How substantive corporate social responsibility attributions promote employee work engagement: A triple mediation model

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Increasing evidences suggest that employees exhibit positive attitudinal and behavioral responses when they attribute their company's demonstrations of corporate social responsibility as substantive. However, there has been insufficient investigation into the underlying psychological processes through which substantive corporate social responsibility attributions are associated with work engagement. Based on the model of psychological conditions for engagement, we proposed that attributions of substantive CSR are positively related to work engagement *via* work meaningfulness, psychological safety, and organization-based self-esteem. We collected two-wave time-lagged questionnaire data from 503 fulltime employees in mainland China. Hierarchical regression was conducted to test hypothesized model using SPSS Process macro. Results indicated that substantive corporate social responsibility attributions positively predicted work engagement; work meaningfulness, psychological safety and organization-based self-esteem parallel mediated this relationship. The findings contribute to the literature of well-being related outcomes of corporate social responsibility attributions and help a thorough understanding of antecedents of work engagement. It expands our knowledge of the new mechanisms in the relationship between corporate social responsibility attributions and work engagement. Our findings also could shed lights on the management for employees' work engagement.

KEYWORDS

substantive corporate social responsibility attributions, work engagement, work meaningfulness, psychological safety, organization-based self-esteem

1 Introduction

The rapid economic growth is accompanied with energy consumption and environmental problems (Ren et al., 2022c; Ren et al., 2022d). Increasing environmental problems such as global warming, ozone layer destruction, and depletion, as well as acid rain pose huge challenges to the international community and even humanity (Wang et al., 2022a; Wang et al., 2022b). Meanwhile, poverty is also a

social problem that has received wide attention (Dong et al., 2021). More and more corporate stakeholders expect that companies should show corporate social responsibility (CSR) which contributes to society and the environment while achieving profitability (Farooq et al., 2017; Ren et al., 2022b). As key stakeholders, employees have the potential to support, participate in, or even lead CSR initiatives (Farooq et al., 2017).

It has been found that employees' perception of CSR can lead employees' positive outcomes, such as organizational commitment (Edwards and Kudret, 2017), organizational identification (Farooq et al., 2017), task performance (Edwards and Kudret, 2017), and organizational citizenship behavior (OCB, Rupp et al., 2013; Farooq et al., 2017; He et al., 2019). However, Manika et al. (2015) and Newman et al. (2015) found no correlation between CSR perception and OCB. It is possible that employees care more about the motivations behind enterprises' CSR initiatives than the initiatives themselves (Vlachos et al., 2017). Presumably, employees will exhibit more positive attitudinal and behavioral responses if they attribute the CSR practices to motivations that are substantive (efforts to be genuine and other-serving) rather than symbolic (efforts to comply with regulations or greenwash the company's reputation) (Donia et al., 2017; Donia et al., 2019). Prior studies explored the boundary condition played by CSR attributions in the relationship between CSR perception and employee attitudinal and behavioral outcomes (De Roeck and Delobbe, 2012; Gatignon-Turnau and Mignonac, 2015; Lee and Seo, 2017). However, as a subjective reasoning and judgment about the motives behind the enterprise's social responsibility practices, CSR attributions have a potential to impact employees directly (Donia et al., 2017). A limited number of studies have shown a facilitative effect of employees' attributions of substantive CSR on organizational pride (Donia et al., 2019), job satisfaction (Vlachos et al., 2013), and affective commitment (Raub, 2017), but largely ignoring its positive impact on employees' health and well-being (Gond et al., 2017).

Indeed, being a typical and critical form of work-related well-being, work engagement refers to a positive, fulfilling, affective-motivational state (Bakker et al., 2008; Bakker, 2009). Engaged employees are more likely to be psychologically and physically healthy, they have a higher level of energy to fulfill family roles (Eldor, 2016; Knight et al., 2017). Moreover, a meta-analytic review indicated that work engagement was positively associated with task performance (Christian et al., 2011), which can provide enterprises with a competitive advantage (Eldor, 2016). The unique value of work engagement both for employees, enterprises, and families, emphasizes the importance to identify the driving factors of work engagement. Prior studies found that task characteristics (e.g., task significance, Goštautaitė and Bučiūnienė, 2015); leadership (e.g., charismatic leadership, Babcock-Roberson and Strickland, 2010), and dispositional characteristics (e.g., conscientiousness, Furnham et al., 2002)

were positively related to work engagement. Scholars called for further investigation of its facilitative factors in addition to these above factors (Christian et al., 2011).

Accordingly, this study fills in these research gaps by empirically investigating whether substantive CSR attributions promote work engagement. We believe that substantive CSR attributions can satisfy employees' various needs (Rupp et al., 2006), which encourages employees to reciprocate with greater engagement. Moreover, it should be noted that the formation of work engagement is a complex psychological process. Kahn (1990) proposed psychological conditions for engagement model (Kahn's model) and indicated that employees could only fully experience work engagement when three psychological conditions were simultaneously presented namely psychological meaning, psychological safety, and psychological resource availability. Kahn's model helps connect a broader work environment and work engagement (Fletcher et al., 2018). According to Kahn's (1990) model, this study aims to further explore the parallel mediating effect played by work meaningfulness, psychological safety, and organization-based self-esteem (OBSE) in the relationship between substantive CSR attributions and work engagement. In line with previous research, work meaningfulness (Roberts and David, 2017; Lin et al., 2020) and psychological safety (Roberts and David, 2017; Lin et al., 2020) correspond to two of the three conditions for engagement in Kahn's (1990) model. Meanwhile, our study proposes that the third antecedent of engagement, psychological resource availability, can be represented by organization-based self-esteem. Furthermore, prior studies demonstrated that employee perceptions of CSR practices as substantive (i.e., genuine and other-serving) were positively associated with increased work meaningfulness (Donia et al., 2019) and psychological safety (Ahmad et al., 2019). In addition, working for a socially responsible enterprise can raise employees' OBSE (Hur et al., 2022). Therefore, according to Kahn's (1990) model, we believe that employees' substantive CSR attributions will give rise to the three psychological antecedents of engagement.

