) suggest that entrepreneurship education is effective in entrepreneurial intention, and although there are no differences between both genders, this aspect allows students to increase their attitudes and perceived behavioral control.

Females' perceived social pressure to perform or not a behavior is higher; however, this variable predicts entrepreneurial intentions, which is not significantly different between both genders. This finding is corroborated by Robledo et al. (2015), who point out as a possible explanation the fact that these results can be related to the larger influence reference groups have on women in comparison with men. These authors also acknowledge that this result could be indicating that stereotypes related to the male gender domain for a greater intention to be self-employed may be disappearing, except for the greater influence of the social pressure perceived by women and their higher affiliation needs, which means they are more likely to conform to majority opinions (Morris et al., 2005; Robledo et al., 2015).

Psychological well-being mediates this effect on intentions in females, but not in males. This may suggest that positive relationships with others, personal mastery, autonomy, a feeling of purpose and meaning in life, and personal growth and development could be relevant under determining intentions in women and it may be a potential explanation for the influence (or lack thereof) in the intentions of both genders.

Social recognition is very important for female students (Ferri et al., 2018), which means that the opinions of parents, relatives, friends, and important others might be influential in the decision-making process of becoming an entrepreneur (Minniti, 2009; Ferri et al., 2018). Today, there is a consensus that the participation of women in entrepreneurship is a major factor in development (Lepeley, 2019); therefore, there is a critical element to promote inclusive development (Gallup International Labor Organization, 2017) and to increase happiness (Helliwell et al., 2019) and diversity (Hunt et al., 2018), with the active participation of women, particularly based on implicit impact of the multiplier effect. The well-being of women who want to become entrepreneurs correlates highly with attainment of work–life balance, and work engagement reaching to high levels of productivity that unleash the multiplier effect of their actions, propelling sustainable business ventures in developed and developing nations (Lepeley, 2019). These results may reflect the creation of programs to support entrepreneurship exclusively for women, in Portugal. For example, the FAME program (Advanced Training for Women Entrepreneurs), which started in 2001, is based on three crucial pillars: training, consultancy, and financial support (Instituto para o Fomento e Desenvolvimento do Empreendedorismo em P ortugal [IFDEP], 2020).

The findings revealed that perceived behavioral control predicts significantly stronger than subjective norms on entrepreneurial intentions in both genders, and it did not have an effect significantly different between males and females. Perceived behavioral control is considered as the most controversial construct in the Theory of Planned Behavior for two reasons: the inconsistency in the empirical findings related to its influence on intention and in the disagreement regarding its conceptualization and operationalization (Yap et al., 2013), and it is often associated with self-efficacy (Zhao et al., 2010). Although the difference in the mean between both genders is statistically significant, the values are not high. However, the importance of perceived control is desirable, as it corresponds to a self-assessment of your knowledge and skills regarding the creation of an entrepreneurial activity (Fragoso et al., 2020). Hence, as acknowledge by several authors, the existence of educational programs linked to entrepreneurship increases self-efficacy and reinforces the intention to become an entrepreneur (Fragoso et al., 2020).

The results of female students demonstrated that the more positive the salient beliefs regarding behavior and the personal assessment of its consequences, the higher their ability to resist an adverse situation, which would also affect their entrepreneurial intention. The same occurred with psychological well-being. This may mean that reaching a state of equilibrium affected by challenging and rewarding life events allows them to define more clearly a path toward entrepreneurship. This is a remarkable finding—most studies present a much stronger relationship between attitude and intention toward males (Díaz-García and Jiménez-Moreno, 2010; Paço et al., 2015; and many others). In line with our results is the study by Trzcinski and Holst (2012), who stated that well-being was stronger in male than in female, regarding their work. Thus, males' perceptions of their ability to perform a given behavior allied to a state of balance makes men more ability to start an entrepreneurial activity.

Resilience is cited as an essential and decisive factor for the entrepreneurs' success and their company (e.g., Hedner et al., 2011). However, there are few studies that have included this construct in the analysis of the entrepreneurial process (Fisher et al., 2016). These results indicate that psychological resilience mediates the relationship between PBC and entrepreneurial intention, and ATE and entrepreneurial intention in women. The perceived ability to face challenges and overcome obstacles, resulting from an entrepreneurial process, allows them to be more persevering. That is, the dynamics of resilience can assist this process, facilitating an adequate interpretation of adversities and the development of coping skills (Jing et al., 2016; González-López et al., 2019; Santoro et al., 2020). Positive attitudes toward risk due to certain behavior as part of the successful entrepreneurial activity process are associated with the resilience of entrepreneurs, complementing other formal professional capabilities (González-López et al., 2019). A study conducted in Portugal with a sample of university students reveals that they know and adopt coping strategies in the face of stressful events, namely, those concerning "Acceptance of Responsibility" and "Planned Resolution of the Problem" (Silva et al., 2020). It is also important to note that individuals' perceptions with regard to the presence or the absence of the necessary resources and opportunities to develop the conduct that influences their ability to overcome any obstacle that may arise. The Portuguese economic crisis broke out in 2008 and persisted until 2013, which triggered a period of rising unemployment. Several studies prove that entrepreneurship is fundamental for socioeconomic development, taking the economy forward. Although unemployment seems to be a negative factor, in Portugal there is a program that allows the beneficiaries of the unemployment benefit to receive the total amount to which they are entitled to start their own business (Instituto do Emprego e Formação Profissional, 2019). For example, between January 2010 and July 2019, projects for 21630 beneficiaries were approved, creating more than 20500 new businesses and consequent jobs (Instituto do Emprego e Formação Profissional, 2019).

Theoretical Contributions

Generally, our study contributes to the literature on entrepreneurship, in particular because it creates causal relationships between two psychological variables and the entrepreneurial intention of Portuguese female and male students. Contrary to the most studies concluded, our findings revealed a greater propensity for women to initiate an entrepreneurial activity. According to the conclusions of the Mastercard Index of Women Entrepreneurs (2019), held in 58 countries in five regions of the globe, Portugal is the 10th country in the world with the best opportunities and support conditions for women to prosper as entrepreneurs. This report reveals that Portugal has a high rate of women business owners (30.2%), higher than Spain (29.9%), for example. In general, this high representation of women entrepreneurs appears to be correlated positively with high business leadership, higher education, and entrepreneurial supporting factors. Women face pressure better and are more resilient, able to adapt to new challenges, and more flexible than men.

This study also contributes to the understanding of how soft skills, such as resilience, influence the decision-making process to start an entrepreneurial activity and how it varies between the both genders. The inclusion of resilience in an entrepreneurial intention model provides a deeper understanding of this process and the variations between males and females and highlights possible factors to consider in the development of more comprehensive models (Krueger et al., 2000; Fayolle and Liñán, 2014). This study highlighted two issues: it is not the category of business students who have the greatest entrepreneurial intention, and it is not males who have the highest levels of intention. Few studies have been done on the relationship between resilience and entrepreneurial intention in relation to university students. Thus, we believe that, on the one hand, studies on intention should cover all areas of study and, on the other, the introduction of resilience training (González-López et al., 2019) and the importance of psychological well-being to education programs for entrepreneurship.

Practical Implications

The study reveals that Portuguese university students face entrepreneurship as a possible path to the job market, particularly in the female students. The finding reinforces also the importance of the role of higher education institutions, and other public or private institutions, in improving entrepreneurship. In this way, these findings can be useful for policymakers and institutions responsible for creating entrepreneurship training programs, as well as its inclusion in the curricular structures of the various learning cycles—from secondary education to higher education—in order to influence both the antecedents of the planned behavior model and entrepreneurial skills. The design thinking method reinforces self-confidence, allowing the individual to learn to deal with subjective threats, which also improves the development of self-efficacy (González-López et al., 2019). The importance of emotional aspects can be understood through personal testimonies and seminars aimed at planning entrepreneurial careers.

Also, an important measure is to monitor these programs, in a longitudinal way, in order to guarantee a real evaluation of the results. It is essential to strengthen the viability of the future entrepreneur ideas together with stakeholders and sponsors, in order to expose students to the idea that entrepreneurship is a viable path for self-employment. Fortunately, in Portugal, the process of creating a company is gradually less bureaucratic, which shows that entrepreneurship is being supported by various entities in the country, namely, with programs aimed at women and young people.

The female presence in management has also grown in most sectors. Moreover, it is in small businesses that the percentage of management positions held by women is highest, with 30.9%—in many cases the result of their own entrepreneurial initiative. Hence, the institutions have the responsibility to combat the misinformation that exists in the female population regarding entrepreneurship and the creation of a business, ending the female stigma in the business world.

The presence of initiatives like Web Summit, in Portugal since 2016, brought a number of obvious benefits, such as conferences with world leaders, the presence of investors, the public exposure of innovative technologies, and the consolidation of many national entrepreneurs and startups. This set of factors contributes to the dynamism, training, and visibility of the Portuguese entrepreneurial ecosystem. The fact that Portugal welcomes this type of initiative allows to explore the virtual side of the spirit of entrepreneurship and innovation in the country.

Universities are seen as points of reference in the reconstruction of the conception of science, as well as promoters of innovation in the economic development of nations. The triple-helix thesis (Etzkowitz and Leydesdorff, 2000) analyzes the relations between the University, Industry, and the State. This theory highlights that the University can (and should) play an increasingly important role in innovation in the context of knowledge-based societies. Thus, the concept of academic entrepreneurship rose, resulting from research carried out at universities, and it presents itself as their third mission. In Portugal, incentives have been created to encourage the use of Intellectual Property rights, to ensure legal protection for products and/or technologies, namely, the creation of 22 offices, 10 of them being based in universities. For example, the University of Porto created a Portal with the objective to support the innovation value chain, promoting the transfer of knowledge and strengthening the University's connection to companies, also through the incubation or financing of startups or business ideas. Since 2007, it has supported more than 550 business projects, welcomed 186 business ideas, and registered 73 graduated companies, that is, startups that were born in its facilities, developed, and made its leap into the world. We consider that the perception of supporting programs inside and outside the University leads students to believe that entrepreneurship is a possible path in the professional career option, without disregarding their idiosyncrasies.

Limitations and Suggestions for Future Research

The current study presents certain limitations that could be addressed in future studies in this field. Our study used variables that allow us to evaluate, in part, the perception of male and female students regarding entrepreneurship in the Portuguese context. Despite knowing that the research brought promising results in this field of study, we conclude that it is important to introduce other variables and theories that indicate a more reliable entrepreneurial profile. Thus, it is necessary to study a more complete model that can extend the evaluation of characteristics such as creativity and innovation, in parallel with, for example, the Theory of Basic Needs and the Theory of Self-Determination. Studying this, it is possible to understand why people are naturally curious and intrinsically motivated to perform an activity, and not through extrinsic motivators, such as remuneration.

Regarding the sample, we identified one that is not gender-equitable, which can skew the results. In future studies, it is important to consider a sample where the both genders are represented equally. Another issue is related to the university context, considering that we only evaluated Portuguese students. In order to better assess and contrast the intention of the university population, it is important to include other countries to understand whether cultural and context differences influence entrepreneurial intent or not. The study considered a sample of students from different academic years. Given that the characteristics and skills of entrepreneurs tend to fluctuate over time, a longitudinal survey could be carried out in order to consider whether the continued exposure to knowledge and to programs effectively leads students to create their own business.

Vamvaka et al. (2020) found that the construct of perceived behavioral control is better described by a two-factor solution, with the one representing perceived controllability and the other perceived self-efficacy. Thus, in future studies it is important to evaluate these two variables, in order to obtain more reliable results.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

CM contributed to writing, sampling, statistics, and discussion. BH-S contributed to writing and discussion. JS-G carried out the statistics and discussion. GC discussed the article. All authors contributed equally to the preparation of this article and approved the final version submitted.

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SYSTEMATIC REVIEW
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A Scientometric Systematic Review of Entrepreneurial Wellbeing Knowledge Production

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This article presents a scientometric study regarding entrepreneurship and its relationship with wellbeing. The study presents a systematic review and measures impact and relational character to identify the relevance of countries, research organizations, and authors in the field of entrepreneurial wellbeing. The study poses the following research questions: What is the nature of the evolution of scientific knowledge in the entrepreneurial wellbeing field? What is the nature of the concentration in terms of geographical distribution and co-authorship level of knowledge production in the entrepreneurial wellbeing field? What are the knowledge trends in knowledge production for entrepreneurial wellbeing literature? The contribution of this research is two-fold. First, in terms of methodology, it contributes study into the use of a more robust approach to search for the scientometric trends about entrepreneurship wellbeing in addition to the PRISMA review tools and the PICOS eligibility criteria. Secondly, the study presents research updates in the search for results for the last 2 years of knowledge production. This upgrade is particularly important in a research field that presents exponential growth, where 2019 and 2020 presented almost double the amount of knowledge production compared to 2017 and 2018.

Keywords: entrepreneurship, satisfaction, happiness, job-satisfaction, mental-health

INTRODUCTION

In a much-cited definition of entrepreneurship, Shane and Venkataraman define the entrepreneurship research field as the "scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated and exploited" (Shane and Venkataraman, 2000, p. 218). Such a definition of entrepreneurship opens up further possibilities to enlighten us on the subjective and psychological aspects of the entrepreneurship phenomenon. The entrepreneur takes risks, makes decisions, takes advantage of opportunities, and confronts uncertainty. The present study looks to deepen into the subjective and psychological aspects related to entrepreneurship in a growing field of research, that is, the study of wellbeing and entrepreneurship. A research study that investigates the relationship between offerings of recent literature and wellbeing and entrepreneurship could serve to clarify work-life interference aspects of those that embrace entrepreneurial activities.

Wellbeing is a relevant concept for those who produce arrangements to do with work and the economy. For example, The International Labor Organization (ILO) states that wellbeing at the workplace concerns all aspects of professional life. In this sense, the quality and safety of the physical climate, the socio-emotional climate, and work organization are of great importance (International Labor Organization, 2019). One of the cornerstones of professional life is entrepreneurship. Wellbeing at the workplace has been widely studied among employees but much less so in entrepreneurs. The focus on wellbeing has moved to the forefront of scholarly research on entrepreneurship (Shir et al., 2019). In consequence, entrepreneurial wellbeing rapidly becomes a form of access to research job and life satisfaction plus other socio-emotional professional life phenomena.

Following Sánchez-García et al. (2018), the present study's purpose is to organize the growing line of research that connects entrepreneurship and wellbeing, structuring a scientometric analysis of this novel stream of research. The present article contributes by focusing the inquiry on the use of the scientific activity itself and the application of scientometric techniques to measure the impact and relational character to make relevant the countries, research organizations, and authors in the field of entrepreneurial wellbeing. To update some of the results of Sánchez-García et al., this article aims to produce a grounded answer on the subjects of the concentration, actual trends, and nature of the evolution of scientific knowledge of entrepreneurial wellbeing. Following this line of inquiry, the study positions the following research questions, according to the PICOS tool (Methley et al., 2014):

- What is the nature of the evolution of scientific knowledge in the entrepreneurial wellbeing field?
- What is the nature of the concentration in terms of geographical distribution and co-authorship level of knowledge production in the entrepreneurial wellbeing field?
- What are the knowledge trends in knowledge production for entrepreneurial wellbeing literature?

To answer those research questions, authors use a scientometric analytic methodology. According to Kullenberg and Kasperowski (2016), scientometrics meta-analysis examines the production of knowledge, its spatiality, and the relationship between the network of global actors (Moravcsik, 1985; Frenken et al., 2009; Albort-Morant et al., 2017; Vega-Muñoz and Salinas-Galindo, 2017; Mikhaylov et al., 2020). This study focuses on establishing levels of spatial, organizational, and thematic co-authorship using VOSviewer for entrepreneurial wellbeing knowledge production (Van Eck and Waltman, 2010; Köseoglu et al., 2018; Lojo et al., 2019; González-Serrano et al., 2020; Vega-Muñoz et al., 2020). Scientometrics is a study methodology within entrepreneurship studies and has been used previously by Shane and Venkataraman (2000). Busenitz et al. (2003), Cornelius et al. (2006), Qian (2014), Chandra (2018), Sassmannshausen and Volkmann (2018), Duran-Sanchez et al. (2019), Ferreira et al. (2019), and Kang et al. (2019).

This scientometric systematic review contributes to entrepreneurial wellbeing understanding using a dataset built from a JCR-WoS journal collection, as JCR-WoS journals have been defined as the collection with the most significant impact worldwide (Carabantes-Alarcón and Alou-Cervera, 2019; Serrano et al., 2019). Such selection leads to an answer about the concentration, actual trends, and nature of the evolution of scientific knowledge of entrepreneurial wellbeing.

The paper proceeds as follows. First, the study offers a background on entrepreneurship and wellbeing. This background intends to offer a short literature review that brings context to the scientometrics analysis of the field. Later, the article presents the scientometrics methodology and then shows results; later, a discussion for entrepreneurial wellbeing looks at a Scientometric Systematic Review and also discusses the concluding remarks and limitations of this study.

RESEARCH BACKGROUND

Since the classification of Cornelius et al. (2006), entrepreneurship studies have been concentrated on three lines of research: business management, business history, and economic policy. This article is a systematic review of a business management line but also has a focus on individuals, particularly studying the individual entrepreneur and their behavior, mental processes, satisfaction, mental health, and stress among other personal issues. That is why, in this section, the article elaborates on an updated review of the literature that intends to contextualize the scientometric analysis of wellbeing and entrepreneurship. Firstly, the authors develop the concept of job satisfaction and wellbeing. Later, the text offers an actual view of the relationship between entrepreneurship and self-efficacy. Afterward, the study presents relations between entrepreneurship and health. Then, the text developed de relationship between entrepreneurship and happiness. Finally, the authors set up a revision of literature about entrepreneurship and life satisfaction. But first, this study confronts the more general inquiry about the relationship between wellbeing and then wellbeing and entrepreneurship.

As Wiklund et al. (2019) explain in their review about wellbeing and entrepreneurship literature, it is not easy to define and measure wellbeing. Wellbeing measures and studies can lead to a better understanding of people's quality of life (Stiglitz et al., 2009). The need to understand more about individuals' quality of life had triggered the development of a variety of measurement instruments. For example, Linton et al. (2016) describe 99 different measures for estimating wellbeing. These authors visualize that measures of wellbeing present a significant range that goes from subjective and psychological measures through to objective physical health measurements.

Wellbeing is a broad construct that is both complex and multidimensional (Shir et al., 2019). Wellbeing is a function of subjective and objective influences in people's life experience (Wiklund et al., 2019). Theoretically and empirically, wellbeing offers a variety of avenues regarding their emphasis on external and internal individual conditions.

Those differences depend on the outside assessment of external and internal conditions by those that interact with us. Furthermore, differences in the wellbeing conditions also depend on internal evaluation by any person, the objectivity of measurements that researchers construct, and subjective evaluations within the instrument respondents (Shir et al., 2019). More precisely, psychology researchers define wellbeing in terms of subjective wellbeing (SWB), that is, the overall internal state of mental wellness, which does or does not includes pleasure accomplishment and pain avoidance. Subjective wellbeing is what some researchers call hedonic or desire-based wellbeing (Gurin et al., 1960; Bradburn, 1969; Diener, 1984; Diener et al., 1999; Kahneman et al., 1999). On the other hand, other psychologists stress intensity, purpose, and self-realization wellbeing aspects. Such self-realization is known as eudaimonic wellbeing (Ryff, 1989; Deci et al., 2001; Keyes, 2006; Diener et al., 2010).

An important aspect to consider about the theoretical construct of wellbeing is the predictive role, emphasizing the importance of the contextual, intrapersonal, and dynamic contribution of intrapersonal and contextual factors (Diener, 2000; Damsbo et al., 2019; Santini et al., 2020). From the contextual perspective, there is the major influence of external life circumstances like material conditions; life events; and sociopolitical contexts on the subjective experience of individuals (Galinha and Pais-Ribeiro, 2011). According to this perspective, adverse circumstances affect WB (Feist et al., 1995). In the case of intrapersonal factors, results indicated that intrapersonal variables are stronger determinants of SWB than contextual factors (Diener and Ryan, 2009; Leite et al., 2019). This perspective received empirical support, placing personality and positive predisposition as the main predictors of WB and SWB (Lucas, 2008; Zhang et al., 2019). The integrative perspective defends how WB and SWB are influenced by multiple variables, like the individual's emotional state, past events, expectations of the future, and social comparisons, like in a dynamic interaction (Suh et al., 1998; Schwarz and Strack, 1999). In this perspective, the main objectives of studies consist of understanding the psychological processes inherent to the different measures of WB and SWB (Diener and Biswas-Diener, 2000; Galinha and Pais-Ribeiro, 2011).

Researchers have seen entrepreneurship as a process phenomenon where actors enmesh goals, desires, and hopes with their actions in the world. Consequently, entrepreneurship may facilitate the fulfillment of a person's fundamental psychological requirements and, at the same time, be a critical aspect that affects psychological wellbeing (Williams and Shepherd, 2016; Shepherd and Patzelt, 2017; Shir et al., 2019). Wiklund et al. (2019, p. 582) define entrepreneurial wellbeing as "the experience of satisfaction, positive affect, infrequent negative affect, and psychological functioning in relation to developing, starting, growing, and running an entrepreneurial venture." This interesting relationship between entrepreneurship and wellbeing will be further expanded upon in the next subsections where we elaborate on several aspects of entrepreneurship and wellbeing.

Entrepreneurship and Job Satisfaction

Jensen et al. (2017) claim that entrepreneurs' activities may bring economic and non-economic benefits. Authors express that wellbeing could be of high importance to those non-economic gains. For a Chinese sample of 33,519 entrepreneurs, Jensen and his colleagues demonstrated that innovation activities related to entrepreneurship may have a positive effect on an individual's job satisfaction, the balance between work and family, and general life comfort. Furthermore, several recent studies indicate a greater interest in the psychological results of entrepreneurial efforts, such as psychological wellbeing (Uy et al., 2013; Houshmand et al., 2017; Hahn, 2019), quality of life (Tobias et al., 2013; Reuschke, 2019), job satisfaction (Millán et al., 2013; Soboleva, 2019), and business satisfaction (Carree and Verheul, 2012). Examining such psychological outcomes and their antecedents is important because life satisfaction is associated with many outcomes in people's lives, including health, personal income, longevity, citizenship, and social relationships (Diener et al., 2015). Studies have also revealed positive effects of individual happiness and job satisfaction on various aspects of individual job performance (Cropanzano and Wright, 2001), work unit performance (Harter et al., 2003), and business performance (Van De Voorde et al., 2012; Wood et al., 2012). These findings intensify the economic interest of policymakers around the world to explore the history of business life satisfaction as a potential engine of economic growth; besides Naudé et al. (2013), we found that opportunity-motivated entrepreneurship may contribute to a nation's happiness but only to a certain point, at which the effects of happiness begin to decline. Moreover, our results suggest that a nation's happiness affects early-stage opportunity-driven entrepreneurial activity.

Academic literature demonstrates that self-employed persons enjoy greater autonomy than non-self-employed individuals (Lange, 2012). Furthermore, those self-employment persons experience a higher level of job involvement and job satisfaction than those employed in organizations.

Nevertheless, self-employment persons also feel higher levels of work–family conflict and lower family satisfaction (Parasuraman and Simmers, 2001). In consequence, there is a tradeoff between job and family satisfaction, and this fact can negatively impact the level of entrepreneurs' wellbeing.

Entrepreneurship and Self-Efficacy

Researchers in entrepreneurial studies are increasingly interested in the psychological wellbeing of entrepreneurs (Ryff, 2018; Wach et al., 2020). One of these psychological wellbeing studies about entrepreneurship had its origins in Bandura (1977). Bandura defined self-efficacy as the belief in the ability to control and positively significantly affect life. Various studies indicate that having a high degree of self-efficacy has a significant impact on the positive and happy state of a person (see also Caprara et al., 2006). Zhao et al. (2020) indicated that entrepreneurial decision-making and entrepreneurial experience affect household happiness significantly. Family wellbeing is significantly increased if the family is entrepreneurial, and it will be higher if the family is actively entrepreneurial. Both entrepreneurial experience and entrepreneurial investment of time have a significantly positive effect on the probability of family wellbeing.

Self-efficacy in entrepreneurship is defined as the belief that an individual has the ability to fulfill the essential roles and associated tasks with the entrepreneurship processes. Those essential roles are, for example (Fordyce, 1988), identification and commercialization of new products and services (McGee et al., 2009). Furthermore, Marshall et al. (2020) claim that accessibility of resources leads to entrepreneurial wellbeing through an entrepreneurial self-efficacy mechanism.

Additionally, studies agree that entrepreneurs with higher self-efficacy are likely to develop strong business identities, which are critical to the successful growth of a new company (Brändle et al., 2018). Strong business identities allow for behaviors with indications of high self-efficacy where entrepreneurs can feel safe in their new businesses and, therefore, increases their prediction improvements probability (Stroe et al., 2018). Clearer goals and plans, along with greater confidence, lead to successfully executing plans. Those plans will result in a greater sense of happiness and satisfaction for entrepreneurs. Self-efficacy has also been considered an essential mediator in various aspects of wellbeing and desired attitudes in entrepreneurs and also in behaviors related to the leadership necessary to carry out entrepreneurial activities (Nielsen and Munir, 2009; Nielsen et al., 2009; Liu et al., 2010). For Dijkhuizen et al. (2018), the importance of entrepreneurs' wellbeing is that it is a key factor in long-term subjective financial and personal entrepreneurial success. The practical implication is that entrepreneurs should maintain and improve their own wellbeing to achieve positive long-term business outcomes.

Entrepreneurship and Health

There is some research on entrepreneurship that explores the topic of health, e.g., working on how a business career impacts psychology (Tetrick et al., 2000; see Kets De Vries, 1977) and physics (Boyd and Gumpert, 1983; Buttner, 1992). Further, some recent studies have shown researchers interest in continuing to investigate this phenomenon (Heikkilä et al., 2019; Kearney et al., 2019; Patel et al., 2020). Previous and actual results show that entrepreneurs experience lower overall physical and psychic morbidity. Between other symptoms, there is also lower blood tension and a lower predominance of hypertension. Entrepreneurs also show higher wellbeing and more favorable behavioral wellness signs (Stephan and Roesler, 2010). These authors claim that entrepreneurs experience significantly higher job control and demands compared to employees. Higher job control and demands suggest that entrepreneurs have so-called active jobs and, therefore, can benefit from positive health consequences.

Researchers explain these higher levels of health based on entrepreneur decision power. Indeed, entrepreneurs have a high degree of decision power since they own their company and control work organization and resources like time, money, and asset distribution at their workplace (Rau et al., 2008; Schreibauer et al., 2020). Consequently, research has found that entrepreneurs have higher work control, which leads to a higher level of autonomy and discretion at work, and, therefore, this leads to more opportunities for their skill utilization (Eden, 1975; Lewin-Epstein and Yuchtman-Yaar, 1991; Chay, 1993; Parslow et al., 2004; Stephan et al., 2005; Prottas and Thompson, 2006; Rau et al., 2008; Schreibauer et al., 2020). As a corollary, it is possible to expect that entrepreneurs experience better health compared to employees, as they generally report greater control of work than employees.

Entrepreneurship and Happiness

The pursuit of happiness and the achievement of wellbeing are two highly debatable concepts that are rife with meanings and nuances that lead to some complexities in the theorizing process, including some cases of overlapping characteristics (Lyubomirsky and Lepper, 1999; Riff and Singer, 2007; Boehm and Lyubomirsky, 2009; Zhao et al., 2020). The concept of happiness can be understood as an individual cognitive representation of the nature and experience of wellbeing (Bojanowska and Zalewska, 2015; Flores-Kanter et al., 2018; Usai et al., 2020). These conceptions can generally be described as the degree to which people emphasize hedonic or eudaimonic dimensions as important aspects for the experience of wellbeing (McMahan and Estes, 2011; Chang and Chen, 2020), bringing the concept closer to the subjective wellbeing of the individual than to your psychological wellbeing. In the literature, in addition to being related to subjective wellbeing (Diener et al., 2006; Hill and Buss, 2008), it is interpreted as emotional wellbeing, positive affect (Fordyce, 1988), and quality of life (Shin and Johnson, 1978; Diener, 2000; Ratzlaff et al., 2000), which suggests that the meanings of happiness may depend on the context and individual emotionality (Diener et al., 2006; Carlquist et al., 2016). These definitions indicate a close relationship between the constructs of happiness, subjective wellbeing, quality of life, and life satisfaction. The relationship between happiness, wellbeing, and work has been validated in numerous studies (Rodríguez-Muñoz and Sanz-Vergel, 2013; Pryce-Jones and Lindsay, 2014; Marques, 2017).

From this base, the relationship between happiness and entrepreneurs is more frequently concentrated on the empirical studies carried out in the comparison between the level of happiness of entrepreneurs and employees (Benz and Frey, 2008), in the comparison between the level of happiness of the different types of entrepreneurs (Arenius and Minniti, 2005; Carree and Verheul, 2012), in happiness and its relationship with creativity (Chang and Chen, 2020; Usai et al., 2020), between the gaps of aspirations and their result real in entrepreneurship (Stutzer, 2004; Schneck, 2014), and in negative emotions that can develop in a competitive environment (Hill and Buss, 2008). Another line that has also been developed is the one that sees the effect of government quality influence on entrepreneur happiness through influencing the institutional environment (Larsson and Thulin, 2018; Li et al., 2019). Entrepreneurs were found to have a significantly higher mean level of happiness than employees. In the workplace, individuals who experienced personal growth and were able to contribute their ideas tended to be happier, relative to others who perceived themselves to be "restricted" (Mahadea and Ramroop, 2015). The study of Mahadea and

Ramroop (2015) also found that, on average, happier people tended to be educated, married with children, and treated fairly at work. But having too many children produced reduced individual happiness,

On the other hand, other studies that seek to understand the entrepreneurial process and its relationship with happiness, such as those by Su et al. (2020), have found findings where entrepreneurs in the process of establishing a company can persist in an uncertain environment, acquiring positive emotions. That is to say, the motivation for the sustainability of entrepreneurship originates from both the emotion of happiness and satisfaction from the very act of undertaking the entrepreneurship process, and emotional return is a performance dimension parallel to economic profitability. This conclusion provides a new perspective to reveal the entrepreneurial motivation of entrepreneurs in highly ambiguous environments.

Entrepreneurship and Life Satisfaction

Work is an essential facet of human life that contributes a large component to wellbeing through job satisfaction (Wright and Cropanzano, 2000). Entrepreneurs obtain satisfaction from leading an independent lifestyle and "being their own" bosses (Bhuiyan and Ivlevs, 2018; Kibler et al., 2019; Zwan et al., 2020). In this vein, Hundley (2001) and Hahn (2019) find that self-employed people are more satisfied with their work, and this is mainly due to greater autonomy, greater flexibility, the potentiality of their skills, and, to a certain extent, their reliance on job security due to self-management.

Empirical work has shown that employees have lower job satisfaction in large companies compared to small companies (Idson, 1990; Benz and Frey, 2008). In this spirit, studies indicate that this job satisfaction level is closely related to the tasks assigned at work. Job satisfaction is related to work tasks themselves and the ability to use employees' initiative in their practice (Benz and Frey, 2008). However, Noorderhaven et al. (2004) observe that the levels of dissatisfaction with life in society are positively associated with self-employment rates. Nevertheless, job satisfaction is not the only variable that a researcher must study in order to determine an entrepreneur's wellbeing. Researchers need to consider numerous other components, for example, being affected factors that may be complex and those that interact with each other (Binder and Coad, 2012, 2013). Since individuals may be able to compensate for high performance in some domains of life with otherwise low achievements, high job satisfaction may be offset by less satisfaction in terms of the family specifically or social life more generally.

Given the various aspects mentioned, this study seeks to establish, through a systematic review of broad coverage, the set of relationships that in the mainstream literature have been indexed, and with impact calculated in the JCR-WoS, those that have been documented on the simultaneous study of the wellbeing and entrepreneurship, using a database established and analyzed through a scientometric meta-analysis.

METHODS

Study Design

Academic publications play an effective role in generating changes in the world of knowledge (Missen et al., 2020). In particular, Glänzel and Thijs (2004) and Franceschet and Costantini (2010) highlight the effect of co-authorship of an article as a reason to reveal the importance of a study, and this was observed as the achievement of more citations. More in detail, Glänzel and Thijs (2004) and Franceschet and Costantini (2010) note the article co-authorship as its central drive for its achievement of more citations.

Scientometrics as meta-analysis (Kullenberg and Kasperowski, 2016) focusses on knowledge production, the spatiality of knowledge production, and knowledge relationships between the network of global actors (Moravcsik, 1985; Frenken et al., 2009; Albort-Morant et al., 2017; Vega-Muñoz and Salinas-Galindo, 2017; Mikhaylov et al., 2020). Scientometrics relationally studies knowledge production, moving the author's gaze toward spatial and organizational co-authorship, as well as research field themes. In this text, the authors use the VOSviewer tool (Köseoglu et al., 2018; Lojo et al., 2019; González-Serrano et al., 2020; Vega-Muñoz et al., 2020) to perform a whole set of analysis of scientometric data about entrepreneurship wellbeing literature. Scientometrics allows us to strengthen systematic reviews (Porter et al., 2002), and it has been used recently in the field of Psychology (Caffò et al., 2020; Peng et al., 2020) and Business (Iandolo et al., 2019; Inkizhinov et al., 2021); its incorporation of sequential mixed use with PRISMA has also been addressed previously (Kazerani et al., 2017; Cavinatto et al., 2019; Sott et al., 2020).

Systematic Review Protocol

In this article, we carry out a scientometric review of the literature on entrepreneurial wellbeing, and it seeks to synthesize this scientific literature. We have used strict control mechanisms, such as the PRISMA method, in order to reduce biases to a minimum (Liberati et al., 2009; Urrútia and Bonfill, 2010) in the process of choosing and discarding articles. In addition, we have relied on a previous protocol of explicit criteria, uniformly applied to all articles, in order to narrow the topic and focus on the objectives set.

Search Strategy

To perform the analysis, the authors defined the next searching strategy: (TS=(entrepreneur* AND (wellbeing OR wellbeing))). Such we used the search terms "wellbeing" and "entrepreneur." For the first term, we searched it with and without a space between the two words (wellbeing and wellbeing), and we included the asterisk so that the search engine would find all its possible variations (for example entrepreneur, entrepreneurship, entrepreneurial, derived adjectives, and plural uses) (see **Table 1**). Eligibility criteria have been developed using the population, interventions, comparators, outcomes, and study

TABLE 1 | Phases of a scientometric systematic review.

Meta-analytical phases	Description
Initial	The search vector determination, articles selection according to the PRISMA method and the PICOS eligibility criteria, and data extraction existing in the WoS database.
Production	A global scientific production growth analysis on Entrepreneurship and Wellbeing in annual article numbers published in journals indexed to the JCR-WoS (SSCI-JCR and SCIE-JCR) and its fitness level in terms of exponential growth, according to Price's Law.
Spatiality	The economic geography analysis of scientific production in response to the question "Where is this knowledge produced?" The data extraction and determination of the countries where the authors' affiliation organizations are located and their global mapping follow.
Relational	Existing relationships based on text data are analyzed using the VOSviewer in various topics: • National co-authorship, where knowledge production analysis is Joint with the author's contribution being affiliated with various countries, visualization through graphs, concentration determination, and relationships at the national level. • Organizational co-authorship, where joint knowledge production analysis Joint with the authors' contribution, which is affiliated with various organizations, visualization through graphs, concentration determination, and relationships at an organizational level. • Related Keyword Plus® (KWP), which determinates a relevant KWP set (OKWP) according to Zipf's Law, including the analysis of their use in the article dataset studied, visualization through graphs, concentration determination, and relationships at a thematic level. • Intermediary organizations clusters, where the intersection analysis between the organizational co-authorship and the use that they are making of the OKWP include the following aspects: the organization's establishment, visualization through graphs, concentrations determination and relationships at an organizational level, and the organization's identification, which is created in the knowledge production structure base as a topic of study worldwide. • Key Terms, where we include establishment through text analysis with VOSviewer, from titles and abstracts articles under study, visualization through temporal graphs, temporal identification of the most widely used terms, and thematic trends identification. Its concentration is established by Zipf's law.

TABLE 2 | Eligibility criteria (PICOS).

PICOS	Description
Population	Entrepreneurs, self-employed, business students, CEOs, small business owners, organizationally employed, young workers, customers.
Interventions	Entrepreneurship, self-employment, entrepreneurial education, first job, receive funding to entrepreneurship, participate in an entrepreneurship support program. purchasing at entrepreneurs.
Comparator	Only at the data and metadata level of the articles: Nationality of authorship, Organizational affiliation of authorship, Keywords plus, Key Terms, Publication year. As concentrations discriminant criterion, Bradford's law on journals, and Zipf's law on keywords and key terms are applied.
Outcomes	Relationship (bidirectional) between entrepreneurship and SWB, with particular emphasis on job satisfaction, self-efficacy, health, happiness, and life satisfaction.
Study designs	All study types will be included: qualitative (interviews, focus groups, ethnography), quantitative (survey dataset, cohort studies, cross-sectional studies), and mixed methods studies.

designs (PICOS) (Methley et al., 2014), which is detailed in **Table 2**.

We understand that many investigations related to the traits and actions of entrepreneurs, such as "self-employment," "business owner," "independent worker," and "organizational employer." These words were included in our search; however, for purposes of maintaining quality in our study, we only considered peer-reviewed articles and those specifically associated with the concept "wellbeing," as seen in **Table 2**.

Data Sources and Data Extraction

We extracted the dataset for this study from SSCI-JCR and SCIE-JCR, which are the only databases of the main Web of Science collection for which the Impact Factor of the Journal Citation Report (JCR) is calculated (Biglu, 2008; Golubic et al., 2008; Navarrete-Cortés et al., 2010; Ruiz-Pérez and Jiménez-Contreras, 2019), restricting itself to only documents of the type articles (DT), independent of the language of the main text (LA), but using data and metadata in English. We excluded all indices without impact calculation: Arts & Humanities Citation Index (A & HCI), Conference Proceedings Citation Index- Science (CPCI-S), Conference Proceedings Citation Index-Social Science & Humanities (CPCI-SSH), Book Citation Index–Science (BKCI-S), Book Citation Index–Social Sciences & Humanities (BKCI-SSH), and Emerging Sources Citation Index (ESCI). The multiple indexing of journals generates for WoS an intersection with PubMed® declared as metadata in the PM field (see the in the **Supplementary Data Set** for this article); in addition to this, the journals indexed to both JCR bases have high duplicity with the indexed journals in Scopus, and both interaction percentages are reviewed and presented as a result. The Scopus journals, which do not present double or triple indexing with the SSCI and SCIE bases, have not been considered because "Scopus covers a superior number of journals but with lower impact and limited to recent articles" (Chadegani et al., 2013, p. 24). The dataset was downloaded from the website www.webofknowledge.com of Clarivate on November 13, 2020.

Data Analysis

The first analytical step is the recognition of a possible incremental evolution of scientific knowledge that justifies the research effort (Dobrov et al., 1979; Price, 1986; Garfield, 1987; Spinak, 1998; Escorsa and Maspons, 2001; Vega-Muñoz and Salinas-Galindo, 2017). The identification of incremental evolution is performed on research documented in the main collection of JCR-WoS journals. The main collection of JCR-WoS journals has been defined as the collection with the most significant impact worldwide (Gavel and Iselid, 2008, Carabantes-Alarcón and Alou-Cervera, 2019; Serrano et al., 2019).

Later, the authors evaluated several concentration elements. First, authors used Bradford's Law at the level of journals to measure the concentration adjustment levels of geometric series order (Bulik, 1978; Morse and Leimkuhler, 1979; Pontigo and Lancaster, 1986; Swokowski, 1988; Kumar, 2014; Shelton, 2020). Looking at the concentration adjustment levels of geometric series order; the authors intended to identify a potential concentration journal hub specialized in entrepreneurial wellbeing (Andrade-Valbuena et al., 2019; Marzi et al., 2020; Vega-Muñoz et al., 2020).

In a subsequent analytic step, the authors used Clarivate analytic Keyword Plus®–KWP. KWP represents metadata for articles in this study dataset. Then, the authors computed Zipf's Law (Zipf, 1932) using the square root of those KWP. That is [square_root (KWP) = n_1], where n_2 words are considered with a number of occurrences equal to or greater than the occurrences of n_1, with $n_2 >= n_1$.

Assessment of Risk of Bias

This research collected information on entrepreneurs' wellbeing from 331 SSCI+SCIE articles. Quality and academic relevance are the central attributes of publications indexed at the SSCI+SCIE database. Those articles are part of the selected JCR-WoS journals collection. Scholars had claimed that JCR-WoS journals became the collection with the most significant impact worldwide (Carabantes-Alarcón and Alou-Cervera, 2019; Serrano et al., 2019). Consequentially, the very selection of journals indexed in SSCI+SCIE with JCR impact led to increased reliability and control risk bias of the article sample.

To ensure additional quality control of the article selection, authors extracted the information following specific objectives, setting out any particular, or self-interest criteria that may have limited the research and results of this investigation. The authors sorted out discrepancies about any selection in this article with the inclusion of a third author who helped to triangulate any disagreement.

RESULTS

Figure 1 and **Table 3** present a flow diagram of the studies from SSCI+SCIE using the systematic procedure explained in the previous method section (Moher et al., 2009).

Study Selection and Characteristics

Synthesized Findings

Between 1995 and 2020, scientists published 331 articles in 222 journals indexed to the SSCI and SCIE at WoS-JCR databases on the topic of entrepreneurship and wellbeing. Journals whose multiple indexing coincides in 100% of cases with journals indexed in Scopus (331 articles) and in 36 cases with journals indexed to PubMed (44 articles, 13%). This number of articles means that scholars publish an average of 13 articles per year. Further, in 2019, a total of 61 works were published, which contrasts with only 1 in 1995. Based on this set, considered as the population of articles under study, the following analyzes were carried out for the samples that are detailed in **Table 4**.

Consequently, the present study highlights an exponential knowledge production growth process in this field of research. **Figure 2** presents the aforementioned world scientific production. Such a growth pattern leads us to identify the existence of a worldwide researcher critical mass on the subject. **Figure 2** details the current knowledge production of half-periods, represented in dark orange bars, from 2017 to date. This knowledge production curve presents an R^2 of 92% statistical adjustment.

Regarding Bradford's Law, there are no academic journals with a notoriously high concentration of articles. However, despite the lack of homogeneity of the entrepreneurship wellbeing field, it is possible to identify that the growth in knowledge production zones follows a geometric rate with a 0.7% error in the geometric series. This means the geometric series error is not significant (Kumar, 2014). Therefore, the result is statistically consistent. Consequently, the analysis highlights seven journals with participation equal to or >2% in the total world knowledge production: *Journal of Business Venturing* (16 articles, 5%), *Small Business Economics* (12 articles, 4%), *Journal of Business Ethics* (9 articles, 3%), *Sustainability* (7 articles, 2%), *Macromarketing Magazine* (6 articles, 2%), *Theory and Practice of Entrepreneurship* (5 articles, 2%), and *Journal of Happiness Studies* (5 articles, 2%). As a result, although there is no higher concentration in academic journals about entrepreneurship wellbeing research, some academic outlets are beginning to show a preliminary concentration pattern.

In terms of geographical concentration, the pattern is radically different. **Figure 3** represents the world distribution of scientific production in the subject under study, where the participation of 57 countries is identified. Standing out with the highest percentage contribution margins, out of the 331 articles analyzed, are the following: the US with 35%, the United Kingdom with 16%, Germany with 9%, Australia with 9%, and Canada with 7%.

Figure 4 complements the above by consistently connecting 50 countries through the VOSviewer software. The United States not only presents notorious supremacy in terms of the number of articles it contributes, but it also maintains a high number of direct relationships with 32 countries, thus accounting for its centrality within the group of countries covered in the graph. Additionally, the country-based analysis displays a higher concentration in terms of the country authorship connections.

This higher level of country-based concentration could better be understood by desegregating the co-authorship level. **Figure 5** provides more significant network organizational details. **Figure 5** shows that there are 141 consistently connected nodes out of 523 nodes (27.0%). Co-authorship analysis distinguishes 15 clusters that account for groups of reduced size. Those reduced size groups are indirectly linked. All in all, most of the institutions that serve as a bridge between two or

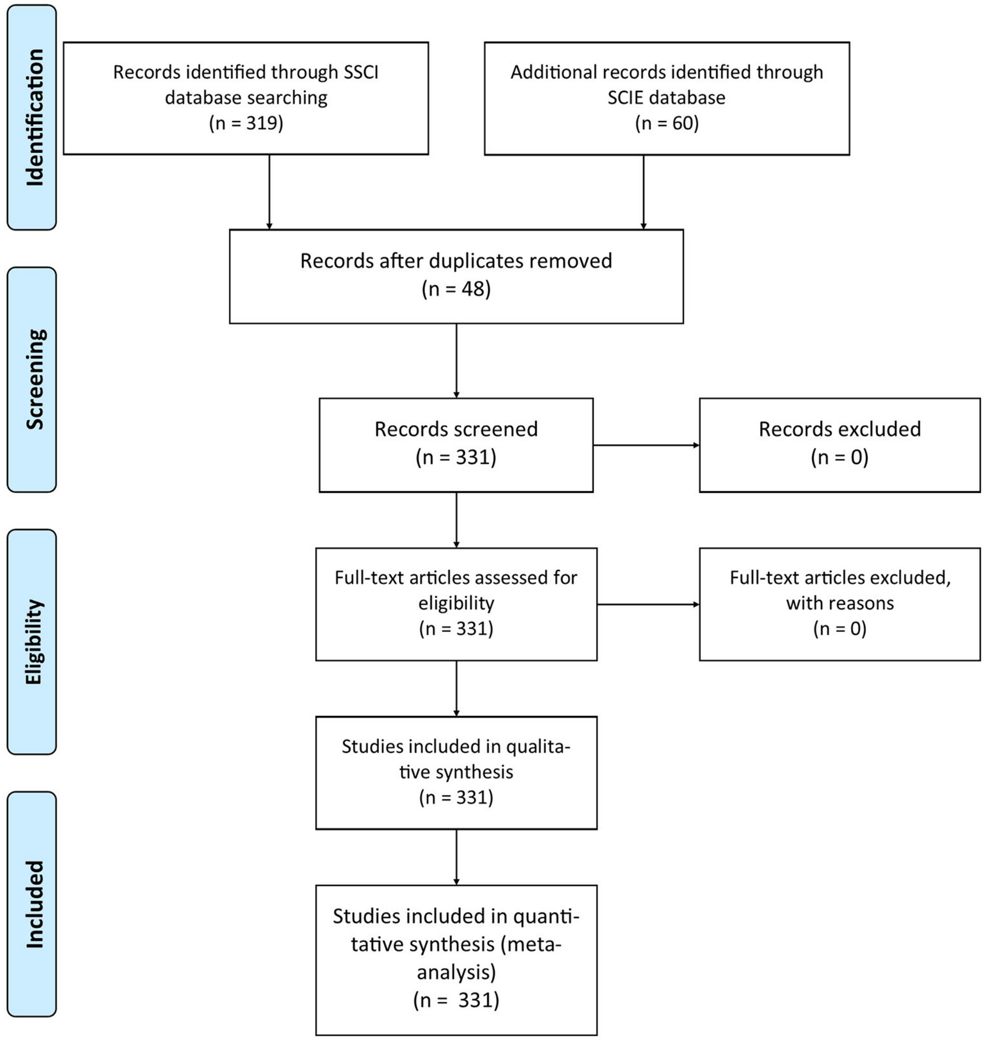

FIGURE 1 | PRISMA flow diagram.

more groups, for example, the University of Warwick, Baylor University, and, to a lesser extent, Stockholm University and the University of Groningen, and these enact a high power of intermediation.

Clarivate analytics established the so-called Keyword Plus® - KWP. KWP are 975 words that Clarivate presented as metadata for the 331 articles in this study dataset. Furthermore, using Zipf's Law, the authors found there were 36 relevant words. Zipf's Law was calculated using the square root of 975 KWP. In the final analysis, this analysis considered 36 KWP with an occurrence number equal to or >8, see **Figure 6** [and details in Appendix A (**Supplementary Material**)]. For a detailed analysis, see Appendix A in the **Supplementary Material**. This analysis tried represent thematic areas in detail using Outstanding Keyword Plus—OKWP. Fifteen clusters covered thematic areas of research institutions. Further, clusters presented coverage of the relevant topics with variations from 4 to 23. These inter-cluster variations are near related to its paper composition. Each cluster presents a range that goes from 2 to 15 articles.