Taken together, this study proposes and tests a triple-mediation model in which attributions of substantive CSR are positively related to work engagement through the three parallel mediators of work meaningfulness, psychological safety and OBSE. This research is important for several reasons. First, by establishing a positive link between substantive CSR attributions and work engagement, this study contributes to the literature on attributions of substantive CSR in relation to employees' well-being and health, specifically their engagement in work. Meanwhile, it also echoes the call to further investigate the driving factors of work engagement and helps a thorough understanding of antecedents of work engagement. Second, this study introduces Kahn's (1990) model of conceptually relevant mediators of this association. It could advance our knowledge of the potential mechanisms by which substantive

CSR attributions enhance work engagement. Lastly, the present study contributes to enriching our theoretical understanding of the facilitator of psychological conditions for engagement, as well as expanding the application scope of this theoretical model. Our findings also could shed lights on the management for employees' work engagement.

2 Theoretical background and hypotheses development

2.1 The psychological conditions for engagement model

The primary tenet of Kahn's (1990) model of psychological conditions for personal engagement at work posits that the degree to which employees engage in their work depends on three psychological conditions. The first is psychological meaningfulness, which represents employees' belief that they receive sufficient returns on the time, energy, and efforts that they invest into their work. The second is psychological safety, which refers to employees' perception that it is safe to fully express themselves at work. The third is psychological resource availability, which can be viewed as employees' sense of possessing sufficient personal resources to fully invest themselves in work. Kahn (1990) further posits that there is a psychological contract between each employee and his or her work role, and the three psychological conditions reflect the logic of that contract. Employees will invest themselves into their work roles when they believe that this contract will bring desired benefits (meaningfulness) and a guarantee of protection (safety); investment also relies on the employee having the resources to fulfill this contract (Kahn, 1990).

Kahn's (1990) model provides an integrated theoretical framework to understand the psychological mechanisms of how substantive CSR attributions are translated to work engagement. Specific to this study, we propose that work meaningfulness represents the degree of meaning stemming from employees' work (Kahn, 1990), which could correspond to psychological meaningfulness (Roberts and David, 2017; Lin et al., 2020). Meanwhile, psychological safety refers to employees' belief that the presentation of genuine self at work will not negatively impact on his or her status or career (Kahn, 1990), we believe that it is consistent with psychological safety (Roberts and David, 2017; Lin et al., 2020). Moreover, we propose that psychological resource availability could be represented by organization-based self-esteem (OBSE). Resources could be defined as anything that individuals perceive as being helpful to achieving their goals, psychological resources are tools that help efficiently deal with job tasks (Halbesleben and Wheeler 2008). Self-esteem is such a typical psychological resource, because self-esteem facilitates individuals to optimize the use of contextual resources, individuals with high self-esteem tend to

start a challenging task and are more inclined to actively look for help to finish their task (Hardré, 2003; ten Brummelhuis and Bakker, 2012). Rooted on self-esteem, organization-based self-esteem (OBSE) represents employees' belief that they are important, capable, and competent individuals in their organization (Pierce and Gardner, 2004), which could be viewed as a crucial personal resource.

In addition, according to Kahn (1990), substantive CSR attributions may shape three psychological conditions, which in turn promote work engagement. These three psychological conditions are outcomes of the interaction between employees and working contexts (Kahn 1990). We rely on these three psychological conditions to develop our hypotheses. First, we will adopt the psychological meaningfulness condition to develop the hypothesis about the mediating effect of work meaningfulness. When employees attribute enterprise's CSR actions as substantive, they could integrate the enterprise's ethical policies and actions into their working experiences, and experience that they contribute to a greater purpose (Hulin, 2014). Therefore, they could bring their selves to work for a sense of meaningfulness (i.e., desired benefits). Second, we will employ the psychological safety condition to explain the mediating effect of psychological safety. By creating a safe and supportive working environment (Rupp and Mallory, 2015), substantive CSR attributions could allow employees to feel that they have a safe space (i.e., guarantee of protection) to present their true selves. Third, we will explain the mediating effect of OBSE with the psychological resources availability condition. Working for an enterprise that engaged in substantive CSR activities contributes to improved OBSE, which provides sufficient personal resources for employees to present their self in work.

2.2 Substantive CSR attributions and work engagement

Work engagement represents "a positive work-related state of fulfillment of mind" (Schaufeli et al., 2006, p. 702). We assert that work engagement may be a useful way for employees to reciprocate company's substantive CSR practices. Based on the multiple need model of organizational justice, working for a company with sincere and altruistic CSR practices could satisfy employees' instrumental, relational, and moral needs (Rupp et al., 2006). Meanwhile, according to self-determination theory, Camilleri (2021) proposed that "laudable CSR" practices might satisfy employees' needs of relatedness, competence, and autonomy. Owing to satisfaction of various needs, employees will pay back the costs of the organizations' substantive CSR investments through increased engagement with their work.

Hypothesis 1: Substantive CSR attributions are positively related to work engagement.

2.3 The mediating effect of work meaningfulness

This study believes that work meaningfulness might mediate the promoting effect of substantive CSR attributions on work engagement. Work meaningfulness refers to employees' opinions and beliefs about the importance and value stemming from their work (Rosso et al., 2010).