The intersection between clusters of institutions and the OKWP lead to the identification of 86 articles that shape the structural network of knowledge about entrepreneurial wellbeing knowledge production. In the set mentioned above, a reduced number of 17 articles within 331 are of vital importance (see Appendix B in the **Supplementary Material**). Those articles contain the OKWPs among their metadata, and, additionally, make it possible to identify the intermediary institutions that make the connection between two or more clusters possible. Furthermore, **Figure 7** represents the co-authorship connections between researchers from 18 universities. Among these universities, the following stand out: the University of St. Gallen (Switzerland), Baylor University (Texas, US), Brock University (Ontario, Canada), and Luleå University of Technology (Sweden). Those higher education institutions stand out for their outstanding contribution to the subgroup social cohesion in the global epistemic community that addresses the bi-univocal effects between Wellbeing and Entrepreneurship (Burt, 1987, 2009; Knoke and Laumann, 2012). In particular, that

TABLE 3 | Flow diagram of the studies.

Stage in flow	SCIE	SSCI	Lost	Total articles	Languages	Included articles
Identification	59	318	0	331	English	320
Screening	59	318	0	331	German	1
Included	59	318	0	331	Norwegian	1
					Russian	6
					Spanish	2
					Swedish	1
					Total articles	331

TABLE 4 | Phases, stages, and samples in the scientometric systematic review.

Meta-analytical phases	Stages	Sample ($N = 331$)
Production	World scientific production growth	331 articles (census)
Spatiality	Economic geography analysis of scientific production	331 articles (census)
Relational	National co-authorship (NCA)	331 articles (census) = 50 NCA ➔ 32 NCA – connected
	Organizational co-authorship (OCA)	331 articles (census) = 523 OCA ➔ 141 OCA – connected = 15 OCA – cluster
	Keyword Plus® (KWP)	331 articles (census) = 975 KWP
	Outstanding Keyword Plus® (OKWP), reduction of KWP according Zipf's Law	36 KWP – Outstanding = 36 OKWP = 86 articles
	Intermediary organizations clusters (IOC), by clusters intersection	= 17 articles
	Key Terms (KT) in contemporaneous half-period, and reduction of terms according Zipf's Law	159 articles (2017–2020) = 4,950 terms = 70 KT

the research structure of the tension between entrepreneurship and wellbeing is articulated with the presence of Swiss, Swedish, and Canadian business schools, countries located among the 10 most sustainable states in the world (Andrejuk, 2019; Ziaja et al., 2019; The Fund for Peace, 2021), can set a trend for this study topic by approaching business from a perspective conditioned to another social context.

Finally, the authors have carried out an analysis of the corpus made up of the titles and abstracts of this study dataset. That is the last step to understanding the knowledge production in the field of entrepreneurial wellbeing. To perform the analysis, the authors used the VOSviewer tool with 159 articles out of 331 found in the contemporary semi-period 2017–2020 of publications. The analysis mentioned above yielded a total of 4,950 terms. By applying Zipf's Law [square_root (4,950) = 70], we reduced these 4,950 terms to 70 key terms. **Figure 8** coincides with an occurrence or repetition of each concept >15 times in the corpus (see Appendix C in the **Supplementary Material**).

The corpus analysis shows that there are some strictly methodological concepts [e.g., analysis (69), article (43), case (24), context (57), data (41), effect (81), study (227)] being used. Further textual analysis offers some moderating variables terms [e.g., gender (16)] and effects in economic-business terms [e.g., development (71), business (68), strategy (46), economic growth (16), self-employment (36), and social enterprise (35)]. Finally, the use of textual analysis tools revealed psychosocial effect terms in the article database [e.g., wellbeing (58), autonomy (25), community (54), individual (30), family (22), prosocial motivation (18), and stress (25)]. Plus, it is relevant to point out several mentions specific to China (17), that is, the only country that stands out within the metadata set. All in all, from the whole group of terms that the corpus offers, the graph (see **Figure 8**) only recognizes the term strategy—between the economic-business terms and self-employment and motivation prosocial—as a current psychosocial trend. Regarding these trend terms and the documents that used them, through the analysis of 159 articles, we found a longitudinal study in the UK that relates household self-employment and gender, finding that women appreciate more labor flexibility, being able to combine self-employment with the family in a better way than men (Reuschke, 2019). Furthermore, there is another study that relates to self-employed from China, Russia, and Ukraine. This

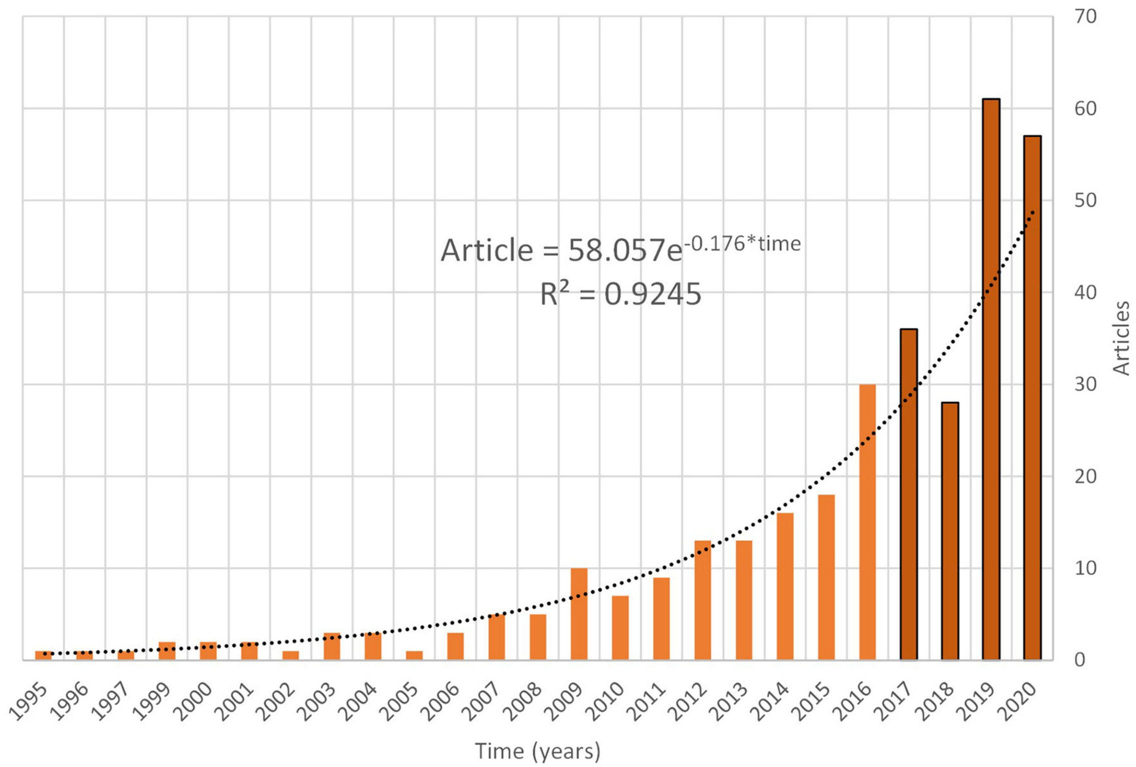

FIGURE 2 | World scientific production growth.

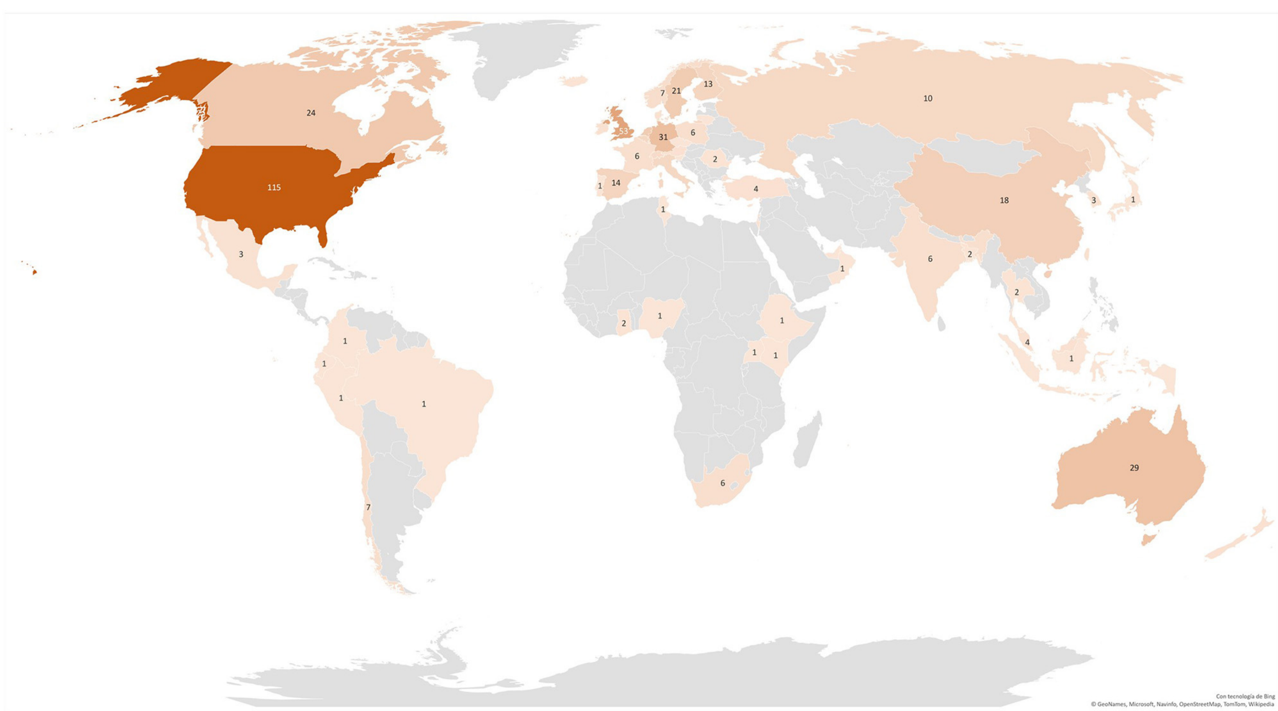

FIGURE 3 | Economic geography of scientific production.

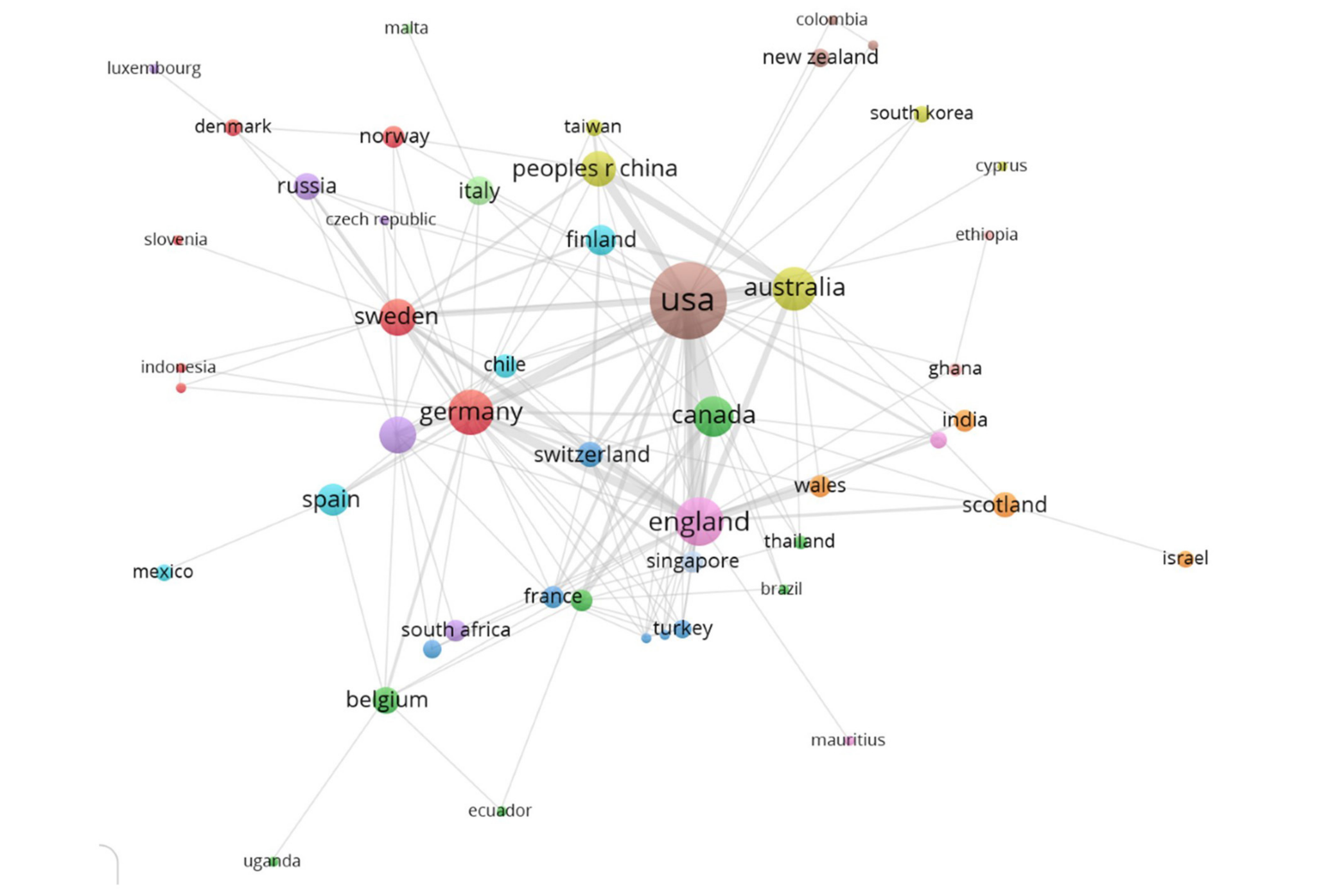

FIGURE 4 | National co-authorship.

second study finds that women from Ukraine and Russia have lower rates of self-employment than men, highlighting their propensity for salaried work, while in China, labor rates are much lower both in self-employment and in jobs (Pham et al., 2018).

DISCUSSION AND CONCLUSIONS

Entrepreneurship is a fast-growing global phenomenon (Bosma, 2013). This study demonstrates that, in recent years, there has been an exponential growth in the interest of studying entrepreneurs from a psychosocial-eudaimonic approach. Established in the literature, entrepreneurship is a process phenomenon where actors enmesh goals, desires, and hopes with their real-life action. Consequently, entrepreneurship may facilitate the fulfillment of a person's fundamental psychological needs, and it is a critical aspect that affects, for good or for bad, psychological wellbeing (Williams and Shepherd, 2016; Shepherd and Patzelt, 2017; Shir et al., 2019). Following Wiklund et al. (2019) "the experience of satisfaction, positive affect, infrequent negative affect, and psychological functioning in relation to developing, starting, growing, and running an entrepreneurial venture" definition of entrepreneurial wellbeing; this systematic review has delved deeper into the interesting relationship between entrepreneurship and wellbeing.

To track the relationship between entrepreneurship and wellbeing, the study offers a contextual review that leads toward a grounded scientometric systematic analysis of wellbeing and entrepreneurship. Wellbeing and entrepreneurship literature needs to be open to critique and dispute. With a strong scientometric and systematic review of many well-selected articles, the present study contributes to improving the understanding of the link between entrepreneurship and wellbeing knowledge production in terms of job satisfaction and wellbeing, entrepreneurship and self-efficacy, entrepreneurship and health, and entrepreneurship and life satisfaction.

Compared to the results of Sánchez-García et al. (2018), this research offers an upgrade, not just in terms of the recent literature development and discussions but also, and maybe more importantly, in terms of database and search criteria. Therefore, the contribution of this research is two-fold. First, in terms of methodology, the use of a more robust approach

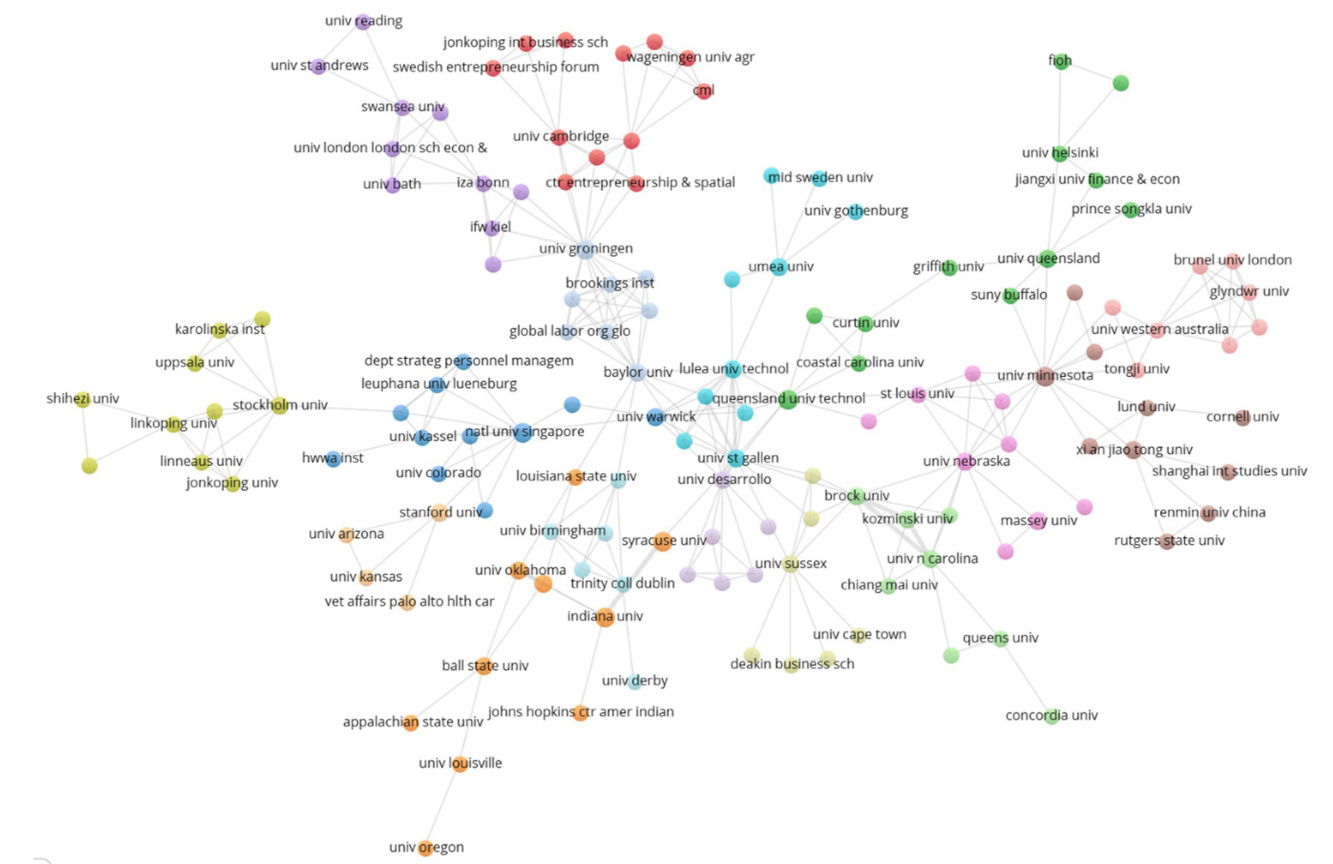

FIGURE 5 | Organizational co-authorship.

to search for the scientometric trends about entrepreneurship wellbeing. Secondly, the present research updates the search for results for the last 2 years of knowledge production, incorporating the inclination to entrepreneurship as a source of hierarchical autonomy and the incorporation of prosocial behaviors (Marín, 2010). This upgrade is particularly important in a research field that presents exponential growth, where 2019 and 2020 present almost double the knowledge production of 2017 and 2018. All in all, with a more grounded search strategy and the update of the scientometric results, this article intended to answer the following research questions: What is the nature of the evolution of scientific knowledge in the entrepreneurial wellbeing field? What is the nature of the concentration in terms of geographical distribution and co-authorship level of knowledge production in the entrepreneurial wellbeing field? What are the knowledge trends in knowledge production for the entrepreneurial wellbeing literature?

In terms of the following question, "What is the nature of the evolution of scientific knowledge in the entrepreneurial wellbeing field?", results of this study demonstrated that the field of entrepreneurship wellbeing presents an exponential knowledge production growth process. The 331 articles indexed at WoS-JCR on the topic of entrepreneurship and wellbeing that are part of this study database are still not concentrated in any academic journal. However, they are highly concentrated in the US, United Kingdom, and Germany.

The higher level of concentration in terms of geographical zones (**Figure 4**) correlates with the results about the question on the co-authorship level of knowledge production in the entrepreneurial wellbeing field. Co-authorship analysis leads to finding 15 clusters that account for groups of reduced size (**Figure 5**). In these networks of co-authorships, there are institutions that concentrate a high power based on their intermediation between institutional networks. In a research field that presents an exponential knowledge production growth process, intermediation offers the opportunity to position the institution getting the opportunities of structural holes (Burt, 2004) in this novel field. Furthermore, those actors that intermediate in the co-authorship networks, as is the case for the University of St. Gallen (Switzerland) and Baylor University (Texas, US), stand out for their outstanding contribution to the social cohesion in the global

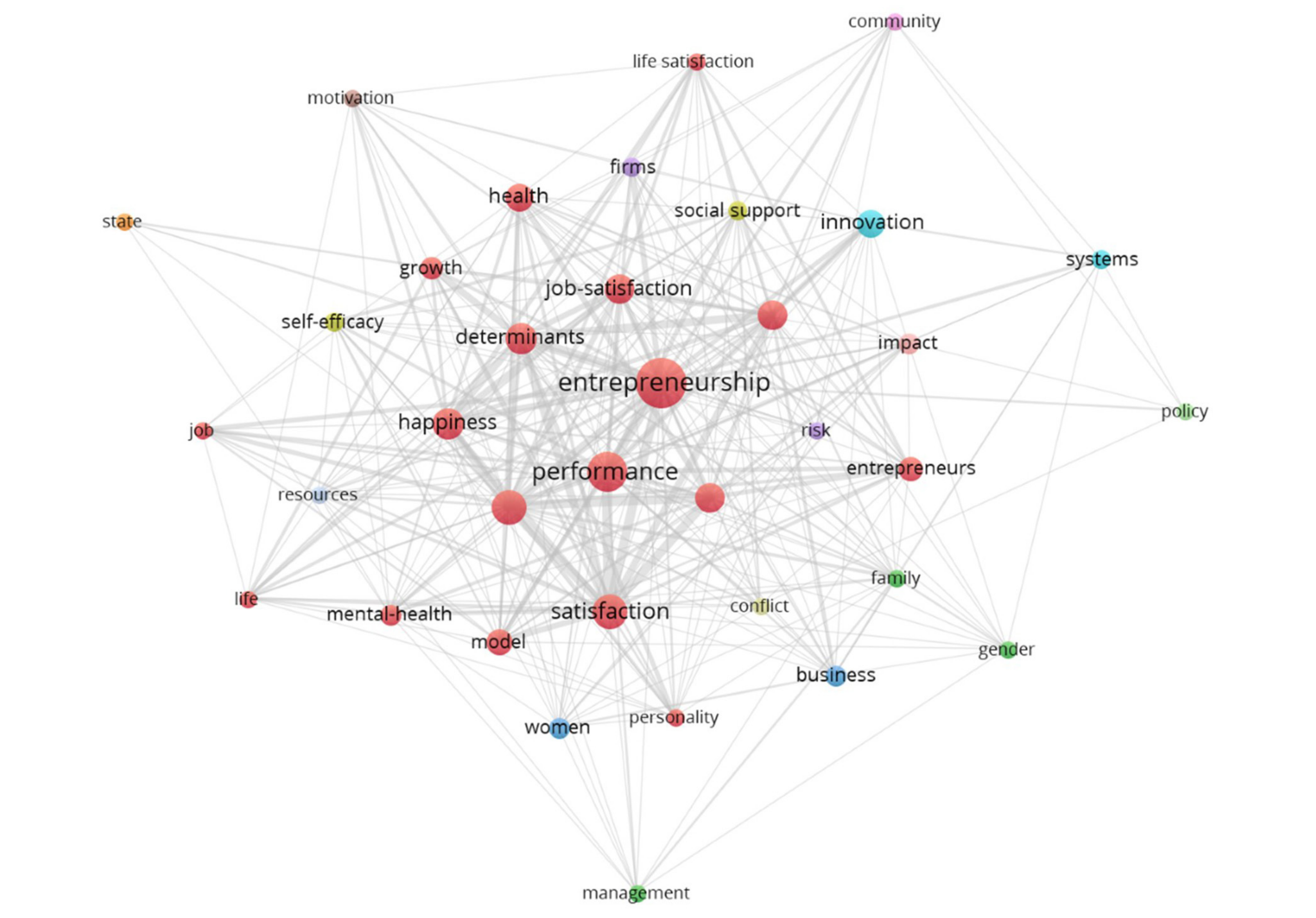

FIGURE 6 | Outstanding Key Word Plus-KWP.

knowledge production community researching wellbeing and entrepreneurship.

Regarding the trends about knowledge production in the entrepreneurial wellbeing literature, the research presents a topics series intricately connected to the background literature offered in this article. The background literature review offers topics such as entrepreneurship and its relationships with life satisfaction, health, self-efficacy, happiness, and job satisfaction. These topics are highly correlated with the scientometric results of the present study. Entrepreneurship wellbeing, i.e., the feeling of satisfaction related to creating, opening, expanding, and managing an entrepreneurial endeavor, is a research field that presents a thematic continuity since 1995. Those themes, which are represented by the Keyword Plus® at the database, are at the core of the knowledge production trends of this epistemic community. However, it is only by studying the intersection between institutions and keyword plus clusters that the structural pattern appears. In fact, we analyzed the keyword plus network, from Clarivate, and clusters based on the 331-article database of this study, and **Figure 7** shows that happiness, satisfaction, job satisfaction, and health are highly displayed in the network of institutions and keywords. These structural aspects of the research field show new avenues about entrepreneurship wellbeing presented by Sánchez-García et al. (2018).

As a conclusion, this research invites scholars in entrepreneurship and wellbeing to continue their exploration on topics such as public policies that promote the wellbeing of entrepreneurial activity; studies of the effects of wellbeing in the generation of wealth; promotion models based on wellbeing-based ventures; ecosystems of wellness ventures; and productive development and entrepreneurship of local and community wellbeing. Those themes are less represented within the corpus of the systematically analyzed literature and could offer a tremendous opportunity to those scholars that are researching the effects of entrepreneurship work, and it is affected by feelings of happiness, satisfaction, job-satisfaction, and health.

In terms of implications to practitioners and to business more broadly, the present article leads the inquiry toward deeper subjective wellbeing and its relationship with the entrepreneurship practice and psycho-social context that impacts labor market relationships (Sridharan et al., 2014; Liang and Goetz, 2016; Bernhard-Oettel et al., 2019; Burke and Cowling,

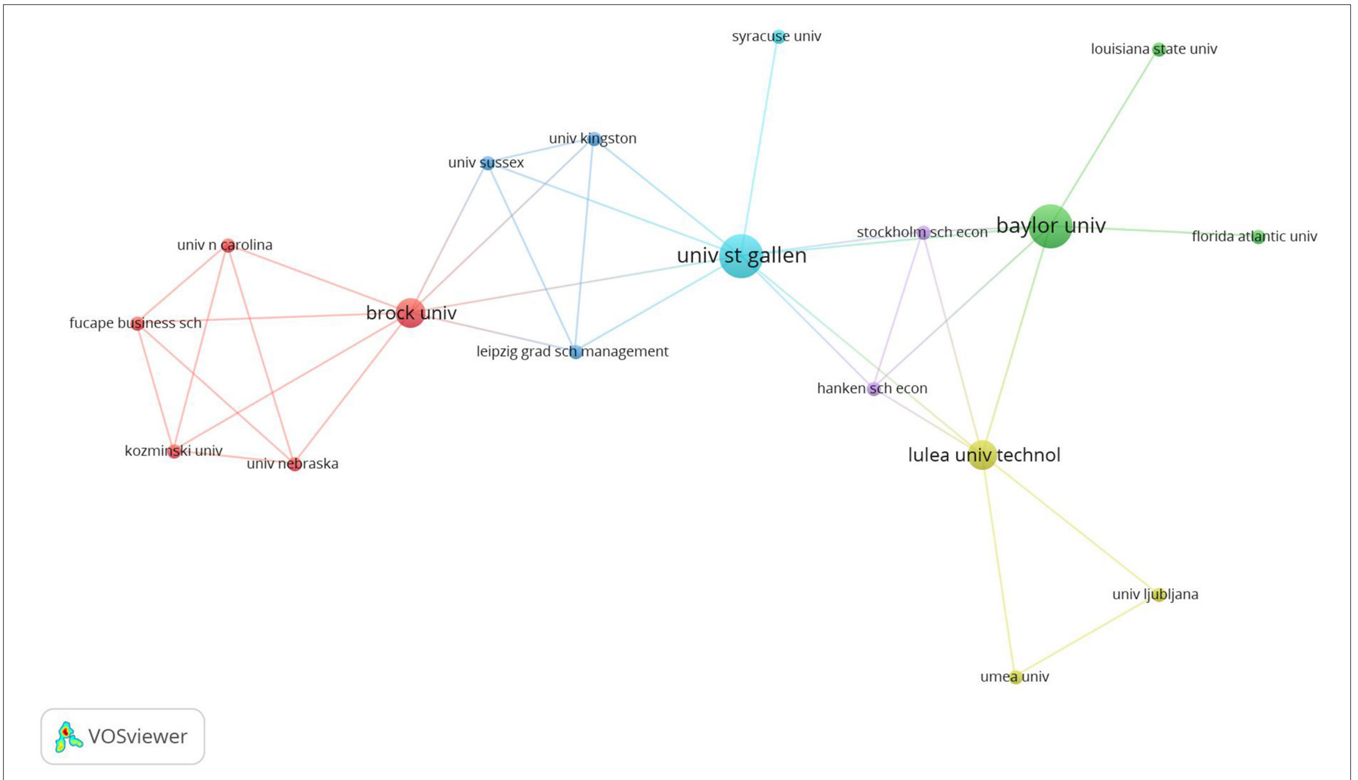

FIGURE 7 | Intermediary organizations clusters.

2020; Gevaert et al., 2020). This study also invites them to focus on the adoption of a new lens to business creation that is based on the business thinking of latitudes with much greater social stability (Welsh et al., 2016; Kibler et al., 2019; Shir et al., 2019). Decision-makers at the government and corporation levels must be aware of new insights that appear in this stream of literature, which deepens our understanding of these issues (Hmieleski and Sheppard, 2019; Nordenmark et al., 2019; Giraldo et al., 2020; Holm et al., 2020; Kluczewska, 2020; Xu et al., 2020). This is of particular importance in pandemic times where the people's mental health and wellbeing are being called for each corporate and business operation (Carnevale and Hatak, 2020).

LIMITATIONS

This study has some limitations. Firstly, given the breadth of the works reviewed in this article, we can lay the foundations for the expansion of studies that relate entrepreneurship to wellbeing, which will be required in the future. But focusing this systematic review on SSCI + SCIE databases, only considering articles that are part of JCR-WoS journals collection, creates a limitation in the scope of the sample to avoid adding irrelevant articles to the study dataset. A trade-off for having a significant impact worldwide (Carabantes-Alarcón and Alou-Cervera, 2019; Serrano et al., 2019) is to assume this scope limitation. Additionally, a strong future methodological challenge is to achieve greater integration between Scientometrics and the eligibility techniques incorporated in PRISMA (PICOS or SPIDER).

Secondly, we should delve into specific application fields, such as Entrepreneurship and job satisfaction, Entrepreneurship and self-efficacy, Entrepreneurship and health, Entrepreneurship and happiness, and Entrepreneurship and life satisfaction. This, as the corpus of articles continues to grow exponentially over time, can be improved as there is a critical mass of research in each of these topics.

Thirdly, this study details thematic trends but does not analyze the academic trajectory of prolific authors, although it identifies common patterns that can be of significant interest in the training of future young researchers.

Fourth, this review is mainly limited to a study that descriptive about the knowledge production between the intersection of wellbeing and entrepreneurship topics, establishing relevance, concentrations, and relationships between various data and metadata that characterize the articles selected as the corpus studied.

Finally, the expected changes in the business conception that the global pandemic from Sars-Cov-2 has imposed on us (Carnevale and Hatak, 2020; Saiz-Álvarez et al., 2020; Ahmad et al., 2021) could generate changes in this interrelation, increasing the tension between entrepreneurship and wellbeing

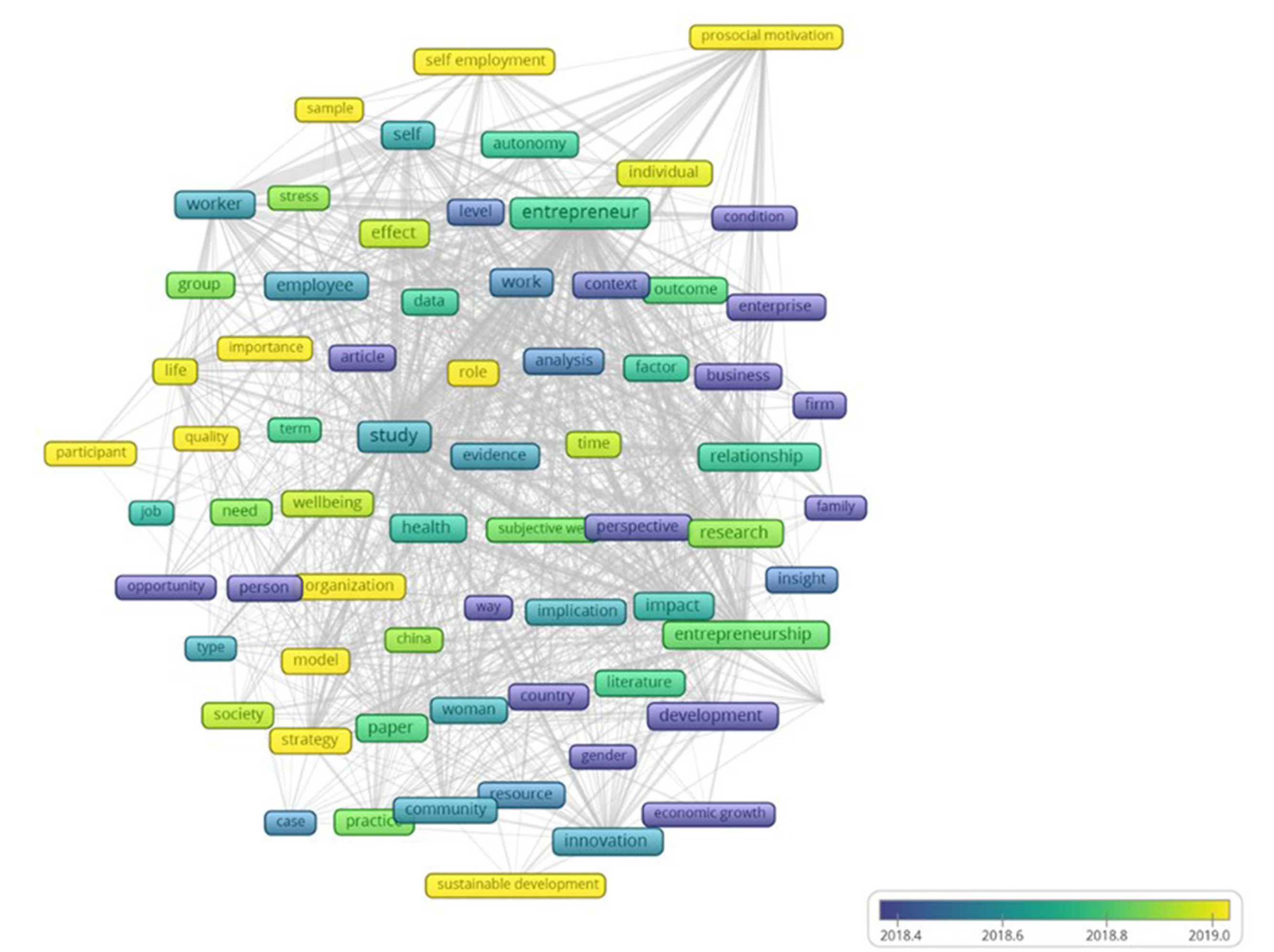

FIGURE 8 | Key terms.

and creating forms of defense against the negative effects (Hernández-Sánchez et al., 2020). This is a phenomenon that should be studied in a "New Normality" stage.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

AV-M structured and extracted most of the information and produced a draft of the results. NC-B extracted additional information and added it to the analysis. NC-B and GS-S reviewed the literature to produce the conceptual background of the study. AA-M, JE-C, and AV-M drafted several parts of the article and, together with AV-M and NC-B, analyzed the data set. All of the authors are fully responsible for the totality of the work and followed a strict ethical and integrity protocol to produce and present the results of their research. All authors conceptualized this scientometrics systematic review.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2021.641465/full#supplementary-material

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Influence of Entrepreneurial Orientation on Venture Capitalists' Initial Trust

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The effectiveness of trust has been extensively investigated in entrepreneurship studies. However, compared to the outcomes of trust, we still lack knowledge about the mechanisms underlying venture capitalists' initial trust in entrepreneurs. Drawing from signal theory and impression management theory, this study explores an impression management motivational explanation for the influencing factors of venture capitalists' initial trust. An empirical test is based on 202 valid questionnaires from venture capitalists, and the results indicate that the signal of five dimensions of entrepreneurial orientation has a significant impact on the initial trust of venture capitalists and that a signal of entrepreneurial orientation of perseverance or passion positively influences venture capitalists' initial trust through acquired impression management strategies, while a signal of entrepreneurial orientation of risk-taking, innovation, or proactivity positively affects the initial trust of venture capitalists through defensive impression management strategies. The perceptions of entrepreneurs' hypocrisy by venture capitalists negatively moderate the relationship between acquired impression management strategies and the initial trust of venture capitalists and negatively moderate the relationship between defensive impression management strategies and the initial trust of venture capitalists.

Keywords: entrepreneurial orientation, entrepreneurial intention, initial trust, impression management strategies, perceptions of hypocrisy

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INTRODUCTION

During the economic transition period, the business environment is changing rapidly. How to obtain external resources to promote corporate growth for "new and weak" start-ups has gradually become an urgent problem to be solved in academic and practical circles. The trust of venture capitalists in entrepreneurs, as one of the important ways for start-ups to obtain external "soft" resources, affects the success or failure of start-ups to a large extent. Studies have confirmed that the trust of venture capitalists in entrepreneurs helps entrepreneurs to obtain financial capital and strategic advice for new ventures, thereby enhancing the level of innovation (Maula et al., 2013) and improving financial performance (Park and Steensma, 2012). However, existing studies have paid more attention to the trust of venture capitalists in entrepreneurs after investment, and research on initial trust before investment is rare. The development of trust occurs in stages (Schoorman et al., 2007), so the investigation of trust in entrepreneurs by venture capitalists should be dynamic (Yang and Li, 2018).

Initial trust is the general expectation of a party before cooperation to rely on others and the consequent behaviors based on his or her own life experience and human nature (Yi and Zhou, 2011). This trust is generated before venture capitalists make investment decisions, and it is an important factor affecting the cooperative relationship between venture capitalists and entrepreneurs (Cholakova and Clarysse, 2015). Based on this, identifying the influencing factors and the mechanism of the initial trust of venture capitalists has important theoretical and practical significance for promoting cooperation between the parties and the development of start-ups.

Initial trust, as an expectation of subjective will, is based on the non-interactive communication between parties and represents the "primary trust" of one party in the other. At present, the research on initial trust mainly focuses on two aspects. First is stage division. According to the dynamic development process of trust, trust can be divided into stages of establishment, continuation, and extinction (Rousseau et al., 1998). Among them, initial trust is not only the first step but also an important step, which is widely recognized by most scholars. For example, Yi and Zhou (2011) highlighted the initial trust stage in the evolution of trust in the study of the dimensions of trust between Chinese VC-E. Second is contributing factors. The initial trust facilitating is mainly divided into three categories: one is the characteristics of the relying party, such as trust tendencies and resource ownership (Wei and Long, 2008); the second is the characteristics of the trusted party, such as reputation and ability; and the third is institutional structural factors, such as third-party protection and risk perception (McKnight et al., 2002). In general, although some studies involve initial trust studies through case analysis, most of them are based on the dynamic evolution of trust after the partnership. Some studies emphasize that in the pre-establishment stage of a business relationship, both parties can make judgments about each other's knowledge and beliefs through mechanisms such as interactive history, information search, reputation, and stereotypes to form initial trust (Huang and Wilkinson, 2013). However, the research lacks quantitative investigation of this subject, and it is necessary to deepen the understanding of the antecedents of initial trust by more empirical analyses. The impact of entrepreneurial orientation, as an extension of the entrepreneurial spirit at the organizational level, on the initial trust of venture capitalists has not received enough attention. Entrepreneurial orientation refers to the tendency of entrepreneurs to seek new business opportunities and translate them into entrepreneurial practice through daily operations and organizational tasks, and is divided into five dimensions: perseverance, enthusiasm, risk-taking, innovation, and proactivity (Santos et al., 2020). Previous studies have confirmed that entrepreneurial orientation has a significant effect on the resource acquisition of new ventures (Moss et al., 2015), which can promote the performance of new ventures through business opportunity identification (Donbesuur et al., 2020). Based on signal theory, entrepreneurs with high entrepreneurial orientation may improve the venture capitalists' cognition of their entrepreneurial ability and thus promote initial trust by releasing signals of entrepreneurial perseverance, passion, risk-taking, innovation, and proactivity. Therefore, the orientation of entrepreneurs may be one of the important factors affecting the initial trust of venture capitalists. However, there is little existing research on the relationship between the two. Based on this, the first purpose of this study is to explore the impact of entrepreneurship orientation on the initial trust of venture capitalists.

Previous studies have mainly investigated the influence mechanism of venture capitalists' trust in entrepreneurs after investment based on signal theory and social exchange theory. Social exchange theory holds that there is a two-dimensional relationship between venture capitalists and entrepreneurs, emotional and instrumental, and a two-way relationship between social and financial resource exchanges (Huang and Knight, 2015). Venture capitalists' trust in entrepreneurs is influenced more by entrepreneurs' subjective factors, such as information signals and interpersonal signals, which will enhance the exchange of financial and non-financial resources between the two parties, thus promoting the growth of new ventures and in turn strengthening mutual trust (Von Gehlen et al., 2018). However, signal theory and social exchange theory cannot fully explain the relationship between entrepreneurship orientation and the initial trust of venture capitalists. The initial trust is generated before cooperation, and the two parties do not have a basis of "reciprocity." However, an excessive emphasis on the subjective initiative of the entrepreneur and underestimation of the heterogeneity of the audience may lead to different understandings of the entrepreneur among different audiences (Wu et al., 2020), making the social and political skills of the entrepreneur ineffective (Fisher et al., 2017). This requires entrepreneurs to strengthen their purpose-oriented management to more effectively obtain the audience's evaluation of themselves and their start-ups (Kibler et al., 2017). The impression management strategy refers to the process by which entrepreneurs actively control their self-image or corporate image to achieve a certain value purpose (Ashforth and Gibbs, 1990), which includes acquired impression management and defensive impression management (Bolino et al., 2008). Existing studies have shown that the theory of impression management can effectively explain the issue of the legitimacy of entrepreneurs in the start-up stage of enterprises facing "new entry defects" and other constraints (Nagy et al., 2012). In addition, in an achievement context, different goal orientations have different influences on how entrepreneurs make decisions and take action (Uy et al., 2017). Individuals with different goal orientations have different cognitive patterns and behavioral responses, and there are significant differences in the tendency to adopt an active strategy or avoidance strategy (Hirst et al., 2009). For example, different motivations for enterprise innovation can improve the innovation performance of brand communities through participation in the behaviors of acquired impression management and defensive impression management (Tang et al., 2020). Therefore, the different entrepreneurial orientations of entrepreneurs should have different influences on the choice of impression management strategies. Based on this, the second problem of this study is to explore the mediating effect of the difference in entrepreneurs' impression management strategy between different entrepreneurial orientations and the initial trust of venture capitalists.

Can entrepreneurs' different impression management strategies definitely generate initial trust in venture capitalists? According to the theory of impression management, an individual's impression management behavior is not only affected by role norms but also restricted by performance venues. Previous studies have shown that the effectiveness of the impression management of entrepreneurs is limited by the cognitive attributes of the audience (Pollack and Bosse, 2014). Hypocrisy perception is defined as an individual's perception of inconsistency between the words and deeds of others (Greenbaum et al., 2015). When entrepreneurs convey different signals of entrepreneurial orientation to venture capitalists through acquired impression management strategies and defensive impression management strategies, venture capitalists make different cognitive interpretations of those signals, which may affect their initial trust judgment. In other words, when venture capitalists' perception of hypocrisy is high, the impression management strategy of entrepreneurs may reduce the initial trust cognition of venture capitalists or, on the contrary, enhance the initial trust cognition of venture capitalists. Based on this, the third issue of this research is to explore the moderating effect of venture capitalists' hypocrisy perception of entrepreneurs on different entrepreneur impression management strategies and venture capitalists' initial trust.

In summary, based on signal theory and impression management theory, this research examines the influence of five different entrepreneurial orientations on the initial trust of venture capitalists, as well as the mediating effect of entrepreneurs' impression management strategies and the moderating effect of false perception. Our research will enrich the existing research on entrepreneurial orientation and initial trust of venture capitalists. Firstly, taking five dimensions of entrepreneurial orientation as the antecedent variable of initial trust of venture capitalists, it fills the gap of the existing research on the relationship to a certain extent. Our research will provide a signal theory explanation for why entrepreneurial orientation affects the initial trust of venture capitalists. Secondly, by introducing the impression management strategies of entrepreneurs, our study will reveal how the entrepreneurs' individual entrepreneurial orientation influences the initial trust of venture capitalists through their different impression management strategies. This will provide a new theoretical perspective to explore how entrepreneurial orientation affects the initial trust process of venture capitalists. Finally, by examining the moderating effect of venture capitalists' perception of hypocrisy, we will define the boundary of effectiveness of different impression management strategies. The theoretical significance of the research is that it will help researchers clarify the relationship and mechanism between entrepreneurial orientation and initial trust, and the practical significance is that it will assist venture capitalists in correctly understanding entrepreneurial orientation, enhancing initial trust and promoting entrepreneurial cooperation.

THEORETICAL OVERVIEW AND HYPOTHESES

Effect of the Signal of Entrepreneurial Orientation on Venture Capitalists' Initial Trust

At present, there are two main disputes about the dimension of entrepreneurial orientation in academia. One is the single dimension of entrepreneurial orientation, which includes risk-taking, innovation, and proactiveness (Covin and Slevin, 1989). They believe that entrepreneurial orientation is an organizational attribute that entrepreneurs show in organizations or business units. This view assumes that there are risk-taking, innovation, and proactiveness in entrepreneurial orientation, and emphasizes that the research of entrepreneurial orientation needs to start from the whole rather than the part (Gupta and Gupta, 2015). The other one is the multidimensional entrepreneurial orientation, which includes risk-taking, innovativeness, proactiveness, autonomy, and competitive aggressiveness (Lumpkin and Dess, 1996). They conceptualize entrepreneurial orientation as a kind of entrepreneurial spirit, and as long as there is an attribute in the five dimensions, they can use the entrepreneur label to define it. Nowadays, most researches mainly focus on the influence of entrepreneurial orientation at the enterprise level on organizational creativity, resource acquisition, and enterprise performance (Ma and Yan, 2016; Shan et al., 2016; Li Y. et al., 2018). It is limited by the measurement of entrepreneurial orientation dimension (Covin and Lumpkin, 2011; Covin and Wales, 2012); there are few studies on the effectiveness of individual entrepreneurship orientation (Koe, 2016; Rahim et al., 2018; Gao et al., 2020). Scholars have also conducted a series of explorations on the dimension measurement of individual entrepreneurship orientation, and the research has gained progress to some extent. For example, Santos et al. (2020) based on previous research added two new dimensions of entrepreneurship orientation: entrepreneurial passion and entrepreneurial perseverance. Integrating the characteristics, emotions, and behaviors of entrepreneurs, they proposed five dimensions of entrepreneurship orientation: perseverance, passion, risk-taking, innovation, and proactivity orientation.

Initial trust is the general expectation of a party to be able to rely on others and their behaviors based on that party's own life experience and understanding of human nature (Yi and Zhou, 2011). In the initial stage of establishing the relationship between venture capitalists and entrepreneurs, since there is no history of interaction between the two sides, venture capitalists cannot make judgments based on previous exchanges between the two sides, and their trust in entrepreneurs can be established only on the basis of available information about the entrepreneurs (Huang and Wilkinson, 2013). Signal theory indicates that the transmission of signals occurs mainly through the sender, signal, and receiver (Connelly et al., 2011). On the basis of signals sent by entrepreneurs to venture capitalists, the venture capitalists may judge the entrepreneurs' abilities and behaviors according to the signal content and then decide whether to trust them. Therefore, the signal of different start-up orientations of entrepreneurs may have a positive impact on the initial trust of venture capitalists.