According to engagement theory, individuals experience meaning at work when an enterprise's ethical policies and actions are integrated into employees' working experience, thereby allowing them to express their concerns for the well-being of society (Rupp and Mallory, 2015). CSR may be an important source of the sense of work meaning (Bauman and Skitka, 2012). Everyone possesses an innate desire for contributing to a greater purpose (Hulin, 2014). Working for companies that practice substantive CSR, employees may perceive that they are also contributing to the greater good of society by being a positive influence on others (Lips-Wiersma and Morris, 2009), hence increasing the meaningfulness they gain from work. It has been argued that employees can derive energy, psychological resilience, sense of meaning, enthusiasm, and inspiration from their company's substantive CSR initiatives (Rich et al., 2010). Therefore, they are more likely to experience work meaningfulness when they attribute CSR initiatives to substantive motivations.

In line with Kahn's (1990) model, the meaning of work is a reward for work, the more meaningful the work is the more employees might believe that they will derive benefits from investing their whole selves into their work (Kahn, 1990; Lin et al., 2020). Meanwhile, work meaningfulness is also a critical aspect of intrinsic motivation of work (Bailey et al., 2019), work meaningfulness fosters employees' dedication to work and enthusiasm about work (Aryee et al., 2012). By contrast, when employees feel their job is not meaningful, they might conclude that investing their personal selves in the job will not be reciprocated by the organization (Kahn, 1990; Lin et al., 2020). Consequently, they are less likely to be engaged with their work. Supporting this, prior studies have found that work meaningfulness positively predicted work engagement (Lips-Wiersma and Morris, 2009; Bauman and Skitka, 2012).

Taken together, we argue that work meaningfulness mediates the positive effect of substantive CSR attributions on work engagement. In line with Kahn's (1990) model, work elements such as CSR are associated with meaningfulness. Substantive CSR attributions could make employees feel that they are valued and important to society. It will lead to an increased sense of meaningfulness, which in turn encourages employees to engage more in their work. Therefore, we hypothesize the following:

Hypothesis 2−1: Substantive CSR attributions are positively related to work meaningfulness.

Hypothesis 2−2: Substantive CSR attributions are positively related to work engagement through increased work meaningfulness.

2.4 The mediating effect of psychological safety

We next argue that psychological safety also mediates the positive influence of substantive CSR attributions on work engagement. Psychological safety refers to employees' belief that the presentations of genuine self at work will not negatively impact on his or her status or career (Kahn, 1990).

It has been argued that enterprises' internal or external practices help shape employees' perception of work safety (Camilleri, 2021). Specific to this study, we assume that enterprises' substantive CSR practices contribute to creating a predictable, consistent, and unambiguous work context, which helps foster psychological safety. CSR attributions provide important information for employees to evaluate the character or nature of their organization (Donia et al., 2019), as well as the work environment. When employees attribute CSR activities as substantive and worthwhile motivations, they could believe that their organizations will continue to invest in those CSR programs in the future. Stable and sustained CSR practices allow employees to more accurately predict their organizations' behavior, and further increase their certainty about the nature of their own relationship with their organizations (Rupp, 2011). In addition, when employees perceive that organizations treat external stakeholders in a fair, moral, and sincere manner, they believe that as internal stakeholders, they will also receive the same treatment and respect (Kim et al., 2021). Prior research suggested that CSR practices that were viewed as genuine and other serving were positively related to psychological safety (Ahmad et al., 2019). In summary, substantive CSR attributions lead employees to view their work environment as predictable, consistent, and clear. In this context, they may feel reassured that displaying their true selves at work will not bring any negative consequences (May et al., 2004). Collectively, substantive CSR attributions are positively related to psychological safety.

Kahn's (1990) model proposes that psychological safety could increase work engagement. Specifically, when employees experience psychological safety, they are more willing to invest themselves in work without fearing negative consequences (May et al., 2004). High psychological safety motivates employees to internalize their work roles into self-concepts, and to express their self-concepts through work (Brown and Leigh, 1996). As consequence, they will actively invest their efforts and energies in work (Amabile, 1983). In contrast, employees with low psychological safety will be less likely to invest themselves in work, because they might worry about the potential social risks resulting from unfiltered self-expression (Kahn, 1990; May et al., 2004). They may even exhibit withdrawal and self-defense

behaviors, which could be viewed as a manifestation of low engagement (Kahn, 1990; Lin et al., 2020). Furthermore, a meta-analysis revealed a significant positive association between psychological safety and work engagement (Frazier et al., 2017). Accordingly, it is reasonable to expect that psychological safety is positively associated with work engagement.

We argue that attributions of substantive CSR are positively related to psychological safety, which in turn promotes work engagement. Based on Kahn's (1990) model, a safe, predictable, and consistent social environment facilitates engagement by fostering a sense of psychological safety. In line with this model, substantive CSR attributions help employees believe that their work environment is safe, predictable, and consistent, which makes them feel that they are safe to engage their whole selves in work. Therefore, we propose the following:

Hypothesis 3–1: Substantive CSR attributions are positively related to psychological safety.

Hypothesis 3–2: Substantive CSR attributions are positively related to work engagement through increased psychological safety.

2.5 The mediating effect of organization-based self-esteem

We propose that attributions of substantive CSR could foster employees' OBSE. Employees' moral experiences in work context play an important role in the creation of self-esteem (Collier and Esteban, 2007). Companies may shape a responsible and caring corporate image by practicing CSR in a genuine manner for the well-being of society (Yan et al., 2021). Employees will incorporate this positive corporate reputation into their self-concept, thus maintaining and enhancing positive views about themselves (Paruzel et al., 2020). By comparing the organization to which they belong with other organizations, employees will experience a sense of pride and value as a member of moral organization, which helps to enhanced OBSE (Lin et al., 2012). Moreover, substantive CSR attributions could shape a relationship based on trust between employees and enterprises, employees would perceive being trusted and valued by their enterprises (De los Salmones et al., 2005), which is also beneficial to shape OBSE. Although there was no direct evidence for the positive relationship between substantive CSR attributions and OBSE, prior studies found that CSR was positively related to team self-esteem (Lin et al., 2012) or collective self-esteem (Gao et al., 2018).