First, perseverance is the most obvious entrepreneurial trait. Perseverance is regarded as one of the most important characteristics of successful entrepreneurs (Shane et al., 2003). Entrepreneurs can succeed in starting their own businesses only if they persist in pursuing their goals. Perseverance orientation refers to the entrepreneurial trait of persistence in pursuing goals even if entrepreneurial obstacles are encountered (Gerschewski et al., 2016). In the early stages of the establishment or development of start-ups, facing the development dilemma of "newcomers' weakness," entrepreneurs who persist in entrepreneurship are driven by entrepreneurial self-efficacy (Li C. et al., 2018), continue to promote entrepreneurial self-learning, and are willing to put more effort into sending positive signals to venture capitalists, thereby enhancing the venture capitalists' positive expectations. When making initial trust judgments, venture capitalists will consider not only the return if the venture project succeeds but also the entrepreneur's ability to complete the project. Entrepreneurs who persist in entrepreneurship orientation have high psychological resilience (Eisenberger and Leonard, 1980). In the face of entrepreneurial pressure and difficulties, they are better able to actively resist adversity and quickly adapt to changes. This signals to VC the potential of entrepreneurs to recover and succeed in difficult situations. At the same time, strong motivation for goal realization can better meet the expectations of venture capitalists for the results of venture cooperation.

Second, passion is the most direct entrepreneurial experience for entrepreneurs. Passionate orientation means that entrepreneurs consciously acquire and experience positive and strong emotion in the entrepreneurial process (Cardon et al., 2009). In the early stage of social interaction, passionate entrepreneurs actively participate in the establishment of start-ups, showing positive emotions of self-confidence and optimism, which easily release their emotions, attitudes, and behavior signals. Such signals are likely to infect venture capitalists and promote the rapid establishment of a trust relationship between the two parties. Individuals who are passionate about entrepreneurship have a strong sense of identity, which drives them to continuously acquire new knowledge and skills to achieve entrepreneurial success (Zhang and Li, 2019). This signals to venture capitalists that entrepreneurs are coachable. Ciuchta et al. (2018) confirmed that the coachability of entrepreneurs is a kind of interpersonal signal, and the higher the perception of entrepreneurs' coachability is, the more willing venture capitalists are to invest. Emotion has a transmitting function. The positive emotional experience of venture capitalists comes not only from the entrepreneur's passion for starting a business but also from the passion for perceiving products or services (Davis et al., 2017). This dual emotional experience may enhance the strength of the signal. Research has shown that when individuals experience positive emotional states, they are more likely to establish cooperation (Dimotakis et al., 2012).

Third, risk-taking reflects the entrepreneur's tendency to take risks. This entrepreneurial orientation refers to the tendency to take chances when facing an uncertain environment, dare to venture into unknown areas, and be willing to take risks (Langkamp Bolton and Lane, 2012). Alvarez and Busenitz (2001) pointed out that entrepreneurial companies tend to take risks in turning new products and services into market opportunities to create new wealth. In the process of developing new products and new services, facing high market uncertainty and investment return risks, entrepreneurs' strong risk responsibility enables startups to identify potential risks that may exist and quickly develop market response strategies to reduce risks in order to promote enterprise development, which releases positive signals of entrepreneurial competence to venture capitalists. Entrepreneurs may also use rhetoric to describe their image of daring to take risks, and to enhance the signal strength of the initial trust of venture capitalists. Wang et al. (2016) pointed out in their study that different language styles of project sponsors can change investors' perception of project prospects and thus affect their investment intentions.

Fourth, innovation reflects the entrepreneur's tendency to pursue excellence. Innovation orientation refers to the creative and experimental behavior tendency to develop new products, new services, and new technologies through new processes (Langkamp Bolton and Lane, 2012). In the early stage of project funding screening, venture capitalists pay more attention to the products or opportunities provided by entrepreneurs than the quality of the entrepreneurs (Mitteness et al., 2012). However, at this stage, venture capital is usually based on a single product, a few products, or even products that have not been fully formed or tested (Parhankangas and Ehrlich, 2014), leading to a lack of objective evidence for the success of the product or service market for the venture capitalists, who then can make investment decisions only through subjective judgment (Maxwell et al., 2011). Entrepreneurs with an innovative entrepreneurial orientation have a stronger innovation drive and higher demand for entrepreneurial resources. They usually seek external support for product or service development or process reengineering, and products or services are the focus of entrepreneurship speech (Mollick, 2014). Creative products or services can gain widespread recognition and competitive advantages (Ward, 2004), which undoubtedly strengthens the signal to venture capitalists to release high-quality products or services.

Last, proactivity reflects the tendency of entrepreneurs to venture to be a pioneer. Proactivity orientation refers to the tendency to lead competitors and meet future demands by discovering and seizing opportunities, and introducing new products and services (Langkamp Bolton and Lane, 2012). Taking the initiative and taking the lead in participating in emerging markets is the cornerstone of entrepreneurs' behaviors (Qin et al., 2017). Entrepreneurs with a strong proactivity orientation are unwilling to maintain the existing status quo, seek opportunities for transformation, and promote updates of products or services by introducing new technologies or business models, thus becoming "leaders" of industry. Hu et al. (2018) confirmed that the proactive personalities of individuals are positively related to their entrepreneurial alertness, which in turn influences entrepreneurial intention. This proactive entrepreneurial tendency helps signal to venture capitalists that entrepreneurs have more potential to innovate and bring profit. Research by Anglin et al. (2018) confirmed that project sponsors who have a positive attitude toward "taking necessary measures to achieve established goals" are more likely to succeed in obtaining financing. Entrepreneurs with a strong proactivity orientation are market founders rather than followers who actively carry out innovation (Moss et al., 2015). Compared with other entrepreneurs, it has more acquired competitive advantages, which can transmit high-quality signals to venture capitalists, and help to enhance their perception of entrepreneurial ability (He et al., 2020). Given the above analysis, we propose the following hypothesis:

Hypothesis 1a (H1a): The signal of entrepreneurs' perseverance orientation is positively related to venture capitalists' initial trust.

Hypothesis 1b (H1b): The signal of entrepreneurs' passion orientation is positively related to venture capitalists' initial trust.

Hypothesis 1c (H1c): The signal of entrepreneurs' risk-taking orientation is positively related to venture capitalists' initial trust.

Hypothesis 1d (H1d): The signal of entrepreneurs' innovation orientation is positively related to venture capitalists' initial trust.

Hypothesis 1e (H1e): The signal of entrepreneurs' proactivity orientation is positively related to venture capitalists' initial trust.

The Mediating Role of Impression Management Strategies

According to the content of the signal, it can be divided into quality signals and intention signals. Quality signals convert invisible capabilities into externally observable signals, while intention signals indicate the direction of organizational behavior. That is, in addition to different entrepreneurial orientations that have a direct impact on the initial trust of venture capitalists, entrepreneurs can also intentionally release signals to the outside world to influence venture capitalists' perceptions of their abilities and judgment, so that they can then consider whether to give trust. How do entrepreneurs release signals through which their entrepreneurial orientation can affect the initial trust of venture capitalists? From the perspective of social psychology, individuals not only pay close attention to how others view and evaluate them but also change their behavior based on others' views (Leary and Kowalski, 1990). Entrepreneurs' impression management strategies refer to a kind of means and manifestation that entrepreneurs use to influence others' perception of their individual or corporate image (Eisenberger and Leonard, 1980; Elsbach and Sutton, 1992), including acquired impression management strategies and defensive impression management strategies (Bolino et al., 2008). Acquired impression management strategies are strategies to improve others' positive perceptions and to conceal one's negative image. Different goal-oriented individuals have different cognitive and behavioral responses, and there are significant differences in whether they adopt proactive or avoidant strategies (Hirst et al., 2009). Therefore, in the process of releasing signals, entrepreneurs with different entrepreneurial orientations may adopt different impression management strategies to transmit signals, which in turn affects the initial trust of venture capitalists.

With high pressure, multiple obstacles, and high risk in the process of entrepreneurship, entrepreneurs who persist in the process often defy difficulties, constantly strengthen self-learning, and cope with a complex and changing external environment. This perseverance can be positively recognized by venture capitalists. In addition, in the face of business setbacks and failures, persistent entrepreneurs actively adjust their mentality and strive to overcome difficulties and meet challenges with an optimistic attitude. This kind of strong cognitive resilience is likely to be praised by venture capitalists. In addition, entrepreneurs' resilience cannot be separated from social support (Zhang and Li, 2020). In other words, entrepreneurs who have received social support tend to care more about others' positive evaluations of them and thus have more confidence in their own entrepreneurial capabilities (Zhang and Li, 2019). Therefore, to obtain the social support and initial trust of venture capitalists, entrepreneurs who have a high perseverance orientation may release perseverance signals by acquired impression management strategies. For example, entrepreneurs may demonstrate their perseverance and cognitive resilience to venture capitalists through self-improvement or adopt strategies such as actively taking responsibility after setbacks and failures so that they will be recognized and trusted on the basis of their "good impression."

In the face of an uncertain environment, entrepreneurs with a passion orientation usually have a high-risk tolerance. To adapt to rapid changes in development, they dare to make attempts and to make mistakes. Driven by self-identity and positive emotion, they will actively carry out entrepreneurial learning to improve their self-cognitive flexibility so that they can use existing resources to flexibly respond to entrepreneurial challenges. Studies have shown that a learning goal orientation can improve entrepreneurs' self-efficacy (Liu et al., 2019) and promote effective reasoning (Deng et al., 2020). The active efforts of passionate entrepreneurs in this process may be recognized and affirmed by venture capitalists. In addition, the entrepreneurial passion of entrepreneurs can affect stakeholders through emotional contagion. For example, researchers have found that venture capitalists prefer to invest in passionate entrepreneurs (Chen et al., 2009). Therefore, to gain the initial trust of venture capitalists in such a start-up situation, entrepreneurs with a passion orientation tend to arouse their active psychological state and strive to present a good impression to venture capitalists. Studies have shown that passionate entrepreneurs tend to seek external financial support and maintain long-term development with stakeholders according to different decision-making styles and strategic types (Cardon et al., 2013). Therefore, entrepreneurs who are passionate about entrepreneurship may adopt acquired impression management strategies, such as demonstration and using positive language to release passion signals.

Risk-taking entrepreneurs usually have a high degree of risk tolerance. They invest their resources in high-risk projects or technical fields in the market. Once the resources are marketed, they will obtain a higher return on investment. If not, their corporate performance will be greatly reduced

(Si et al., 2016). Although the entrepreneurial orientation of risk-taking can release positive and optimistic signals of risk-taking, if entrepreneurs overemphasize their risk-taking when they interact with venture capitalists, the venture capitalists may doubt their optimistic attitude of "blind" self-confidence and worry about their ability to resist risks. To address such concerns among venture capitalists, entrepreneurs may be more careful in weighing the advantages and credibility issues of such signaling through impression management strategies. For example, excessive emphasis on the benefits of positive impression management in releasing risk-taking signals may be counterproductive. Therefore, to weaken the potential threats associated with risk-taking signals, compared with acquired impression management strategies, entrepreneurs may release signals by adopting defensive impression management strategies.

Innovation-oriented entrepreneurs are driven mainly by innovation. They emphasize the reengineering of products or services, break the existing market balance, and provide customers with creative products or services. Although this approach can release positive signals of innovative potential, it may also give venture capitalists a negative impression. This negative impression comes from two main aspects: on the one hand, entrepreneurs pay too much attention to products or services and then ignore market and customer information, which leads to misjudgment of future products and undermines their start-ups (Wales et al., 2013). On the other hand, venture capitalists and market customers have different perceptions of the legitimacy of the entrepreneurs. Investors pay more attention to the prospects of business development, while entrepreneurs pay more attention to the product itself (Aldrich and Fiol, 1994). In addition, to cope with the threat of competitor imitation, avoid peer competition, and reduce external supervision, entrepreneurs may avoid communicating with the audience to prevent the spread of information (Kibler et al., 2017). Therefore, entrepreneurs may adopt defensive impression management strategies to release signals. On the one hand, they may enhance the good impression of their business in the eyes of venture capitalists, and on the other hand, they may also avoid external pressure and threats.

Proactivity-oriented entrepreneurs are not satisfied with the current situation, actively seek change, constantly try new approaches, and invest much time and energy in exploring new market opportunities. Although this can signal the potential of entrepreneurs to become market leaders, it may also give venture capitalists a negative impression. In the view of venture capitalists, such entrepreneurs may spend much time and energy exploring market opportunities, which may scatter their energy and cause a lack of a unique focus, resulting in insufficient utilization of enterprise resources and causing venture capitalists to worry about the entrepreneurial ability to take advantage of opportunities (Li Y. et al., 2018). In other words, taking the lead in demonstrating proactive and other acquired impression management to shape themselves or improve the impression they make on venture capitalists may have counterproductive effects. Therefore, to reduce the negative impact of proactivity signals on self-image, entrepreneurs may adopt defensive impression management in releasing signals. Research has shown that in emerging market, to avoid potential negative results, entrepreneurs usually adopt defensive impression management strategies, such as public statements, demarcations, and hedging, to label the market (Granqvist et al., 2013). Based on the above discussion, we propose the following hypothesis:

Hypothesis 2a (H2a): The acquired impression management strategy plays a mediating role between entrepreneurs' perseverance orientation and venture capitalists' initial trust.

Hypothesis 2b (H2b): The acquired impression management strategy plays a mediating role between entrepreneurs' passion orientation and venture capitalists' initial trust.

Hypothesis 2c (H2c): The defensive impression management strategy plays a mediating role between entrepreneurs' risk-taking orientation and venture capitalists' initial trust.

Hypothesis 2d (H2d): The defensive impression management strategy plays a mediating role between entrepreneurs' innovation orientation and venture capitalists' initial trust.

Hypothesis 2e (H2e): The defensive impression management strategy plays a mediating role between entrepreneurs' proactivity orientation and venture capitalists' initial trust.

The Moderating Role of Perceptions of Hypocrisy

Perceptions of hypocrisy refer to the individual's perception of the inconsistency between the words and deeds of others (Greenbaum et al., 2015). Perceptions of hypocrisy emphasize individuals' subjective feelings toward others' behavior, which may lead to the judgment that others are hypocritical, regardless of whether they engage in unreasonable or unethical behavior (Yao et al., 2019). At present, most scholars have studied the hypocrisy of leadership in the field of organizational behavior and corporate hypocrisy in the field of marketing, but less research has been conducted on the perception of hypocrisy in the field of entrepreneurship. However, some studies point out that the consistency of entrepreneurs' behaviors is an important criterion for venture capitalists to evaluate entrepreneurs' credibility (Chen and Ye, 2010) and is positively correlated with venture capitalists' investment decisions (Yang and Li, 2018).

The impression management strategies reflect entrepreneurs' intentional "self-presentation" in order to gain initial trust. We believe that there is still a gap between the entrepreneurial impression management strategy and the initial trust of venture capitalists. In other words, in the process of signal transmission, whether entrepreneurs' different impression management strategies can be transformed into initial trust depends on how venture capitalists interpret them. Previous studies have pointed out that the effectiveness of impression management strategies depends largely on the different perceptions of audiences (Kibler et al., 2017). As subjective perceptions, venture capitalists' perceptions of entrepreneurs' differences in words and deeds vary. The perception of hypocrisy means that venture capitalists make negative judgments about the consistency of entrepreneurial behavior, which will increase the potential risk to the initial trust of venture capitalists. Therefore, the perception of hypocrisy may weaken the relationship between entrepreneurs' impression management

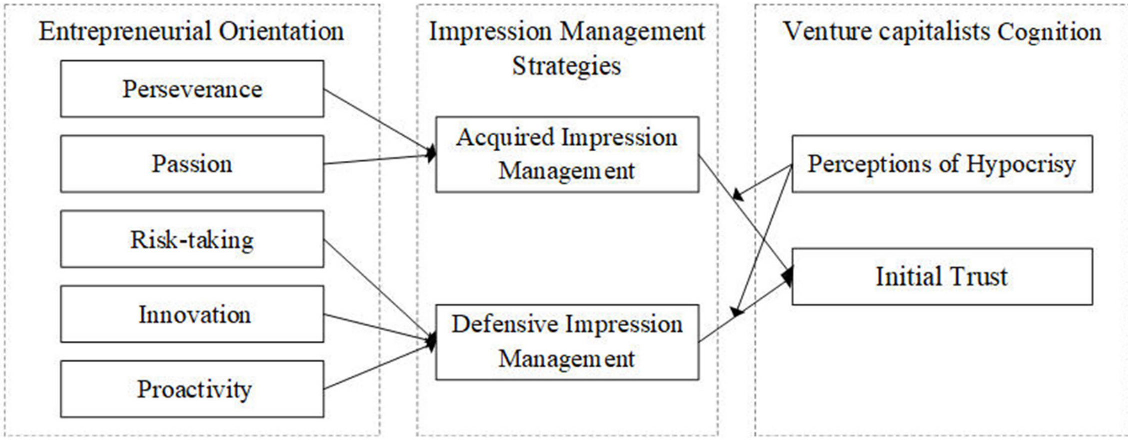

FIGURE 1 | Theoretical model.

strategy and the initial trust of venture capitalists. Specifically, the higher the perception of entrepreneurs' hypocrisy, the more malicious intent will be attributed to the entrepreneurs' behavioral strategy. Especially when entrepreneurs use the defensive impression management strategy to release signals of daring to take risks, pursuing product or service innovation, and actively seeking market opportunities, this minimizing positive effect may enhance venture capitalists' perception of the inconsistency of words and deeds of entrepreneurs. In the view of venture capitalists, these perceptions are only a superficial illusion, but the real purpose is to pursue profit, which will lead them to question the behavioral motivation of entrepreneurs and trigger their resistance. Studies have shown that when individuals have a high perception of other people's hypocrisy, it is likely to cause negative interpersonal reactions, such as distrust and moral condemnation (Effron et al., 2018). In contrast, the lower the perceptions of entrepreneurs' hypocrisy are, the greater the initial trust in the entrepreneurs because venture capitalists will interpret their behavioral strategies in good faith. Especially when entrepreneurs adopt the acquired impression management strategy to release signals of passion and perseverance entrepreneurial orientations, this maximum positive effect may strengthen the venture capitalists' perception of the consistency of the entrepreneurs' words and deeds and enable the entrepreneurs to consciously release different behavioral signals to better meet the trust cognition of venture capitalists on behavior consistency in entrepreneurial cooperation (Yang and Li, 2017). In summary, we propose the following hypothesis:

Hypothesis 3a (H3a): Perceptions of hypocrisy negatively moderate the relationship between the acquired impression management strategy and venture capitalists' initial trust.

Hypothesis 3a (H3a): Perceptions of hypocrisy negatively moderate the relationship between the defensive impression management strategy and venture capitalists' initial trust.

Based on the above theoretical view and research hypotheses, the theoretical model of this research is shown in **Figure 1**.

METHODS

Participants and Procedures

Taking into account the research on venture capitalists' initial trust in entrepreneurs before the cooperative relationship, according to the definition of new ventures by McDougall and Robinson (1990), venture capitalists whose investment company was established within the previous 8 years are selected as the research objects. We adopted the form of electronic questionnaire and commissioned a professional market research company to conduct online data collection for venture capitalists in various regions of the country. Before the research started, the research team did a lot of preparatory work. In terms of questionnaire design, in order to ensure the accuracy and authenticity of the online survey, the research team developed the questionnaire by combing relevant literature and conducting field research. The team members communicated and discussed repeatedly to improve the questionnaire design. During the release of the questionnaire, team members communicated with the research company many times to inform and supervise the quality of the questionnaire survey. For example, the survey respondents were informed that venture capitalists must have experience in investing in startup entrepreneurs. Finally, the collected questionnaires were screened to eliminate invalid questionnaires, such as those with short answer time and incomplete answers. The data collection period was from July 2020 to September 2020. A total of 357 questionnaires were collected, of which 202 were valid. The questionnaire recovery rate was 56.58%. The descriptive statistical results of the sample are as follows: Among the venture capitalists surveyed, there were 107 male venture capitalists, accounting for 53%, and 95 female venture capitalists, accounting for 47%. In terms of age, 28 were aged 25 and below, accounting for 13.9%; 120 were aged 26–35, accounting for 59.4%; 42 were aged 36–45, accounting for 20.8%; and 12 were aged 46 and above, accounting for 5.9%. In terms of education level, 31 had completed high school or below, accounting for 15.3%; 70 had a college degree, accounting for

34.7%; 89 had an undergraduate education, accounting for 44.1%; and 12 had a postgraduate degree and above, accounting for 5.9%. In terms of entrepreneurial investment experience, 63 had entrepreneurial experience, accounting for 31.2%, and 139 had no previous entrepreneurial experience, accounting for 68.8%. Judging by the establishment years of the invested companies, 149 venture capitalists had invested in companies for 1–3 years, accounting for 73.8%; 48 had invested for 4–6 years, accounting for 23.8%; and 5 had invested for 8 years, accounting for 2.5%.

Measures

The measurement scales used in this study are all scales with good reliability and validity in the Chinese and English literature, and they were ultimately determined after back-translation procedures. Except for controlled variables, all variables were scored with a five-point Likert scale ranging from 1 (totally disagree) to 7 (totally agree). The measurement of the independent variable entrepreneurial orientation was based on the scale developed by Santos et al. (2020) with five dimensions, perseverance orientation, passion orientation, risk-taking orientation, innovation orientation, and proactivity orientation, with a total of 12 items. Perseverance had three items; an example is "In complex situations, even if others choose to give up, entrepreneurs still insist on achieving their goals," and the Cronbach's α was 0.89. Passion had two items; an example is "Entrepreneurs have a passion for finding good business opportunities, developing new products or services, exploiting business applications and creating new solutions for existing problems and needs," and the Cronbach's α was 0.85. Risk-taking had two items; an example is "Entrepreneurs like to venture into the unknown and make risky decisions," and the Cronbach's α was 0.77. Innovation had three items; an example is "Entrepreneurs favor trying out new approaches to problem solving rather than using methods that others often use," and the Cronbach's α was 0.89. Proactivity had two items; an example is "Entrepreneur tend to plan projects in advance," and the Cronbach's α was 0.84. The scale in the study of Zhao and Zhao (2019), which had 15 items, was used to measure the mediator variable impression management strategies, including two dimensions: acquired impression management strategies and defensive impression management strategies. Acquired impression management strategies had seven items, an example is "In order to make a good impression on me, entrepreneurs always actively participate in start-up discussions with me during the start-up process," and the Cronbach's α was 0.87. Defensive impression management strategies had eight items; an example is "In order to avoid losing face when discussing with me the idea of starting a business project, entrepreneurs often agree with my opinion instead of arguing with me," and the Cronbach's α was 0.91. The moderator variable perceptions of hypocrisy were measured with a four-item scale developed by Greenbaum et al. (2015); an example is "The entrepreneur asked me to follow the rules, but he/she violated them," and the Cronbach's α was 0.92. The dependent variable initial trust was measured using a scale from Yi (2011) that contained four items; an example is "I think entrepreneurs are capable and persist in completing tasks," and the Cronbach's α was 0.89. Additional demographic characteristic variables, including gender, age, education level, entrepreneurial experience of entrepreneurs, and the established years of invested enterprises, were selected as control variables.

RESULTS

Common Method Bias Analyses

The sample data were collected by questionnaire in our study, and the measurement items were answered by the venture capitalists themselves, which may incur the problem of common method bias. To ensure the reliability of the research results, we used SPSS 21.0 for Harman's single-factor test and carried out principal component analysis (PCA) on all measurement items of the core variables involved in the research. The data results show that among the seven principal components extracted by the unrotated component matrix, there is no single component that can explain the overall variation, and the first principal component with the largest eigenvalue explains the variation of 26.48%, less than half the overall variation of 70.22%, which shows that there is no serious common method bias in our study.

Confirmatory Factor Analyses

We conducted confirmatory factory analyses (CFAs) to test the discriminant validity of the research variables included in our study: perseverance orientation, passion orientation, risk-taking orientation, innovation orientation, proactivity orientation, acquired impression management strategies, defensive impression management strategies, perceptions of hypocrisy, and initial trust. As shown in **Table 1**, our hypothesized nine-factor model fit the data better [$\chi 2/\mathrm{df} = 1.627$, CFI = 0.928, TLI = 0.919, RMSEA = 0.056] than the other factor models such as the eight-factor and seven-factor models. These results provided support for the distinctiveness of the nine variables.

Preliminary Analyses

Table 2 provides the mean, standard deviation, and correlations among all variables. **Table 2** shows that perseverance orientation ($r = 0.461$, $p < 0.01$), passion orientation ($r = 0.511$, $p < 0.01$), risk-taking orientation ($r = 0.506$, $p < 0.01$), innovation orientation ($r = 0.416$, $p < 0.01$), and proactivity orientation ($r = 0.351$, $p < 0.01$) are significantly and positively correlated with initial trust. H1a, H1b, H1c, H1d, and H1e are therefore preliminarily supported. Moreover, acquired impression management strategies are obviously positively correlated with perseverance orientation ($r = 0.317$, $p < 0.01$), passion orientation ($r = 0.302$, $p < 0.01$), and initial trust ($r = 0.269$, $p < 0.01$); H2a and H2b are therefore preliminarily supported. Defensive impression management strategies are positively related to risk-taking orientation ($r = 0.300$, $p<0.01$), innovation orientation ($r = 0.252$, $p < 0.01$), proactivity orientation ($r = 0.382$, $p < 0.01$), and initial trust ($r = 0.526$, $p < 0.01$), H2c, H2d, and H2e are therefore preliminarily supported. There is a negative correlation between perceptions of hypocrisy and acquired impression management strategies ($r = -0.167$, $p < 0.05$), which indicates that perceptions of hypocrisy may have a negative effect on acquired impression management strategies.

TABLE 1 | Confirmatory factory analyses.

Model	χ^2	df	χ^2/df	$\Delta\chi2(\Delta df)$	CFI	TLI	RMSEA
Nine-factor model	852.63	524	1.63		0.93	0.92	0.06
Eight-factor model[a]	948.22	532	1.78	95.60***(8)	0.91	0.90	0.06
Seven-factor model[b]	1179.90	539	2.19	327.27***(15)	0.86	0.85	0.08
Six-factor model[c]	1271.66	545	2.33	419.03***(21)	0.84	0.83	0.08
Five-factor model[d]	1503.32	550	2.73	650.69***(26)	0.79	0.78	0.09
Four-factor model[e]	2212.15	554	3.99	1359.53***(30)	0.64	0.61	0.12
Three-factor model[f]	2809.14	557	5.04	1956.51***(33)	0.51	0.48	0.14
Two-factor model[g]	3457.91	559	6.19	2605.28***(35)	0.37	0.33	0.16
One-factor model	3544.29	560	6.33	2691.66***(36)	0.35	0.31	0.16

N = 202. PE, perseverance orientation; PA, passion orientation; RT, risk-taking orientation; IN, innovation orientation; PR, proactivity orientation; AIM, acquired impression management strategies; DIM, defensive impression management strategies; PH, perceptions of hypocrisy; IT, initial trust.

[a] In the eight-factor model, items of PE and PA were loaded on one factor.

[b] In the seven-factor model, items of RT, IN, and PR were loaded on one factor.

[c] In the six-factor model, items of PE and PA were loaded on one factor, and items of RT, IN, and PR were loaded on one factor.

[d] In the five-factor model, items of PE, PA, RT, IN, and PR were loaded on one factor.

[e] In the four-factor model, items of PE, PA, RT, IN, and PR were loaded on one factor, and items of AIM and DIM were loaded on one factor.

[f] In the three-factor model, items of PE, PA, RT, IN, and PR were loaded on one factor, items of AIM, DIM and PH were loaded on one factor.

[g] In the two-factor model, items of PE, PA, RT, IN, PR, IM, DIM, and PH were loaded on one factor.

$^{***}p < 0.001$.

TABLE 2 | Means, standard deviations, and correlations for all variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Gender	-													
2.Age	−0.14	-												
3.Education	−0.15*	0.27**	-											
4.Experience	−0.05	0.12	0.10	-										
5.Establishment	−0.13	0.21**	0.15*	−0.02	-									
6.PE	−0.06	0.28**	0.37**	0.15*	0.16*	-								
7.PA	−0.04	0.36**	0.43**	0.13	0.17*	0.62**	-							
8.RT	0.13	0.29**	0.35**	0.07	0.02	0.42**	0.52**	-						
9.IN	−0.07	0.32**	0.28**	0.16*	0.07	0.28**	0.34**	0.34**	-					
10.PR	−0.03	0.32**	0.33**	0.08	0.12	0.35**	0.39**	0.51**	0.35**	-				
11.AIM	−0.02	0.10	0.12	0.03	−0.00	0.32**	0.30**	0.12	0.13	0.03	-			
12.DIM	0.14*	0.09	0.13	0.08	−0.01	0.09	0.13	0.30**	0.25**	0.38**	0.01	-		
13.PH	0.08	−0.03	−0.11	0.06	−0.15*	−0.13	−0.13	−0.22**	−0.19**	−0.23**	−0.17*	0.01	-	
14.IT	0.04	0.27**	0.32**	0.14	0.04	0.46**	0.51**	0.56**	0.42**	0.35**	0.27**	0.53**	−0.13	-
Mean	0.53	2.19	2.41	0.31	1.29	3.911	4.00	3.92	3.96	3.91	2.70	3.99	2.35	4.13
SD	0.50	0.74	0.82	0.46	0.51	1.03	1.05	1.00	1.07	1.08	1.08	0.83	1.23	0.91

$^{*}P < 0.05$, $^{**}P < 0.01$.

Analyses of the Main Effect and Mediating Effect

According to the steps proposed by MacKinnon (2008), we used the SPSS PROCESS program developed by Hayes (2013) and referred to model 4 (using the bootstrap method to run 5,000 iterations) in the process macro plug-ins, examining whether the acquired impression management strategies mediate the relationship between perseverance orientation, passion orientation, and the initial trust of venture capitalists and whether defensive impression management strategies mediate the relationship between risk-taking orientation, innovation orientation, proactivity orientation, and the initial trust of venture capitalists.

Regarding the mediating effect of acquired impression management strategies, the specific results are shown in **Table 3**. After controlling for gender, age, education level, experience, and enterprise establishment years, the first step is to test the total effect of perseverance orientation, passion orientation, and the initial trust of venture capitalists. Model M1 and M2 in **Table 3** show that perseverance orientation (M1, $\beta = 0.324$, $p < 0.001$) and passion orientation (M2, $\beta = 0.371$, $p < 0.001$) have significant positive effects on the initial trust of venture

TABLE 3 | The mediation effect test of acquired impression management strategies.

Variable	IT		AIM		IT	
	M1	M2	M3	M4	M5	M6
Gender	0.19	0.16	−0.02	−0.05	0.19	0.16
Age	0.17*	0.12	0.03	−0.01	0.17*	0.12
Education	0.18*	0.14	0.00	−0.02	0.18*	0.14
Experience	0.11	0.12	−0.05	−0.032	0.11	0.12
Establishment	−0.11	−0.11	−0.12	−0.12	−0.09	−0.10
PE	0.32***		0.34***		0.29***	
PA		0.37***		0.33***		0.34***
AIM					0.11*	0.11*
Intercept	2.05***	2.07***	1.49***	1.62***	1.89***	1.90***
R^2	0.27	0.29	0.10	0.10	0.29	0.31
F	11.94***	13.56***	3.78**	3.39**	11.04***	12.42***

*Reported coefficients are unstandardized (with robust standard errors). *p < 0.05, **p < 0.01, ***p < 0.001.*

capitalists. Therefore, H1a and H1b are further supported. The second step is to examine the direct influence of perseverance orientation and passion orientation on acquired impression management strategies. M3 and M4 in **Table 3** show that perseverance orientation has a significant positive impact on acquired impression management strategies (M3, $\beta = 0.340$, $p < 0.001$). Passion orientation has a significant positive impact on acquired impression management strategies (M4, $\beta = 0.330$, $p < 0.001$). The third step is to examine the relationship between the acquired impression management strategies and the initial trust of venture capitalists. M5 and M6 indicate that when perseverance orientation and passion orientation are controlled respectively, there is a significant regression relationship between acquired impression management strategies and the initial trust of venture capitalists (M5, $\beta = 0.113$, $p < 0.05$; M6, $\beta = 0.108$, $p < 0.05$). In addition, the bootstrap method based on the percentile deviations shows that the mediating effect between perseverance orientation and the initial trust of venture capitalists is significant ($\beta = 0.038$, $SE = 0.021$, 95% confidence interval [0.006, 0.086]), and the mediating effect accounts for 11.8% of the total effect; in addition, the mediating effect between passion orientation and the initial trust of venture capitalists is significant ($\beta = 0.036$, $SE = 0.020$, 95% confidence interval [0.001, 0.079]), and the mediating effect accounts for 9.6% of the total effect. Therefore, H2a and H2b are supported.

Regarding the mediating effect of defensive impression management strategies, the analysis results are shown in **Table 4**. After controlling for gender, age, education level, experience, and enterprise establishment years, the first step is to test the total effect of risk-taking orientation, innovation orientation, proactivity orientation, and the initial trust of venture capitalists. M7, M8, and M9 in **Table 4** show that risk-taking orientation (M7, $\beta = 0.442$, $p < 0.001$), innovation orientation (M8, $\beta = 0.272$, $p < 0.001$), and proactivity orientation (M9, $\beta = 0.380$, $p < 0.001$) have significant positive effects on the initial trust of venture capitalists. Therefore, H1c, H1d, and H1e are further supported. The second step is to examine the direct influence of risk-taking orientation, innovation orientation, and proactivity orientation on acquired impression management strategies. M10, M11, and M12 in **Table 4** show that risk-taking orientation (M10, $\beta = 0.217$, $p < 0.001$), innovation orientation (M11, $\beta = 0.179$, $p<0.001$), and proactivity orientation (M12, $\beta = 0.295$, $p < 0.001$) have a significant positive impact on defensive impression management strategies. The third step is to examine the relationship between defensive impression management strategies and the initial trust of venture capitalists. M13, M14, and M15 indicate that when risk-taking orientation, innovation orientation, and proactivity orientation are controlled, there is a significant regression relationship between defensive impression management strategies and the initial trust of venture capitalists (M13, $\beta = 0.426$, $p < 0.05$; M14, $\beta = 0.467$, $p < 0.05$; M15, $\beta = 0.404$, $p < 0.05$). In addition, the bootstrap method based on the percentile deviations shows that the mediating effect between risk-taking orientation and the initial trust of venture capitalists is significant ($\beta = 0.092$, $SE = 0.044$, 95% confidence interval [0.021, 0.191]), and the mediating effect accounts for 20.9% of the total effect; the mediating effect between innovation orientation and the initial trust of venture capitalists is significant ($\beta = 0.083$, $SE = 0.042$, 95% confidence interval [0.126, 0.174]), and the mediating effect accounts for 30.7% of the total effect; and the mediating effect between proactivity orientation and the initial trust of venture capitalists is significant ($\beta = 0.119$, $SE = 0.043$, 95% confidence interval [0.041, 0.209]), and the mediating effect accounts for 31.3% of the total effect. Therefore, H2c, H2d, and H2e are further supported.

Analyses of the Moderating Effect

This study refers to model 4 in the SPSS PROCESS program developed by Hayes (2013) to test whether perceptions of hypocrisy moderate the relationship between acquired impression management and initial trust of venture capitalists and between defensive impression management and the initial trust of venture capitalists. The analysis results are shown in **Table 5**. M16 shows that there is a main effect between

TABLE 4 | The mediation effect test of defensive impression management strategies.

Variable	IT			DIM			IT		
	M7	M8	M9	M10	M11	M12	M13	M14	M15
Gender	0.02	0.21	0.17	0.20	0.29*	0.26*	−0.06	0.07*	0.06
Age	0.11	0.15	0.12	0.13	0.19	−0.02	0.10	0.14	0.13
Education	0.13	0.23**	0.17*	0.05	0.09	0.03	0.11	0.19**	0.16*
Experience	0.16	0.11	0.15	0.12	0.08	0.11	0.11	0.07	0.11
Establishment	−0.05	−0.07	−0.08	−0.00	−0.02	−0.05	−0.00	−0.04	−0.06
RT	0.44***			0.22***			0.35***		
IN		0.27***			0.180**			0.19***	
PR			0.38***			0.30***			0.26***
DIM							0.43***	0.47***	0.40***
Intercept	1.80***	2.07***	1.95***	2.86***	2.88***	2.71***	0.58	0.73*	0.86**
R^2	0.34	0.25	0.33	0.11	0.10	0.18	0.48	0.41	0.44
F	17.08***	10.54***	15.76***	3.91***	3.55**	6.88***	25.63***	19.27***	21.76***

*Reported coefficients are unstandardized (with robust standard errors). *p < 0.05, **p < 0.01, ***p < 0.001.*

TABLE 5 | The moderating effect test of perceptions of hypocrisy.

Variable	M16 (IT)			M17 (IT)		
	β	*SE*	*t*	*β*	*SE*	*t*
Gender	0.22	0.12	1.91	0.08	0.11	0.76
Age	0.23	0.085	2.80**	0.22	0.07	3.08**
Education	0.26	0.26	0.07***	0.22	0.07	3.15***
Experience	0.190	0.13	1.51	0.14	0.11	1.28
Establishment	−0.03	0.12	−0.27	−0.08	0.10	−0.78
AIM	0.18	0.05	3.35***			
DIM				0.53	0.06	8.48***
PH	−0.07	0.05	−1.41	−0.11	0.04	−2.55*
AIM×PH	−0.09	0.04	−2.08*			
DIM×PH				−0.10*	0.04	−2.58*
Intercept	2.84	0.27	10.58***	3.12	0.24	13.06***
R^2		0.23			0.41	
F		7.23***			16.42***	

*Reported coefficients are unstandardized (with robust standard errors). *p < 0.05, **p < 0.01, ***p < 0.001.*

acquired impression management strategies and the initial trust of venture capitalists (M16, $\beta = 0.182$, $p < 0.001$), and this main effect is moderated by the perception of hypocrisy (M16, $\beta = -0.088$, $p < 0.05$), indicating that the perception of hypocrisy negatively moderates the relationship between acquired impression management and the initial trust of venture capitalists. Similarly, M17 shows that there is a main effect between defensive impression management strategies and the initial trust of venture capitalists (M17, $\beta = 0.530$, $p < 0.001$), and this main effect is moderated by the perception of hypocrisy (M17, $\beta = -0.100$, $p < 0.05$), indicating that the perception of hypocrisy negatively moderates the relationship between defensive impression management and the initial trust of venture capitalists. Therefore, H3a and H3b are supported.

To further test whether the moderating effect of perception of hypocrisy is in line with the presupposed expectation, this study follows the methods proposed by Aiken and West (1991) to conduct a further simple slope analysis (see **Figures 2**, **3**). As **Figure 2** shows, when the perception of hypocrisy (M-SD) is low, the entrepreneur's use of acquired impression management strategies has a positive effect on the initial trust of venture capitalists ($\gamma = 0.343$, $t = 4.239$, $p < 0.001$), while when the perception of hypocrisy (M+SD) is high, the entrepreneur's use of acquired impression management strategies no longer has a significant effect on the initial trust of venture capitalists ($\gamma = 0.096$, $t = 1.240$, $p > 0.05$), which further supports H3a. **Figure 3** shows that there is a strong positive correlation between entrepreneurs' defensive impression management strategies and the initial trust of venture capitalists when the perception of hypocrisy (M-SD) is low ($\gamma = 0.693$, $t = 8.014$, $p < 0.001$). When the perception of hypocrisy (M+SD) is high, although the entrepreneur's defensive impression management strategies also have a positive effect on the initial trust of venture capitalists, the effect is small ($\gamma = 0.482$, $t = 6.220$, $p < 0.001$). This shows that with the gradual increase in the perception of hypocrisy, the impact of entrepreneurs' defensive impression management strategies on the initial trust of venture capitalists gradually decreases. H3b is therefore verified.

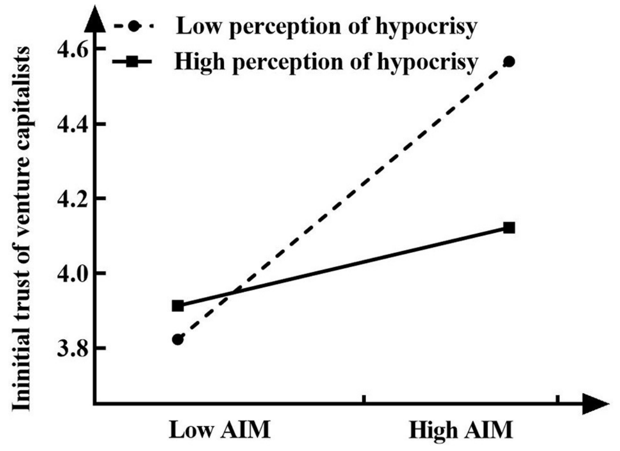

FIGURE 2 | Interactive effect of the acquired impression management strategies and perception of hypocrisy on initial trust of venture capitalists.

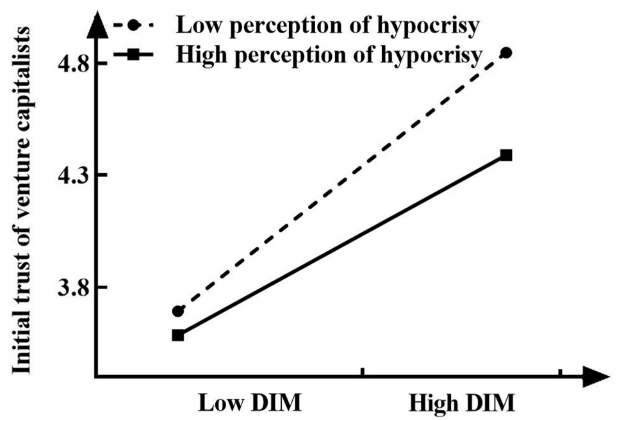

FIGURE 3 | Interactive effect of the defensive impression management strategies and perception of hypocrisy on initial trust of venture capitalists.

DISCUSSION

There are three main conclusions in our study. Firstly, entrepreneurial-oriented signals have a positive impact on the initial trust of venture capitalists. This conclusion is consistent with our expected hypothesis, which shows that entrepreneurs can gain the initial trust of venture capitalists by releasing entrepreneurial-oriented signals. Previous studies have shown that entrepreneurs can convey their potential qualities and abilities to venture capitalists through information signals at the stage of entrepreneurial presentation (Eddleston et al., 2014; Ahlers et al., 2015; Wang et al., 2021), to communicate to venture capitalists how committed they are to them through interpersonal signals (Busenitz et al., 2005), and to get along well with others (Huang and Knight, 2015). For example, Ciuchta et al. (2018) found that the entrepreneurial coachability can be used as an interpersonal signal and then affect the investment invention of potential investors. In our research, perseverance orientation as the embodiment of entrepreneurial characteristics can also be used as an interpersonal signal to influence the judgment of venture capitalists on the initial trust of entrepreneurs. In fact, our research not only confirms that adherence to entrepreneurial orientation can be used as interpersonal signals but also verifies that other entrepreneurial orientations such as passion, risk-taking, innovation, and proactivity, can also be used as signals to influence the initial trust of venture capitalists.

Second, entrepreneurs' impression management strategy plays a part of mediating role between entrepreneurial orientation and initial trust of VC. This conclusion is roughly consistent with the conclusion of Tang et al. (2020). They found that community members who pursue knowledge co-creation motivation and online social motivation tend to adopt acquired impression management behavior, while community members who pursue community identity motivation tend to adopt protective impression management behavior. This conclusion shows that individuals will adopt different impression management strategies according to their different goal-oriented motivations. Moreover, our conclusion explains the differences of previous entrepreneurs' use of impression management on resource acquisition. Previous studies have pointed out that Chinese entrepreneurs can obtain support through self-improvement strategies, that is, by showing their abilities and achievements to the audience (Baron and Tang, 2009). However, some studies have found that novice entrepreneurs who use appropriate positive language in their business plans to show their innovation and vulnerability are more likely to gain the support of investors (Parhankangas and Ehrlich, 2014). Based on the different psychological mechanisms of impression management when entrepreneurs transmit entrepreneurship-oriented signals, this study verifies the mediating roles of acquired impression management strategies and defensive impression management in different entrepreneurial orientations and initial trust of venture capitalists. Our results integrate the above differences, which not only further confirm the necessity of refining impression management strategies but also respond to the scholars' appeal to pay more attention to the differences of signal content conveyed by impression management (Yu and Chen, 2019).

Third, perception of hypocrisy negatively moderates the relationship between impression management strategies and the initial trust of VC. Specifically, the lower the VC's perception of hypocrisy on the entrepreneur, the stronger the positive impact of the entrepreneur's acquired impression management strategy and defensive impression management strategy on the initial trust of the venture capitalist, and vice versa. This indicates that when entrepreneurs convey different entrepreneurial orientation signals to venture capitalists through different impression management strategies, they should not only take into account the need to actively show themselves to venture capitalists but also reduce the concerns of venture capitalists about their own integrity and ability. Otherwise, once the venture capitalist perceives the entrepreneur to be hypocritical, his or her initial trust will be greatly reduced. As founded by Chen and Ye (2010), behavioral consistency is an important criterion for venture capitalists to assess the credibility of entrepreneurs. In addition, this conclusion is similar to the previous research conclusions. The perception of entrepreneurial behavioral consistency is positively correlated with venture capitalists' investment decisions (Yang and Li, 2018).

Theoretical Contributions

The theoretical contributions of this paper are shown in the following three main aspects. First, our study links the entrepreneurial orientation with the initial trust of venture capitalists and expands the research about the antecedent variable of the initial trust of venture capitalists. Previous studies have theoretically emphasized that the initial trust of venture capitalists on entrepreneurs before cooperation is characterized by competence, goodwill, and integrity and pointed out that this trust helps to promote the initial investment of venture capitalists, thus affecting mutual trust after investment (Wang and Dong, 2018). Although a few scholars have studied the initial trust, they mainly based on case analysis to discuss how the trust relationship between the parties evolves after cooperation, and there are few studies on the influencing factors of the initial trust before the stage of cooperation. As a supplement, based on the signal theory, this study starts from the "relationship situation before cooperation" and examines the influence of different entrepreneurial orientations on the initial trust of venture capitalists. The conclusions reveal the influence of different entrepreneurial orientations on the initial trust of venture capitalists, which not only verifies the signal function of entrepreneurial orientation but also provides a supplement for the research on individual entrepreneurial orientation and expands the antecedent variables of initial trust of venture capitalists.

Second, we propose and test the mediating role of impression management strategies between entrepreneurial orientation and initial trust and refine the legitimacy of impression management. Previous studies have mostly explained the construction of trust between venture capitalists and entrepreneurs based on the perspectives of resource conservation theory, social exchange theory, and social relationship networks, while there are relatively few studies from the perspective of impression management strategy theory. In the existing research on the role of impression management, most of the research has discussed the effects of impression management, such as how entrepreneurs use impression management to gain or maintain legitimacy, especially to resist stigma and obtain entrepreneurial well-being after failure. However, few scholars have paid attention to entrepreneurs' impression management strategies and venture capitalists' initial trust before the establishment of entrepreneurial partnerships. This study discusses and confirms that the initial trust of entrepreneurial orientation to venture capitalists is mediated by the entrepreneur's impression management strategy. The introduction of the impression management strategy not only reveals the psychological mechanism of entrepreneurial orientation as a signal to the initial trust of venture capitalists but also breaks through the phenomenon that the previous literature mainly uses resource preservation and social exchange as the formation mechanism of trust.

Third, this study explains under what conditions different impression management strategies affect the initial trust of venture capitalists. Although entrepreneurs can transmit different entrepreneurial orientation signals to venture capitalists by using impression management strategies, and they will get the initial trust of venture capitalists, but venture capitalists will not blindly trust them, which means that whether different impression management strategies can ultimately transform the initial trust of venture capitalists depends on the cognitive evaluation of venture capitalists. Previous studies have confirmed that when venture capitalists make investment decisions, the consistency of entrepreneurial behavior is an important criterion for venture capitalists to assess their credibility. In addition, previous scholars have found that the consistency of individual behavior has an impact on the decision-making of venture capitalists. However, the current research has not examined the boundary conditions of impression management and initial trust of venture capitalists. Therefore, this study extends the existing literature on the influence of impression management strategies on initial trust boundaries.