According to Kahn's (1990) model, being a form of personal resources, OBSE contributes to an employee's positive experience at work, especially work engagement (Pierce et al., 1989; Xanthopoulou et al., 2009). From the resource perspective,

employees with high self-esteem will be more confident that they have sufficient psychological resources to invest themselves in their work (Kahn, 1990; May et al., 2004). A high level of mental resources can be seen as individuals' positive evaluation of their own ability to complete their work (Gao et al., 2018). Employees with high OBSE are more likely to possess feelings of self-efficacy, competence, and confidence that they can complete all of their work tasks successfully (Pierce et al., 1989). As a subjective evaluation of one's competence, OBSE provides psychological resources for employees to be more engaged with their work (Gao et al., 2018). In contrast, employees with low OBSE may perceive that they do not have sufficient psychological resources to satisfy their work demands and obligations, leading to work withdrawal behavior (Kahn, 1990; May et al., 2004). Employees' perception that they do not have sufficient psychological resources to do their job could lead to decreased engagement. Prior research found a positive association between collective self-esteem and work engagement (Gao et al., 2018), providing indirect support for our argument that OBSE could positively predict work engagement.

In summary, we assert that OBSE mediates the positive impact of substantive CSR attributions on work engagement. OBSE is a core resource that represents a response to the interaction between person and environment and plays an important role in influencing one's attitude and behavior in the workplace (Hobfoll and Freedy, 1993; Wang et al., 2020). According to Kahn's (1990) model, attributions of substantive CSR communicate to the employee that they are important, valuable, and competent members of organizations, which in turn enhances their OBSE. Subsequently, increased OBSE provides sufficient psychological resources for employees to invest themselves in work. Thus, we hypothesize the following:

Hypothesis 4–1: Substantive CSR attributions are positively related to organization-based self-esteem.

Hypothesis 4–2: Substantive CSR attributions are positively related to work engagement through increased organization-based self-esteem.

Taken together, the proposed theoretical model was shown in Figure 1.

3 Materials and methods

3.1 Participants and procedure

To minimize common method bias (Podsakoff et al., 2003), data were collected at two time points, 2 months apart, with different questionnaires at each point. Moreover, our questionnaires used different anchor point number and response format which also could restrict CMV by lessening
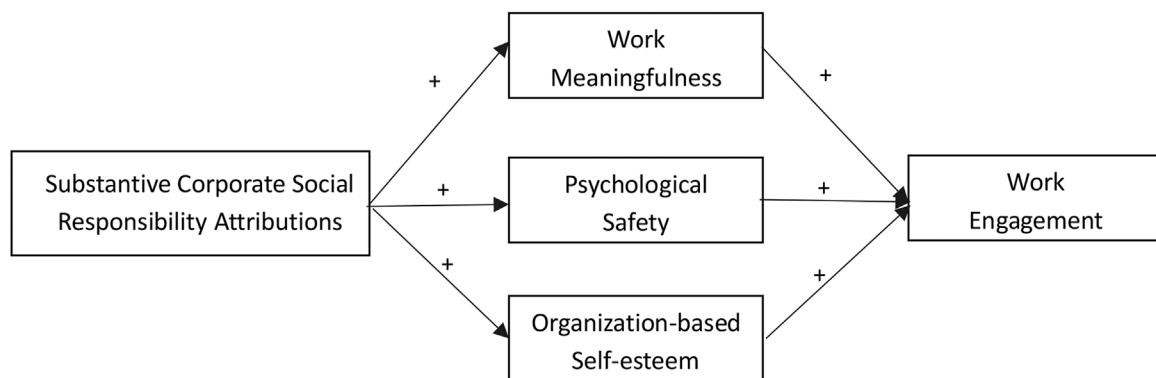
FIGURE 1 | Overview of the proposed triple mediation model.

FIGURE 1
Overview of the proposed triple mediation model.

anchoring effects. Additionally, the use of reverse-coded items in questionnaires could diminish response pattern biases, which is a useful tool to constrain CMV.

Participants were full-time employees from central and southern mainland China. They worked in various industries, including finance, manufacturing, mining and smelting, pharmaceuticals, real estate and logistics. With the permission of top management, the employees who volunteered completed the anonymous questionnaires as a group in a conference room at work. Coordinators in each company assigned a unique ID number to each participant to match the questionnaires before the first distribution of questionnaires. Once a participant was finished, they gave the completed questionnaires directly to the researchers. Participants received monetary compensation of about 10 Chinese yuan at each time point.

At the first time point, 936 employees were invited to report their demographic information, their rating of substantive CSR attributions, work meaningfulness, psychological safety, and OBSE. We received 705 valid responses (a valid response rate of 75.32%). Two months later, we distributed questionnaires concerning work engagement to employees who provided valid responses in the first survey. 503 employees returned valid questionnaires resulting in a valid response rate of 71.35%. Among the final sample consisting of 503 participants, 41.90% were female, 58.10% were male; 62.90% held a bachelor's degree or above; and 93.60% were at or below the junior management level. The average age of participants was 35.137 years ($SD = 8.180$).