Practical Implications

The conclusions of this study provide some practical enlightenment for VC-E on how to establish the cooperative relationship of initial trust. Firstly, in the process of venture financing, entrepreneurs must improve the initial trust perception of venture capitalists. Previous studies have shown that the trust of investors can reduce the cost of transactions between the two parties, which is a generalization of fait accomplished. However, the perception of investor trusts is a keen grasp of the external investment environment of entrepreneurship, which is an ex-ante perception. Only by enhancing the initial trust of venture capitalists can we better promote the transactions and cooperation between the two parties. The different entrepreneurial orientation of entrepreneurs can be used as a signal to promote the initial trust of venture capitalists. For this reason, entrepreneurs need to actively shape their own entrepreneurial orientation in the process of starting a business. Entrepreneurs should pay more attention to the continuous changes of the external entrepreneurial environment, have the spirit of risk-taking, dare to innovate, pursue excellence, pay attention to external knowledge learning, strive to improve their business ability, deal with the difficulties in the entrepreneurial process with full entrepreneurial passion, and persevere. Only in this way can he or she describe to venture capitalists that start-ups have better development potential and positive signals of profitability.

Next, entrepreneurs should be aware of the difference between the role of impression management strategies in entrepreneurial orientation and initial trust of venture capitalists. In order to reduce the risk investment in trust, venture capitalists always need as much information as possible as decision-making basis when they evaluate the trust of entrepreneurs. In the face of fierce external market competition and high-speed market reaction demand, how to make ideal investment among potential entrepreneurs with low cost and high return needs a high initial trust. Entrepreneurs should be more rational about the driving effect of impression management strategy on the initial trust of venture capitalists. On the one hand, entrepreneurs should actively reveal their own abilities and characteristics; on the other hand, they should also pay attention to the differences in this way of expression. Only reasonable use of impression management strategy can give play to its effectiveness and avoid too low impression management or too high impression management, which causes venture capitalists to question their ability and integrity.

Finally, entrepreneurs need to maintain their own behavior consistency in order to reduce the negative impact of perception of hypocrisy. In the initial relationship, there is no empirical knowledge to distinguish the belief of the trusted party from the belief of the environment, and the cognitive consistency is particularly prominent. Faced with the asymmetry of information, when entrepreneurs deliver credible information to venture capitalists through active verbal communication and specific behaviors, they should reduce the uncertainty of this information, maintain the consistency of their own words and actions, and let venture capitalists perceive their sincerity, making them make more benevolent attributions, thereby promoting initial trust. Otherwise, the excessively high perception of hypocrisy will make the effect of the impression management strategy backfire.

Research Limitations and Future Research Directions

There are some limitations to this study. First, the research variable data sample is self-reported by venture capitalists. Although there is no serious common method deviation problem, it still exists objectively. In future research, we will consider using questionnaires from both venture capitalists and entrepreneurs for data collection. Moreover, this study analyzes the mediating effect of impression management strategies based only on impression management theory, and subsequent research can adopt other theories to further explore the mechanism. For example, future studies can combine the contextual elements of "guanxi" in China to explore the factors forming trust in entrepreneurs by venture capitalists at different stages and their impact on investment decisions. Finally, the perception of hypocrisy may not be the only boundary condition that affects the relationship between impression management strategies and the initial trust of venture capitalists. Scholars can also discuss the effectiveness of entrepreneurs in adopting acquired impression management strategies or defensive impression management strategies under specific circumstances.

CONCLUSION

Start-ups are at the disadvantage of being "new and weak;" in the early stage of entrepreneurship, the lack of resources restricts their development. How to obtain the support from external resources becomes the main problem for entrepreneurs. In the critical stage of resource acquisition, venture capitalists' initial trust in entrepreneurs plays an important role. High initial trust is conducive to rationally dealing with the emotional relationships about the two parties and to effectively promoting the financing of entrepreneurial projects. The effectiveness of trust has been extensively investigated in entrepreneurship studies. However, compared to the outcomes of trust, it is rare for previous researches to focus on the mechanisms underlying venture capitalists' initial trust in entrepreneurs. Based on signal theory and impression management theory, the study examines the influence mechanism and boundary conditions of different entrepreneurial orientations on the initial trust of venture capitalists.

The present study has investigated how different entrepreneurial orientation improves venture capitalists' initial trust through entrepreneurs' impression management strategies. We have found that entrepreneurs' perseverance orientation and passion orientation have an indirect positive effect on the initial trust of venture capitalists through the mediating effect of acquired impression management strategies, while risk-taking, innovation, and proactivity orientation are mediated by defensive impression management strategies. In addition, the perception of hypocrisy not only moderates the relationship between acquired impression management strategies and the initial trust of venture capitalists but also moderates the relationship between defensive impression management strategies and the initial trust of venture capitalists. When the venture capitalist has low perceptions of hypocrisy, the positive effect of acquired and defensive impression management strategies on the initial trust becomes strengthened. We hope this study will enhance our current knowledge on the venture capitalists' initial trust in entrepreneurs and provide some new insights.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

HY, LZ, and YW conceived and supervised the study. HY and LZ wrote the manuscript. HS analyzed the data. YW and SX improved the manuscript. All authors contributed equally to this manuscript and reviewed and approved this manuscript for publication.

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Specific Antecedents of Entrepreneurial Intention Among Newly Returned Chinese International Students

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A growing group of Chinese students is returning to China following graduation, especially young returnees. This group is seen as one of the most innovative sectors of Chinese society. Based on the theory of planned behavior (TPB) and three kinds of capital theories, this study explores entrepreneurial intention (EI) and its influencing factors among Newly Returned Chinese International Students (NRCIS). A survey of 211 NRCIS showed a low level of EI and little knowledge of supporting policies about entrepreneurship. Influencing factors included culture harmony as culture capital, overseas social networks as social capital, and foreign entrepreneurship education and foreign language proficiency as human capital. Attitude mediated the effects of foreign language proficiency, culture harmony, and foreign entrepreneurship education on EI. Perceived behavior control mediated the effect of foreign language proficiency, Chinese language proficiency, culture harmony, foreign entrepreneurship education, domestic entrepreneurship education, and overseas social networks on EI, and subjective norms have no significant mediating effect in any mediation path. Based on these findings, policymakers could pay attention to examining whether the current policies are working and accessible for NRCIS, and domestic entrepreneurship education could keep cultivating students' cross-cultural communication and understanding abilities, and society and education sectors could encourage positive cognition of entrepreneurship and guide students to form a positive attitude toward entrepreneurship and enhance their confidence.

Keywords: entrepreneurial intention, newly returned Chinese international students, bicultural identity integration, ambidextrous social network, bilingual proficiency, entrepreneurship education

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INTRODUCTION

For decades, Chinese students have been going abroad for their education, and many of them choose to stay and pursue careers overseas. However, with the rapid development of China's social economy, a growing number of returnees has been a decade-long trend. According to the National Bureau of Statistics of China, the ratio of the number of students returned back over that of who went abroad in the corresponding year has increased, from 47.34% in 2010 to 82.49% in 2019.

Figure 1 shows this increasing trend in the last 10 years. Moreover, it is noteworthy that the number of young returnees accounts for a significant proportion of returnees' total number. According to the *Report on Employment and Entrepreneurship of Chinese Returnees* (the Center for China and Globalization, 2018), more than 80% of the returnees were born between 1985 and 1995.

A series of published works discussed the trend in the context of brain gain, brain exchange, and brain circulation, as opposed to brain drain (Saxenian, 2005; Docquier and Rapoport, 2012; Giannetti et al., 2015). The Chinese government initiated support policies to encourage venture creation to unleash returnees' potential (Wang and Liu, 2016; Xia et al., 2020). However, despite the favorable policy toward returnee entrepreneurs, a survey showed that 95.2% of the young returnees in Hunan province did not enjoy any support policies for their employment and entrepreneurship, and 80.9% of the young returnees with entrepreneurial experience are funded by relatives and friends (Zhong, 2016).

Therefore, the target population of the present study is the NRCIS, specifically those who were born after 1980, underwent public or self-funded study at a formal overseas university or academic institution and successfully graduated with a bachelor's or higher degree, and have received degree certification from the Overseas Education Service Center of the Ministry of Education. They usually return to China within 3 years after graduation. It is reasonable to look at the EI and the potential predictors of this young, vital, and yet neglected group. The research questions are as follows:

1. What is their level of EI?
2. What factors affect their EI, especially factors that may be specific to them? For example, does the entrepreneurship education they received at home and abroad influence their EI in the same way?

This study contributes to the EI literature by investigating the EI of an interesting and enlarging yet uninvestigated group of people. Moreover, it can be used to improve practices in policymaking and entrepreneurship education.

The following section introduces the theory of planned behavior (TPB), a frequently used model to research EI, and three kinds of capital theories, the framework we use to analyze the characteristics of the NRCIS and find potential predictors of their EI. Next, the paper presents the study's theoretical framework and hypotheses, followed by the materials and methods used to measure the variables and collected data. In the data analysis process, we used structural equation modeling to test the hypotheses. Finally, we discuss the results and propose some implications.

Entrepreneurial Intention and the TPB

Entrepreneurial Intention (EI)

EI is the belief in planning entrepreneurial action in the future (Tsai et al., 2016). It provides a way to explain and predict entrepreneurship and has been attracting researchers' attention for decades (Krueger et al., 2000). There are numerous studies on EI that explore its predictors, which can be divided into individual internal factors such as personality (Brandstätter, 2011; Mathieu and St-Jean, 2013), and external environmental factors such as social environment (Santos et al., 2016), and some demographic factors (Díaz-García and Jiménez-Moreno, 2010). Studies also analyzed the EI of certain groups, such as university students, middle school students, farmers, and migrant workers. Predictors of EI are different across these groups; for example, entrepreneurship education is an essential predictor for students (Zhang et al., 2014) but probably not of the same significance for farmers (Khoshmaram et al., 2020) and migrant workers (Duan et al., 2020). There are few studies on EI and the predictors of NRCIS. A survey-based on 288 returnees showed that the education degree earned overseas, the business model brought from overseas, and whether the business was in the

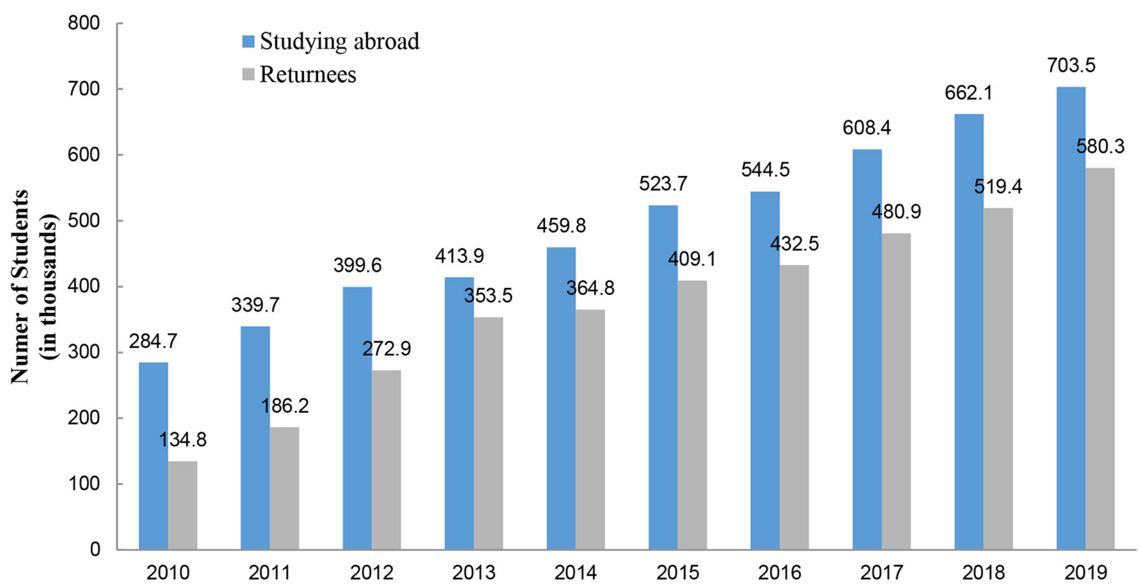

FIGURE 1 | Number of Chinese students studying abroad and returned. Source: Ministry of Education of the People's Republic of China.

secondary industry had a significant and positive relationship with returnees EI (Miao et al., 2015). Fu and Si (2018) studied the effect of second-generation returnees on family firm corporate entrepreneurship in China and found a positive relationship. The longer they stay overseas, the more likely they are to promote corporate entrepreneurship. Our study attempted to enrich the literature of NRCIS' EI and evaluate what factors contribute to their EI, including factors commonly shared by other groups and those specific for young international graduates. We first focused on the framework of TPB.

TPB

Among studies on EI, the TPB has been widely practiced (Gird and Bagraim, 2008; Maresch et al., 2016; Miranda et al., 2017). Developed from the theory of rational action, TPB holds that human behavior is the result of planning. The intention is the predictive variable of behavior, and attitude (A, refers to one's own positive or negative feelings about an act/ entrepreneurship), subjective norms (SN, refers to one's perception of others' social pressure for or against an act/entrepreneurial behaviors), and perceived behavior control (PBC, refers to individuals' cognition of the available resources and foreseeable obstacles for an act/ a start-up business) are three antecedents of intention, with other individual and environmental factors working by influencing these three factors (Ajzen, 1991, 2011). Given the pervasive application of TPB in EI research (Souitaris et al., 2007; Díaz-García and Jiménez-Moreno, 2010; Liñán et al., 2011), an empirical study used longitudinal data to investigate the effectiveness of TPB in predicting EI and subsequent entrepreneurial behavior, and the results support a model showing that A, SN, and PBC are significant predictors for EI. Subsequently, EI and PBC significantly predict entrepreneurial behavior (Kautonen et al., 2013).

Some previous studies assume that A, SN, and PBC mediate other predictors' effects on EI. Peng et al. (2012) have explored the mediating effect of entrepreneurial attitudes, subjective norm, and entrepreneurial self-efficacy between the relationship of gender, prior entrepreneurial experience, personality traits, and others, and EI of university students. Moreover, researchers have tested the mediating effect of personal attitude, perceived social norms, and perceived feasibility between the relationship of entrepreneurial knowledge and EI (Liñán et al., 2011).

Based on the literature mentioned above, the current study explores A, SN, and PBC's mediating role between the different kinds of capital and EI of NRCIS. The next section provides a brief overview of three different kinds of capital and those predictors.

Capital Theories and Characteristics of Returned International Students

Three kinds of capital theories analyze capital at the individual level, including the cultural, social, and human capital theories of representative scholars such as Coleman, Bourdieu, and Becker. Social capital, acquisition, and the utilization of social network resources emphasize the "mutual recognition and acknowledgment" of individuals through "investment in social networks"; cultural capital is the "reproduction of dominant values" which focuses on the "internalization or misrecognition of dominant values"; human capital is the "accumulation of surplus value through investment in skills and knowledge" (Lin, 1999).

Three kinds of capital theories provide perspectives to depict the characteristics of returned international students. Given that these returnees have studied in foreign countries for a considerable time, they are likely to be influenced by both the mainstream culture of their country of origin and host countries (Chen et al., 2008), which can be seen as the cultural capital. They also develop a social network in the two countries, which can be seen as social capital (Wahba and Zenou, 2012). These students primarily gain knowledge and skills through overseas education, which can be seen as human capital (Liu et al., 2010). Such capital can be useful for venture creation and potentially influence young returnees' EI.

Bicultural Identity Integration (BII)

Some refer to what we term the cultural capital of international students as biculturalism possessed by people who have been exposed to a second culture for a long time. To quantify the returned international students' attributes, we chose the variable BII, which captures the degree to which people view their dual cultural identities as compatible. High BII individuals can shift appropriately between cultures and respond in a culturally congruent way (Benet-Martínez et al., 2002). No study has explored the direct relationship between BII and EI. This study considers the merit gained from staying overseas as being that it improves the usage of cultural knowledge, psychological adjustment, sociocognitive skills, and creativity (Tadmor et al., 2009; Mok and Morris, 2010; Chen et al., 2013). These subsequently affect the returned international students' EI.

Ambidextrous Social Network (ASN)

The current study considers returnees' social capital mainly as social network resources both locally and overseas. According to Pruthi (2014), local ties and local networking are indispensable for returnee entrepreneurs to start a venture. Furthermore, overseas networks are seen as a unique advantage for returnee entrepreneurs (Qin and Estrin, 2015). ASN is a network that has both close local connections and international connections. Returnees are relatively likely to have family members, friends, classmates, tutors, and colleagues, both in their country of birth and abroad, compared with other groups. It can be a unique strength when engaged in entrepreneurial activities. Therefore, the present study includes ASN, which consists of local social networks (LSN) and overseas social networks (OSN), as a potential predictor of EI among NRCIS.

Bilingual Proficiency (BP) and Entrepreneurship Education (EE)

As for human capital, it is an increment of knowledge and skill. The overseas education experience can lead to an increase in knowledge and skills in many aspects. Considering the impact on EI, we chose BP and EE as potential predictors.

BP is proficiency in two languages: the ability and skill to use them competently. In the current research context, one of the languages is Chinese, and the other language can be any language used abroad. It is a common belief that exposure to a second language is of great use in picking up a second language. Young returnees have experienced living in environments where they use one or both languages daily. They may have better language abilities. As a cross-cultural communication tool, language ability is considered necessary for start-ups (Johnstone et al., 2018). It is reasonable that BP may increase young returnees' confidence in entrepreneurial activity. Therefore, this study examines the effect of BP on EI.

EE consists of programs, courses, workshops, contests, and other content organized by universities to help students build the skills to identify opportunities and encourage entrepreneurial activity, such as creating a new product or service, opening a company, or helping charitable organizations. Numerous universities across nations provide EE (Robinson and Haynes, 1991; Iacobucci and Micozzi, 2012; Semenov and Eremeeva, 2016), and reports often show how successful EE is in creating entrepreneurial climates, increasing entrepreneurial intentions, and building student entrepreneurs (Raposo and do Paço, 2011; Zhang et al., 2014; Maresch et al., 2016; Bergmann et al., 2018; Ni and Ye, 2018). Therefore, we examined the effect of EE on the EI of returnees. Because EE has been a global trend for decades (Kuratko, 2005), both EE received in the home country and abroad are considered.

In summary, overseas study backgrounds bring NRCIS unique cultural, social, and human capital. These capitals may have an impact on their EI. Specifically, in this study, BII represents cultural capital, ASN represents social capital, BP and EE represent students' human capital.

Theoretical Model and Hypotheses

The following theoretical framework (**Figure 2**) summarizes the research design; the study focuses on the following issues:

(a) What is the level of EI of NRCIS, and are there demographic differences?
(b) Do BII, ASN, BP, and EE influence their EI?
(c) Are A, SN, and PBC mediators of the relationship between predictors and EI in (b)?

The main hypotheses are (1) all the potential predictors listed here have a significant effect on EI, and (2) these predictors affect EI through A, SN, and PBC.

MATERIALS AND METHODS

Sample and Procedure

This study employed an online questionnaire. Because of the difficulty in recruiting large-scale participants of the target population, we adopted snowball sampling. Samples were taken by recommendation and re-recommendation, which is possible when samples are difficult to obtain (Goodman, 1961). The initial samples include friends of the researchers' acquaintances, and the following samples include friends of the initial samples.

From December 2018 to March 2019, the researchers collected 255 questionnaires. Among them, 211 were valid, making for an effective rate of 82.75%. The sample size of 211 is acceptable for the current study as it is more than the minimum sample size suggested by the rule of thumb, that is, at least 100 samples (Boomsma, 1985) and 10 cases per variable (Nunnally, 1967). **Table 1** describes the characteristics of the sample. One hundred sixty-nine participants were born in the 1990's, with the rest being born in the 1980's. The number of females (114) is slightly greater than that of males (97). Fourteen participants had entrepreneurial experience, 95 thought of it, and 102 had never considered entrepreneurial behavior. A large percentage of the participants (137) had little knowledge of the supporting policies of returnee entrepreneurship, and only 14 reported an awareness of the relevant policies. According to their knowledge

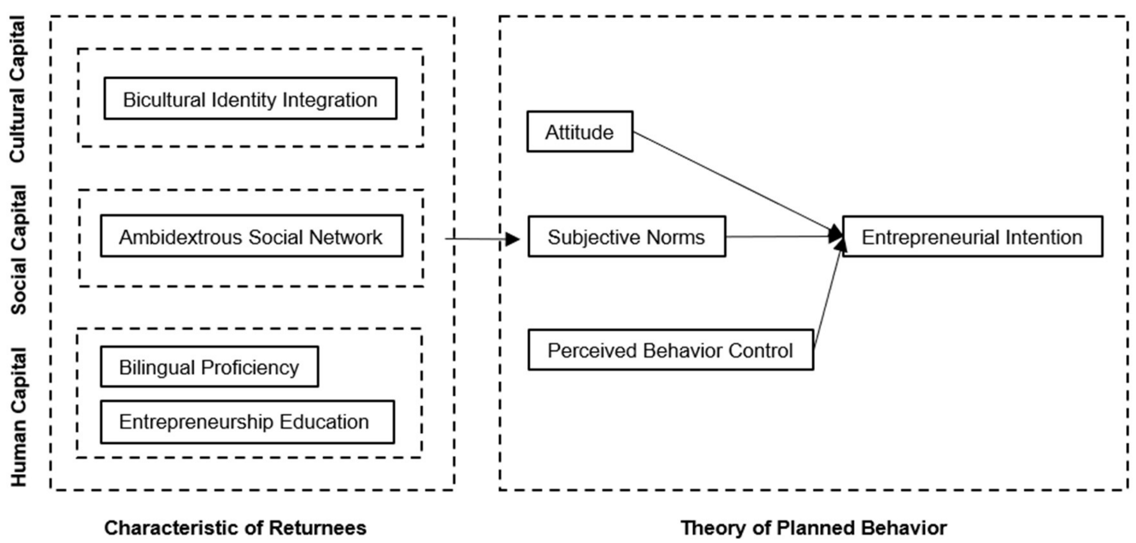

FIGURE 2 | Theoretical framework.

TABLE 1 | Descriptive statistics of the sample.

Demographic variables	Level	Frequency	Percentage
Year of birth	1980–1989	42	19.91
	1990–1999	169	80.09
Gender	Male	97	45.97
	Female	114	54.03
Family residence	City	144	68.25
	Town	43	20.38
	Countryside	24	11.37
Siblings	Zero	148	70.14
	At least one	63	29.86
Degree	BA	45	21.33
	MA	132	62.56
	PhD	34	16.11
Starting of oversea education	High school	12	5.69
	Undergraduate	65	30.81
	Master	116	54.98
	Doctor	18	8.53
Destination of oversea study	Asia	30	14.22
	Europe	91	43.13
	North America	73	34.60
	Australia	17	8.06
Major	Natural science	25	11.85
	Medical and pharmaceutical science	4	1.90
	Engineering and technology	62	29.38
	Humanities and social sciences	119	56.40
	Missing	1	0.47
Oversea intern experience	Yes	74	35.07
	No	137	64.93
Oversea work experience	Yes	26	12.32
	No	185	87.68
Entrepreneurial experience of Close family members (CFM)	Yes	78	36.97
	No	133	63.03
Entrepreneurial experience of the participant	Have never thought of	102	48.34
	Have thought of but have not taken action	84	39.81
	Have not taken action but with plan	11	5.21
	Currently in practice	8	3.79
	Used to but not currently in practice	6	2.84
Knowledge of the supporting policies (SP)	Quite lack of	77	36.49
	Somewhat lack of	60	28.44
	Average	60	28.44
	Somewhat know	12	5.69
	Quite know	2	0.95
Perceived reasonability of the supporting policies	Quite unreasonable	2	0.95
	Somewhat unreasonable	5	2.37
	Average	118	55.92

(Continued)

TABLE 1 | Continued

Demographic variables	Level	Frequency	Percentage
	Somewhat reasonable	42	19.91
	Quite reasonable	1	0.47
	Missing	43	20.38
Perceived accessibility of the supporting policies	Quite inaccessible	9	4.27
	Somewhat inaccessible	44	20.85
	Average	81	38.39
	Somewhat accessible	29	13.74
	Quite accessible	1	0.47
	Missing	47	22.27
Total		211	100

of the policies, several participants chose not to respond to the reasonability (43) and accessibility (47) of these policies. Those who responded generally tended to think that policy reasonability was average or above but that policy accessibility was average or below.

Measures

Outcome Variable

EI

The six-item EI scale developed by Liñán and Chen (2009) was translated into Chinese and cut to four items for brevity. The remaining items, such as "I have very seriously thought about starting a firm someday." "The scale was given in seven points, with "1" representing "totally disagree" and "7" representing "totally agree." Confirmatory factor analysis showed good structural validity. The fit indices of the unidimensional structure were $\chi^2/df = 1.983$, GFI = 0.991, AGFI = 0.954, NFI = 0.994, IFI = 0.997, and RMSEA = 0.068.