3.2 Measures

As all focal variables were measured using scales originally developed in English (Detailed information of used scales

would be seen in Table 1), we translated the scales into Chinese by following translation/back translation procedures (Brislin, 1986). To be specific, two PHD students in Human Resource Management independently translated and cross-referenced to generate the first draft of scales' Chinese version. Then, one PH. D student who had studied in United Kingdom was invited to translate them back. The authors and three translators have compared the translated English version with the original version and modified the Chinese version of scales to ensure the conceptual equivalence. Finally, three MBA students revised the Chinese version and generated the final version of questionnaire.

3.2.1 Substantive CSR attributions

In line with Donia et al. (2019), substantive CSR attributions were assessed with the subscale of substantive CSR from Substantive and Symbolic Corporate Social Responsibility (CSR-SS) scale (Donia et al., 2017). This subscale consisted of eight items, and asked employee to indicate the degree to which each of the following statement explains the true motives of their organization to engage in socially responsibility activities, such as environment protection, and participation in local community affairs. This measure used a five-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The Cronbach's α of this sub-scale was. 0.854.

3.2.2 Work meaningfulness

We used the five-item scale developed by Bunderson and Thompson (2009). This measure used a seven-point Likert scale, which is ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach's α of this scale was 0.863.

TABLE 1 Measured survey items of variables.

Variable	Sub-dimension	Measured item	Sources
Substantive CSR attributions	/	1. Because it cares about what happens to the community in which it operates (both domestic and internationally, if operating globally). (SCSA1)	Donia et al. (2017)
		2. Because it cares about what happens to external actors it does business/interacts with. (SCSA2)	
		3. Because it wants to help solve problems in the community. (SCSA3)	
		4. Because it has a genuine interest in the welfare of external individuals affected by its practices (i.e. such as the local community in which it operates). (SCSA4)	
		5. Because it feels it is important to help those in need. (SCSA5)	
		6. Because it wants to help external actors it does business/interacts with in any way it can. (SCSA6)	
		7. Because it values a role of interacting with the community. (SCSA7)	
		8. Because it takes on the needs of the community and external individuals as its own. (SCSA8)	
Work meaningfulness	/	1. The work that I do is important. (WMF1)	Bunderson and Thompson (2009)
		2. I have a meaningful job. (WMF2)	
		3. The work that I do makes the world a better place. (WMF3)	
		4. What I do at work makes a difference in the world. (WMF4)	
		5. The work that I do is meaningful. (WMF5)	
Psychological safety	/	1. Members of this team are able to bring up problems and tough issues. (PYS1)	Edmondson (1999)
		2. People on this team sometimes reject others for being different. (PYS2)	
		3. It is difficult to ask other members of this team for help. (PYS3)	
		4. No one on this team would deliberately act in a way that undermines my efforts. (PYS4)	
		5. Working with members of this team, my unique skills and talents are valued and utilized. (PYS5)	
Organization-based self-esteem	/	1. I count around here. (OBSE1)	Pierce et al. (1989)
		2. I am taken seriously. (OBSE2)	
		3. I am important. (OBSE3)	
		4. There is faith in me. (OBSE4)	
		5. I can make a difference. (OBSE5)	
Work engagement	Vigor (WEG1)	1. At my work, I feel bursting with energy	Schaufei et al. (2006)
		2. At my job, I feel strong and vigorous	
		3. When I get up in the morning, I feel like going to work	
		4. I can continue working for very long periods at a time	
		5. At my job, I am very resilient, mentally	
		6. At my work, I always persevere, even when things do not go well	
	Dedication (WEG2)	7. I find the work that I do full of meaning and purpose	
		8. I am enthusiastic about my job	
		9. My job inspires me	
		10. I am proud of the work that I do	
		11. To me, my job is challenging	
	Absorption (WEG3)	12. Time flies when I am working	
		13. When I am working, I forget everything else around me	
		14. I feel happy when I am working intensely	
		15. I am immersed in my work	
		16. I get carried away when I am working	
		17. It is difficult to detach myself from my job	

3.2.3 Psychological safety

The current study assessed psychological safety with Edmondson (1999)'s scale. We selected the five items with the highest factor loadings. This measure used a five-point Likert scale (1 being *strongly disagree*, and 5 being *strongly agree*) and Cronbach's α was 0.773.

3.2.4 Organization-based self-esteem

We employed five items with the highest factor loadings from Pierce et al. (1989)'s scale to measure OBSE. This scale asked respondents to recall the information they received from leader's behavior or attitude, and then rated how much they agree or disagree with following statements. This measure used a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*) and Cronbach's α for this scale was 0.807.

3.2.5 Work engagement

The shortened version of Schaufeli et al.'s (2006) scale includes 17 items to assess three sub-dimensions of work engagement. Participants were asked to indicate how often they feel about their work in certain ways in the past 2 months. If they never had this feeling, marked "0"; if they had this feeling, marked the number (ranging from 1 to 6) that most accurately reflects the frequency. Six items measure the sub-dimension of vigor (α = 0.912). Five items assess the sub-dimension of dedication (α = 0.923). Six items measure the sub-dimension of absorption (α = 0.890). Cronbach's α in the current study was 0.966. Cronbach's α for whole scale was 0.966.

3.2.6 Control Variables

Previous studies found that age, gender, position at work, and education level influenced work engagement (Schaufeli et al., 2006; Halbesleben and Wheeler, 2008). Accordingly, we controlled for these variables to alleviate potential confounding effects of demographic variables. Gender was coded as 0 (female), and 1 (male). Age was measured in years. Position was coded as 1 (non-managerial position), 2 (junior management level), or 3 (middle management level). Education level was coded as 1 (high school degree or below), 2 (junior college/associate degree), 3 (bachelor's degree), or 4 (master's degree or above).

4 Results

4.1 Validity

Using AMOS 24.0, we conducted confirmatory factor analysis (CFA) to examine the appropriateness of our measurement model. Because scales consisting of many items may decrease the ratio of sample size to the number of estimated parameters, and may lead to variables being over-identified (Little et al., 2002), we combined items from each of the subscale of work engagement scale into parcels. Item parceling

improves the ratio of participants to parameters modeled (Little et al., 2002). Compared to using individual items, item parceling is thought to be more reliable because it could reveal a larger proportion of true-score variance (Little et al., 2013). The three parcels were made up of the items from the dedication, vigor, and absorption subscales of the work engagement measure. Specifically, we aggregated the items of each subscale by using the mean scores as a single indicator, and then set these indicators to load onto a second order factor representing work engagement.

As shown in Table 2, the five-factor model fitted the data well (χ^2 = 783.911, df = 289, CFI = 0.927, TLI = 0.918, RMSEA = 0.058). This model provided a significantly better fit than all other alternative models. Moreover, we calculated the value of standard factor loadings, composite reliability (CR) and average variance extracted (AVE) to further examine convergent validity. The values of factor loadings higher than 0.50, CR greater than 0.60 and AVE exceeding 0.50 could establish convergent validity (Fornell and Larcker, 1981). Results from Table 3 showed that all items' standard factor loadings were ranging from 0.537 to 0.962, which higher than 0.50; the value of focal variable's CR were ranging from 0.770 to 0.963, which exceeding 0.60. We found that several construct's AVE were in the range of 0.402–0.480, which not reaching 0.50. However, it has been suggested that the cutoff point of 0.50 for AVE was too strict, and convergent reliability could be established by CR alone (Malhotra, 2010). Meanwhile, Fornell and Larcker (1981) also posited that when CR value exceeding 0.60, the AVE value of corresponding construct being in the range of 0.40–0.50 was acceptable. Accordingly, the CR value of all focal constructs were greater than 0.700. Taken together, the convergent validity of constructs was acceptable. Furthermore, we found the square roots of the AVE of focal constructs were in the range of 0.634–0.947, which were greater than corresponding inter-construct correlations. Hence, in line with Fornell and Larcker (1981)'s criterion, we believe that the discriminant validity of focal constructs was satisfactory. Moreover, the ratio of HTMT (Heterotrai-monotrait) between focal variables were in the range of 0.369–0.655, which were less than the cutoff 0.85 suggested by Henseler et al. (2015) and providing further support for the establishment of discriminant validity.

4.2 Common method variance

Although we collected different questionnaire data at the two time-points, all variables were assessed by employees' self-reports. This raised the concern of common method variance (CMV). Accordingly, we conducted an unmeasured latent method construct (ULMC) analysis to detect CMV (as shown in Table 2). The difference in CFI (ΔCFI = 0.039) and NFI (ΔNFI = 0.041) between models with and without an unmeasured latent method factor was less than 0.05. These values were below the criterion that prior research has proposed

TABLE 2 Results of confirmatory factor analysis.

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA
The hypothesized five factor-model (SCSA, WMF, PYS, OBSE, WEG)	783.911	289	2.712	0.927	0.918	0.058
The four-factor model (SCSA + PYS, WMF, OBSE, WEG)	1219.711	293	4.163	0.864	0.849	0.079
The three-factor model (SCSA, WMF + PYS + OBSE, WEG)	1414.748	296	4.780	0.835	0.819	0.087
The two-factor model (SCSA + WMF + PYS + OBSE, WEG)	2125.613	298	7.133	0.731	0.707	0.111
The single factor-model (SCSA + WMF + PYS + OBSE + WEG)	3560.266	299	11.907	0.520	0.479	0.147
Common method factor model (SCSA, WMF, PYS, OBSE, WEG, ULMC)	492.228	263	1.872	0.966	0.958	0.042

Note. SCSA, substantive CSR attributions; WMF, work meaningfulness; PYS, psychological safety; OBSE, Organization-based self-esteem; WEG, work engagement; ULMC, unmeasured latent method construct.

TABLE 3 Results of validity and reliability.

Variable	Item	Factor loadings	CR	AVE	Cronbach's α
Substantive CSR attributions	SCSA1	0.616	0.858	0.431	0.854
	SCSA2	0.621			
	SCSA3	0.706			
	SCSA4	0.740			
	SCSA5	0.667			
	SCSA6	0.684			
	SCSA7	0.655			
	SCSA8	0.544			
Work meaningfulness	WMF1	0.808	0.875	0.588	0.863
	WMF2	0.899			
	WMF3	0.759			
	WMF4	0.537			
	WMF5	0.785			
Psychological safety	PSY1	0.613	0.770	0.402	0.773
	PSY2	0.618			
	PSY3	0.598			
	PSY4	0.643			
	PSY5	0.692			
Organization-based self-esteem	OBSE1	0.663	0.818	0.480	0.807
	OBSE2	0.842			
	OBSE3	0.756			
	OBSE4	0.612			
	OBSE5	0.553			
Work engagement	WEM1	0.962	0.963	0.897	0.966
	WEM2	0.951			
	WEM3	0.929			

Note. CR, composite reliability; AVE, average variance extracted.

to represent a substantial difference between models (Bagozzi and Yi, 1990; Gong et al., 2022), indicating that there was no significant difference between the fit indices of two models. Moreover, the method factor accounted for 22.98% of the total variance, which is lower than the 25% threshold value suggested in prior research (Williams et al., 1989). Taken together, these results indicated that CMV may not cause serious bias in our results.

4.3 Descriptive statistics

The means, standard deviations, and correlations of the studied variable are shown in Table 4. The correlation results of our focal variables provided initial supports for our hypotheses. More detailed information could be seen in Table 4.

TABLE 4 Means, standard deviations, and correlations of studied variables ($n = 503$).