Predictors

BII

This study used BIIS-2 (Huynh, 2009) to measure BII. For questionnaire brevity, only six items (cultural harmony and cultural distance dimension, CH & CD) were adapted and retained, such as "I find it easy to balance both Chinese culture and the culture of the other country (cultural harmony dimension" and "I know the differences between the two cultures clearly (cultural distance dimension). "The answers were on a 5-point rating scale ranging from" "1" ("totally disagree") to "5" ("totally agree"). Confirmatory factor analysis showed good structural validity. The fit indices of the two-dimensional structure were $\chi^2/df = 1.773$, GFI = 0.980, AGFI = 0.946, NFI = 0.969, IFI = 0.986, and RMSEA = 0.061.

ASN

This study adapted the ASN scale from Yuan and Xiao (2013), which contained 12 items for local and overseas social networks; the local network includes the local business network (LBN), which includes connection with local industry alliances, sellers and other companies, and the local institutional network

(LIN), includes connections with local government, venture capital companies, and financial institutions. The overseas network includes the overseas market network (OMN), which includes connections with overseas business partners, suppliers, and customers, and the overseas technique network (OTN), which includes connections with overseas research institutes, universities, and academic staff. The answers were on a 5-point rating scale, with "1" representing that the respondent has no such connection, and "5," indicating that the respondent has many such connections. Confirmatory factor analysis showed good structural validity. The fit indices of the four-dimensional structure were $\chi^2/df = 2.568$, GFI = 0.909, AGFI = 0.851, NFI = 0.946, IFI = 0.966, and RMSEA = 0.086.

BP

We measured BP using an adapted version of the Foreign and Chinese language proficiency and usage scale (FLP & CLP) developed by Benet-Martínez and Haritatos (2005). The adapted scale had eight items measuring the use-frequency of the foreign language used in the other country and Chinese in childhood and adulthood as well as when communicating with friends and reading newspapers and magazines. The answers were on a 6-point rating scale with "1" representing "almost never" and "6" representing "very often." Confirmatory factor analysis showed good structural validity. The fit indices of the two-dimensional structure were $\chi^2/df = 1.289$, GFI = 0.973, AGFI = 0.948, NFI = 0.957, IFI = 0.990, and RMSEA = 0.037.

EE

We measured EE using the scale used by Xu et al. (2016). It contains eight items asking respondents whether they attended any course on economics, entrepreneurial theory, entrepreneurial awareness, or entrepreneurial practice in China or other countries (domestic and foreign EE, DEE & FEE). The items were answered on a 3-point rating scale where "1" represents "no," "2" represents "unclear," and "3" represents "yes." Confirmatory factor analysis showed good structural validity. The fit indices of the two-dimensional structure were $\chi^2/df = 2.539$, GFI = 0.948, AGFI = 0.901, NFI = 0.945, IFI = 0.966, and RMSEA = 0.086.

Mediators

A, SN, and PBC

The scale developed by Liñán and Chen (2009), with 14 items measuring potential mediators, was taken from TPB. A includes five items (e.g., "Being an entrepreneur would entail great satisfaction for me"), SN includes three (e.g., "If you decided to create a firm, would your close family approve of that decision?"). Furthermore, PBC includes six (e.g., "I can control the creation process of a new firm"). The answers were given on a 7-point rating scale ranging from 1 (totally disagree) to 7 (totally agree). Confirmatory factor analysis showed good structural validity. The fit indices were $\chi^2/df = 3.073$, GFI = 0.855, AGFI = 0.794, NFI = 0.910, IFI = 0.938, and RMSEA = 0.099.

Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) of Each Research Variables

According to Nunnally (1967) and Fornell and Larcker (1981), when the Cronbach's Alpha> 0.7, CR > 0.7, AVE > 0.5, it indicates that the consistency between the items is acceptable (Yang, 2016). When the CR > 0.7 and AVE > 0.5, the convergence validity of the variable is high (Yang, 2016). As shown in **Table 2**, the variables in the present study have good reliability and convergence validity.

Testing of Common Method Biases

This study mainly uses the self-report scale to collect data, and the same data collection methods may produce common method biases (Tang and Wen, 2020). Therefore, Harman's single-factor test was used to test the common method bias. Results of exploratory factor analysis showed that a total of 12 factors were exacted with eigenvalues >1 when unrotated, and the amount of variance explained by the first common factor was 25.79%, which was less than the critical value of 40%. Therefore, the current study reported no serious standard method bias.

Data Analysis

This study used SPSS20.0 and AMOS21.0 for data processing. First, we used SPSS to run the descriptive statistical analysis and test the significance of each variable's demographic differences. Second, we checked the correlation between these variables. Finally, we used AMOS and Bootstrap methods to conduct structural equation modeling (SEM) to further explore the mediating effect.

RESULTS

Descriptive and Correlational Results

Table 3 shows the descriptive and correlational results. As **Table 3** shows, NRCIS reported low scores of EI (mean = 3.70, 7-point) and PBC (mean = 3.12, 7-point), although they held a positive A (mean = 4.60, 7-point) and SN (mean = 4.97, 7-point) toward entrepreneurship. The correlational results show that EI had significant positive correlations with almost all the variables.

Demographic Differences in Each Variable

Independent *t*-test and one-way ANOVA were employed to find differences in the main variables at different levels of the demographic variables, such as gender and education (**Table 4**).

NRCIS with more entrepreneurial experiences, more knowledge of related supporting policies, and close family members with entrepreneurial experiences scored higher on EI as well as in A, SN, and PBC. Male participants scored higher in BII, EI, A, SN, and PBC. Participants with a bachelor's degree had more EE and PBC and higher EI than those with a master's or doctoral degree. Participants born in the 1990's reported more entrepreneurship education than those born in the 1980's. Participants who started overseas education as undergraduates also reported more entrepreneurship education than those who started high

TABLE 2 | Cronbach's alpha, CR, and AVE of each research variables ($N = 211$).

	EI	BII		ASN				BP		EE		TPB		
		CH	CD	LBN	LIN	OMN	OTN	FLP	CLP	DEE	FEE	A	SN	PBC
Alpha	0.93	0.82	0.79	0.88	0.88	0.90	0.91	0.81	0.79	0.81	0.84	0.93	0.83	0.94
CR	0.93	0.82	0.79	0.88	0.89	0.91	0.92	0.81	0.81	0.84	0.85	0.93	0.85	0.94
AVE	078	0.61	0.57	0.71	0.72	0.76	0.78	0.52	0.52	0.58	0.61	0.72	0.66	0.72

TABLE 3 | Mean, SD and correlations ($N = 211$).

	M	SD	1	2	3	4	5	6	7	8
1. BII	3.64	0.65	1							
2. ASN	3.58	0.84	0.33**	1						
3. BP	4.44	0.72	0.38**	0.28**	1					
4. EE	1.88	0.60	0.16*	0.09	0.10	1				
5. A	4.60	1.40	0.20**	0.28**	0.14*	0.28**	1			
6. SN	4.97	1.25	0.32**	0.32**	0.30**	0.16*	0.56**	1		
7. PBC	3.12	1.43	0.27**	0.21**	0.13	0.46**	0.58**	0.45**	1	
8. EI	3.70	1.67	0.27**	0.27**	0.19**	0.38**	0.74**	0.51**	0.75**	1

*$p < 0.05$. **$p < 0.01$.

TABLE 4 | Demographic differences in the scores for main variables.

	Gender	Degree	Major	E-experience of CFM	E-experience of the participant	Knowledge of the SP
BII	Male > female*	No difference	No difference	Y > N*	No difference	No difference
ASN	No difference	No difference	No difference	No difference	No difference	No difference
BP	No difference	No difference	Humanities and social > medical and pharmaceutical science*	Y > N*	No difference	No difference
EE	No difference	BA > Ph.D.*	Other > medicaland pharmaceutical science*	No difference	No difference	Quite lack of < average***
A	Male > female*	No difference	No difference	Y > N*	"Have never thought of" had the lowest scores	"Quite lack of" had the lowest scores
SN	Male > female*	No difference	No difference	Y > N**	"Have never thought of" had the lowest scores	"Quite lack of" had the lowest scores
PBC	Male > female**	BA > MA**, Ph.D.**	No difference	Y > N**	"Have never thought of" had the lowest scores	"Quite lack of" had the lowest scores
EI	Male > female*	BA > Ph.D.*	No difference	Y > N***	"Have never thought of" had the lowest scores	"Quite lack of" had the lowest scores

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

school. Participants with internship experience had a more pronounced bilingual proficiency. The year of birth, the year starting overseas education, and overseas internship experience are not shown in **Table 4** because they only show differences in one variable, which is not very important. Furthermore, four demographic variables, family residence, siblings, overseas study destination, and work experience are not shown in the table because they did not contribute to any differences in the key variables.

Mediating Analysis

Casual Steps Approach and Products of Coefficients are commonly used methods in mediating analysis. The coefficient product method directly tests the significance of the product of ab, so the Non-parametric Bootstrap Method (Bias-corrected), which is a method of Product of Coefficients, was used in the current study. The mediating effect of A, SN, and PBC was tested by the structural equation model. The sample number of Bootstrap was set as 5,000, and the confidence

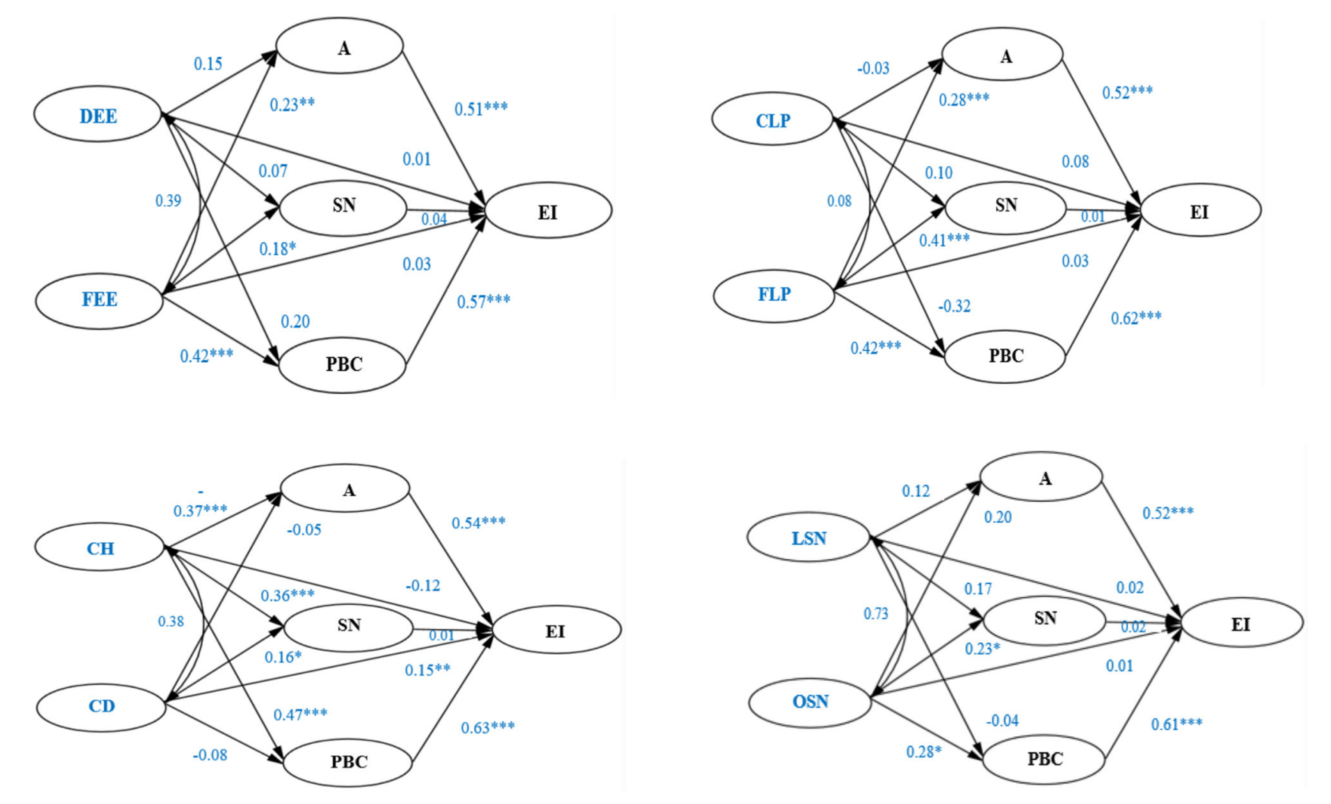

FIGURE 3 | Impact of EE, BP, BII, and ASN on EI—mediated by A, SN, and PBC. *$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

TABLE 5 | Total, direct and indirect effect of four independent variables on EI.

Effects	**EE**		**BP**		**BII**		**ASN**	
	DEE	**FEE**	**CLP**	**FLP**	**CH**	**CD**	**LSN**	**OSN**
Total effect	0.20	0.40***	−0.14	0.44**	0.38**	0.07	0.06	0.29**
Direct effect	0.01	0.03	0.08	0.03	−0.12	0.15	0.02	0.01
Indirect effect	0.20*	0.37***	−0.21*	0.41**	0.49**	−0.08	0.05	0.28*

*$p < 0.05$. **$p < 0.01$. ***$p < 0.001$.

interval (CI) was set as 95%. If 0 is excluded from the upper and lower limits of the 95% CI, the mediating effect is significant; if 0 is included, the mediating effect is not significant.

Four mediating models were constructed to test the mediating effect of A, SN, and PBC in the process of four independent variables (EE, BP, BII, and ASN) influencing dependent variables (EI). The four models are shown in **Figure 3**, and the total, direct, and indirect effects of four independent variables on EI are shown in **Table 5**.

According to **Figure 3** and **Table 5**, FEE, FLP, CH, and OSN had a significant total effect on EI, but DEE, CLP, CD, and LSN had no significant effect. Moreover, if the three mediation variables are taken as a whole, they are all significant in other paths except for the fact that the effects of CD and LSN on EI were not significantly mediated.

The estimate and significance of each mediation path are shown in **Table 6**. SN has no significant mediating effect in any mediation path.

The fit indices of four mediating models are shown in **Table 7**. According to **Table 7**, all the four mediating models are acceptable.

DISCUSSION AND IMPLICATIONS

Low Level of EI and Little Knowledge of Supporting Policies

The mean EI score in our sample was low (3.70, <4 on a seven-point scale). In contrast, Xu et al. (2016) and Ni and Ye (2018) investigated the EI of 1,034 and 730 secondary school students using the same scale and found higher scores

TABLE 6 | Estimates and significance of each mediation path.

Mediation Path	Estimate	LLCI	ULCI	*P*
EE				
FEE→ PBC→ EI	0.79	0.47	1.32	$p < 0.001$
FEE→ SN→ EI	0.03	−0.04	0.14	$P > 0.05$
FEE→ A→ EI	0.38	0.10	0.76	$p < 0.01$
DEE→ PBC→ EI	0.44	0.06	1.01	$p < 0.05$
DEE→ SN→ EI	0.01	−0.02	0.13	$P > 0.05$
DEE→ A→ EI	0.30	−0.03	0.77	$P > 0.05$
BP				
FLP→ PBC→ EI	0.33	0.16	0.60	$p < 0.001$
FLP→ SN→ EI	0.003	−0.07	0.07	$P > 0.05$
FLP→ A→ EI	0.18	0.05	0.39	$p < 0.01$
CLP→ PBC→ EI	−0.37	−0.77	−0.18	$p < 0.001$
CLP→ SN→ EI	0.001	−0.03	0.05	$P > 0.05$
CLP→ A→ EI	−0.03	−0.31	0.19	$P > 0.05$
BII				
CD→ PBC→ EI	−0.13	−1.03	0.18	$P > 0.05$
CD→ SN→ EI	0.002	−0.07	0.09	$P > 0.05$
CD→ A→ EI	−0.07	−0.89	0.26	$P > 0.05$
CH→ PBC→ EI	0.47	0.24	2.12	$p < 0.01$
CH→ SN→ EI	0.003	−0.09	0.21	$P > 0.05$
CH→ A→ EI	0.32	0.10	2.12	$p < 0.01$
ASN				
OSN→ PBC→ EI	0.26	0.01	0.57	$p < 0.05$
OSN→ SN→ EI	0.01	−0.04	0.08	$P > 0.05$
OSN→ A→ EI	0.16	−0.05	0.44	$P > 0.05$
LSN→ PBC→ EI	−0.03	−0.27	0.19	$P > 0.05$
LSN→ SN→ EI	0.01	−0.02	0.08	$P > 0.05$
LSN→ A→ EI	0.09	−0.15	0.34	$P > 0.05$

TABLE 7 | The fit dices of four mediating models.

Model	χ2/df	IFI	CFI	RMSEA
EE→ A, SN, PBC→ EI	2.48	0.91	0.90	0.08
BP→ A, SN, PBC→ EI	2.47	0.90	0.90	0.08
BII→ A, SN, PBC→ EI	2.61	0.90	0.90	0.09
ASN→ A, SN, PBC→ EI	2.70	0.89	0.89	0.09

(3.75 and 4.69), which, from their perspective, were lower than the EI of Chinese undergraduates. It is a rough comparison that requires more rigorous research to confirm whether the difference is statistically significant. Further, more efforts are needed, at least as much as the effort needed for other groups, if Chinese society wants more entrepreneurs to show up among NRCIS. These young returnees showed little knowledge of the supportive policies for entrepreneurship specially made for them by the Chinese government. Those who know some of the supportive policies reported the low accessibility of the concrete support measure. Policymakers and practitioners could consider how to make policies known to the public or target group.

Three Capital Theories as a Framework

The study found that the three kinds of capital theories are suitable theoretical bases for analyzing returned international students' characteristics. Guided by the three capitals, we specified four variables as potential predictors of EI among the target population, and the FEE, FLP, CH and OSN showed significant total effects on EI.

As for cultural capital, one dimension of BII, CH had a significant total effect on EI, although the other dimension, CD, did not. This result suggests that the more those returnees are attuned to Chinese culture and the culture abroad, the higher their EI will be. In this study, the BII measures young returnees' cultural capital due to their overseas study backgrounds. It describes the subjective feeling of compatibility or contradiction between the two cultures that they are experiencing. Existing research lacks literature on exploring and testing the relationship between being bicultural and EI from cultural identity integration. Based on a large number of studies on the benefits of being bicultural and multicultural (Benet-Martínez et al., 2002; Chen et al., 2008; Leung et al., 2008; Tadmor et al., 2009), this work proposed a positive correlation between the BII and EI of returnees, which is supported by empirical evidence.

As for social capital, the OSN of ASN had a significant effect on EI. However, the influence of LSN on EI is not significant. Previous studies have found that local ties and networking are essential for returnees to create a venture (Pruthi, 2014), and OSN is a unique advantage for returnees (Qin and Estrin, 2015). Our results proved that the impact of OSN is more significant for NRCIS than LSN. The relationship between ASN and EI is an exciting topic and worthy of further investigation.

In terms of human capital, it is unsurprising that FLP and FEE showed significant effects on EI. There are a few revelations according to these results. The positive influence of FEE confirmed the effectiveness of overseas study of entrepreneurship on EI. The influence of BP is hardly addressed in content research on EI and language ability, a neglected part in EE. Combining the impact of BII, European communities' key competencies for lifelong learning are insightful. Among the eight key competencies identified by the EU, three are "communication in the mother tongue," "communication in foreign languages," and "cultural awareness and expression" (European Communities, 2007). This study's significant predictors were overseas social networking, foreign language proficiency, and foreign entrepreneurship education; these are unique predictors for NRCIS.

TPB

The current study supported the TPB model partly. Most of the significant relationships between EI and the predictors were mediated by at least one of the three mediators proposed in TPB. To be more precise, they are mediated by A and PBC; SN has no significant mediating effect in any mediation path. The effects of A and PBC on EI were confirmed to be significant, while SN was not. These findings suggest that others' opinions and attitudes do not influence young returnees considering whether to engage in entrepreneurial activities. This conclusion is consistent with the finding of Ceresia and Mendola (2020). Some studies have shown that the three predictors of planned behavior theory have different effects on EI. Compared with subjective norms, behavioral attitude and perceived behavioral control have more significant effects on EI (Liñán et al., 2011).

Furthermore, attitude mediates the effects of FEE, CH, and FLP on EI, and PBC meditates the effects of FEE, DEE, CH, FLP, CLP, and OSN on EI. These significant mediating effects make sense as the scope of business activities has become highly connected worldwide because of globalization (Johnstone et al., 2018). Therefore, people who accept more entrepreneurship education and feel better about bicultural harmony and foreign language competence may feel more positive and confident about entrepreneurship. These results also suggest that entrepreneurship education courses and training might enable students to gain global vision and the ability to participate in international exchanges and cooperation, encouraging international entrepreneurship education, facilitating multicultural teaching resources, and recruiting teachers with an international background (Bell et al., 2004; Elenurm, 2008; Wu and Martin, 2018).

In this study, PBC mediated the effect of OSN on EI, but the LSN did not have the same effect. Compared with LSN, OSN are of more significance in predicting NRCIS' EI. As PBC reflects their confidence in entrepreneurial activities, how to help NRCIS build their OSN is a crucial aspect to consider in policymaking.

CONCLUSION

The current study contributes to the literature on EI by exploring an essential yet not much-investigated group NRCIS, introducing the three kinds of capital theories framework to analyze potential predictors, and combining planned behavior theory to explore how each of the predictors takes effect. The three kinds of capital theories contribute to perfect and supplement the diversity of the three kinds of capital and different situations of different effects. For the planned behavior theory, one of the most critical theories in the study of entrepreneurial intention is to show that SN's mediating effect is still weaker than the other two variables (A and PBC) in the NRCIS. The findings of this study suggest that overseas study has an essential effect on NRCIS' EI, which can be generalized to a certain extent.

However, for the parsimony of the model, we have not take into account the possibility of the indirect effect of SN on EI, which has been found possible by previous study (Liñán and Chen, 2009). The mediation effect of SN may be insignificant because its effect on EI is mediated by A and PBC. This is one of this study's limitations. Another limitation is the compromise of convenience samples because of the great difficulty in recruiting sufficient samples. Therefore, we would be cautious in generalizing our findings to the general population. This study is more of exploratory work. The specific antecedents that we explored add new insights to explain the core TPB model's functioning, but to the best of our knowledge, there are few prior studies that link BP, BII and ASN to EI. The interesting reulsts call for more future studies on the topic. Hopefully, future research directions can extend these findings by testing the model in other countries and regions, or by replicating the same model with new samples using better sampling strategy. Moreover, the EI of individuals tends to change over time. Bernhofer and Li (2014) investigated the EI of more than 800 students in 16 Chinese universities and found that their EI was the lowest when they graduated, while after working for 5 years, starting their own business became the top choice. Gruenhagen (2020) also found that the perception of a stable institutional environment and the support's availability might have a positive effect on returnees' EI. It is a limitation that we have not taken environment and policy as critical predictive variables. As we found that NRCIS generally were not familiar with the available entrepreneurial supporting policy and a relatively low EI, we suggest getting NRCIS to know the policies and track their EI changes.

In short, this study found that (a) the EI of NRCIS was low, and (b) CH, OSN, FEE, and FLP had a total direct effect on NRCIS' EI, and (c) FEE, CH and FLP influenced EI through A, and FLP, CLP, CH, FEE, DEE, and OSN influenced EI through PBC. Based on these results, some suggestions are carefully proposed. First, policymakers could pay greater attention to examining whether the current policies are working and accessible for NRCIS, ensure that they provide tailored policies for this young group, and ensure that they can access and understand the policies. It includes conducting specific investigations before making policy and choosing propaganda channels that reach the NRCIS. Second, domestic entrepreneurship education could keep cultivating students' cross-cultural communication and understanding abilities. Possible strategies are building entrepreneurship education platforms for exchanges and cooperation with overseas universities, using entrepreneurship education textbooks and resources with multicultural characteristics, recruiting teachers with overseas backgrounds, adopting bilingual education. Third, based on SN and PBC's significant effect on EI, society and education sectors could encourage positive cognition of entrepreneurship and guide students to form a positive attitude toward entrepreneurship and enhance their confidence.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

YM and YY contributed at all the work of the paper together, more research design work done by YY, and more essay writing work was done by YM. Both authors contributed to the article and approved the submitted version.

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