Variable	M	SD	1	2	3	4	5	6	7	8
1. Gender	0.581	0.494								
2. Age	35.137	8.180	0.237***							
3. Position	1.610	0.605	0.165***	0.248***						
4. Education	2.581	0.781	−0.111*	−0.395***	0.067					
5. Substantive CSR attributions	3.784	0.377	−0.002	0.055	0.044	−0.012				
6. Work meaningfulness	5.142	0.853	0.111*	0.092*	0.074	−0.012	0.448***			
7. Psychological safety	4.334	0.643	−0.075	−0.054	0.026	0.022	0.355***	0.438***		
8. Organization-based self-esteem	3.256	0.529	0.133***	0.011	0.143**	0.015	0.363***	0.546***	0.448***	
9. Work engagement	4.022	1.128	0.087	0.221***	0.141**	−0.057	0.374***	0.428***	0.315***	0.357***

Note. M, mean; SD, Standard deviation.
*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

TABLE 5 Results of hierarchical regression ($n = 503$).

Variable	Work meaningfulness		Psychological safety		Organization-based self-esteem		Work engagement			
	Model 1		Model 2		Model 3		Model 4		Model 5	
	B	SE	B	SE	B	SE	B	SE	B	SE
Gender	0.171	0.071	−0.084	0.056	0.139**	0.046	0.079	0.096	0.015	0.092
Age	0.005	0.005	−0.006	0.004	−0.005	0.003	0.025	0.007	0.026***	0.006
Position	0.036	0.059	0.043	0.047	0.108**	0.038	0.137	0.080	0.092	0.076
Education	0.023	0.048	−0.010	0.038	−0.002	0.031	0.026	0.065	0.022	0.061
Substantive CSR attributions	1.009***	0.090	0.610***	0.071	0.509***	0.058	1.082***	0.121	0.555***	0.132
Work meaningfulness									0.279***	0.065
Psychological safety									0.203*	0.080
Organization-based self-esteem									0.239*	0.103
R^2	0.217***		0.136***		0.166***		0.188***		0.285***	

Note. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

4.4 Hypotheses testing

We used SPSS 26.0 to test all hypotheses. Meanwhile, to test our mediation hypotheses, we used bootstrap analysis conducted with the PROCESS macro developed by Hayes (2012) in SPSS 26.0. Hypothesis 1 proposed that substantive CSR attributions positively predicted work engagement. As presented in Table 5, when controlling for gender, age, education and position, substantive CSR attributions positively predicted work engagement (Model 4 in Table 5: $B = 1.082$, $p < 0.001$), supporting Hypothesis 1.

TABLE 6 Results of mediation effect analysis ($n = 503$).

Indirect effect	Estimate	Boot S E	95% bootstrap CI	
			Lower	Upper
SCSA→ WMF→ WEG	0.282	0.070	0.152	0.427
SCSA→ PYS→ WEG	0.124	0.051	0.033	0.235
SCSA→OBSE→ WEG	0.121	0.055	0.016	0.229

Note. SCSA, Substantive CSR attributions; WMF, work meaningfulness; PYS, psychological safety; OBSE, Organization-based self-esteem; WEG, work engagement.

Hypothesis 2 proposed that work meaningfulness mediated the positive effect of substantive CSR attributions on work engagement. Results showed there was a positive relationship between substantive CSR attributions and work meaningfulness (Model 1 in Table 5: $B = 1.009$, $p < 0.001$), supporting Hypothesis 2–1. Meanwhile, Model 5 showed a positive link between work meaningfulness and work engagement (Model 5 in Table 5: $B = 0.279$, $p < 0.001$). Moreover, Hypothesis 2–2 was also supported, because bootstrapping results shown in Table 6 indicated that substantive CSR attributions had a significant positive indirect effect on work engagement *via* increased work meaningfulness (Table 6: indirect effect = 0.282, Bootstrap SE = 0.070, 95% CI [0.152, 0.427]). Taken together, the results provided full support for Hypothesis about the mediating effect of work meaningfulness in the relationship between substantive CSR attributions and work engagement.

Hypothesis 3 proposed the mediating effect played by psychological safety in the relationship between substantive CSR attributions and work engagement. Hypothesis 3-1 was supported because substantive CSR attributions positively predicted psychological safety (Model 2 in Table 5: $B = 0.610$, $p < 0.001$). Hypothesis 3-2 was also supported, psychological safety was positively associated with work engagement (Model 5 in Table 5: $B = 0.203$, $p < 0.05$), and the bootstrapping results shown in Table 6 confirmed that substantive CSR attributions had a significant positive indirect influence on engagement through increased psychological safety (*indirect effect* = 0.124, *Bootstrap SE* = 0.051, 95% CI [0.033, 0.235]).

Hypothesis 4 was that substantive CSR attributions would be positively associated with work engagement *via* OBSE. As shown in Table 5, substantive CSR attributions were positively related to OBSE (Model 3 in Table 5: $B = 0.509$, $p < 0.001$), supporting Hypothesis 4–1. In addition, OBSE was positively connected with work engagement (Model 5 in Table 5: $B = 0.239$, $p < 0.05$), and substantive CSR attributions significantly indirectly promoted work engagement through OBSE (Table 6: indirect effect = 0.121, *Bootstrap SE* = 0.055, 95% CI [0.016, 0.229]), which supported Hypothesis 4–2. Overall, Hypothesis 4 was fully supported by these results.

5 Discussion

5.1 Theoretical contributions

The theoretical contributions of this study are three-folds. First, the present study reveals that substantive CSR attributions positively predict employees' work engagement which enriches the research of CSR attributions. Prior studies mainly identified employees' CSR attributions as a boundary condition of the impact of CSR on employees (De Roeck and Delobbe, 2012; Gatignon-Turnau and Mignonac, 2015; Lee and Seo, 2017), exploring the inducing role of CSR attributions on

employees remains insufficiently (Gond et al., 2017). Although some scholars have preliminarily investigated the facilitative effect of substantive CSR attributions on employees' organizational pride (Donia et al., 2017), affective commitment (Raub, 2017), as well as job satisfaction (Vlachos et al., 2013) which were criterion variables (Chaudhary, 2017), little was known about the relationship between substantive CSR attributions and employee's health-related constructs. Work engagement is a specific measurement indicator of psychological health (Timms et al., 2015), and also provides enterprises with a unique competitive advantage (Eldor, 2016). Our findings help confirm that CSR attributions are beneficial to create win-win situations for the well-being of employees and enterprises.

Second, based on Kahn's (1990) model, this study demonstrates the parallel mediating roles of work meaningfulness, psychological safety, and OBSE in the association between substantive CSR attributions and work engagement. Previous studies explored the direct relationship between CSR attributions and work engagement, but few have investigated the psychological mechanisms underlying this relationship (Chaudhary and Akhouri, 2018). Our study shows that the formation of work engagement is a complex psychological process wherein three psychological conditions (i.e., meaning, safety, and availability) collectively determine the extent to which employees are engaged in their work (Kahn, 1990). As a result, our findings help build a more holistic and accurate framework of the psychological mechanisms through which CSR attributions can promote employees' work engagement.

Third, by introducing Kahn's (1990) model into CSR attributions research, this study expands our knowledge about the antecedents of work engagement. Prior studies mainly found that job characteristics (e.g., task significance, Goštautaitė and Bučiūnienė, 2015); leadership (e.g., charismatic leadership, Babcock-Roberson and Strickland, 2010), and dispositional characteristics (e.g., conscientiousness, Furnham et al., 2002) were positively related to work engagement. Scholars called for further investigate the other potential promoting factors (Christian et al., 2011). In addition to these studies, this study now evidences that work engagement can be predicted by employees' perceptions that their company's CSR initiatives are motivated by genuine, altruistic concerns. Our study also helps expand the potential application of Kahn's (1990) model.

5.2 Managerial implications

The results have several potential practical implications. First, enterprises may benefit from ensuring that employees are convinced of the genuine and sincere motivations behind the CSR initiatives. Organizations could encourage employees to participate in CSR activities in order to increase their

understanding and awareness of why the enterprise engage in these CSR practices. In addition, organizations should provide timely and necessary information about their CSR practices to employees, which can help them to perceive those initiatives as substantive (Donia and Sirsly, 2016).

Second, organizations are encouraged to take measures to promote these three crucial antecedents of engagement. To be specific, the perceived meaningfulness of work can be enhanced through such practices as arranging diverse work, giving employees more authority and discretion, and providing timely performance feedback (De Roeck and Maon, 2018). To foster psychological safety, organizations may benefit from relational job design (Grant, 2007) and the construction of relational high-performance working system (Gittell and Douglass, 2012). Organizations could promote OBSE through high job complexity and autonomy design (Lapointe et al., 2011).

5.3 Limitations and future research directions

The present study also has several limitations. First, the present study employed a two-wave time-lagged design, which has certain advantages in mitigating common method bias (Podsakoff et al., 2003). However, we cannot identify the causal directions in our proposed theoretical model. Future studies could apply longitudinal or experimental design to validate the causal directions of interest.

Second, we did not examine any boundary conditions on the effect of substantive CSR attributions on work engagement. CSR attributions have been presented not to have the same effect on all employees (Donia and Sirsly, 2016). Employees with higher moral identity were shown in one study to be more sensitive to the moral cues in the workplace and more responsive to moral issues (Aquino and Reed, 2002). In line with this logic, moral identity motivates employees to feel more appreciative of substantive CSR initiatives (Donia and Sirsly, 2016). As such, we suggest that future studies investigate the boundary condition played by moral identity on the relationships explored in this study.

Third, we conducted this study in only one cultural context of high collectivist orientation which differs from the cultural setting with high individualism orientation (Hofstede, 1993). Therefore, multi-cultural investigations are recommended to examine whether the beneficial effect of substantive CSR attributions on work engagement can be generalized to another cultural context. Moreover, our respondents were limited in five industries which might also constrain the generalizability of findings, and we encourage future research to address this concern by expanding the diversity of industry.

6 Conclusion

In recent years, to address environmental and social issues, increasing enterprises have engaged in CSR activities (Dong et al., 2021; Ren et al., 2022a). As internal stakeholders, Employees are more likely to respond positively to substantive CSR practices (Donia et al., 2019). Several studies found that substantive CSR attributions could motivate positive working perception and attitude (Vlachos et al., 2013; Raub, 2017; Donia et al., 2019), however, little was known about the association between substantive CSR attributions and employees' well-being. Drawing upon Kahn's model of psychological conditions for engagement at work, the present study demonstrated a potential positive influence of employees' attributions of substantive CSR on work engagement. In addition, this positive effect was mediated by three parallel mediators, namely work meaningfulness, psychological safety, and OBSE. These findings extend the current knowledge of the effect of employees' substantive CSR attributions on their well-being and provide an integrative framework for understanding the psychological mechanisms that shape individual positive reactions to CSR practices. The results have significant practical implications for organizations and managers in enhancing employees' work engagement.

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

HG and XH contributed to conception and design of the study. AY and XH collected the data. XH performed statistical analysis. HG wrote the first draft of the manuscript. AY and XH contributed to manuscript revision and read the submitted version. All authors contributed to the article and approved the submitted version.

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Conflict of interest

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

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