Coworkers’ Entrepreneurial Performance and Employee Entrepreneurship: A Social Learning Perspective

ABSTRACT

How employee entrepreneurship spreads through interpersonal influence (interaction between coworkers and employee) in organization becomes an important issue which remained unsolved. Drawing on social learning theory, the purpose of this study is to test and verify how former coworkers’ entrepreneurial performance impact current employee entrepreneurship, what role does employee’s entrepreneurial self-efficacy play and what the role will be when it is vary in the similarity of entrepreneurial resources between coworkers and employee and employee’s risk propensity. Surveys data collected from 218 full-time employees working in China at two different time points with three-week interval. This study found that employee’s entrepreneurial self-efficacy mediated the positive relationship between coworkers’ entrepreneurial performance and employee entrepreneurship intention. And this mediating effect was exacerbated by the similarity of entrepreneurial resources and employee’s risk propensity. Moreover, a joint moderated mediation model of similarity of entrepreneurial resources and employee’s risk propensity was supported. Theoretical contributions and practical implications were discussed.

Keywords: employee entrepreneurship; entrepreneurial performance; entrepreneurial self-efficacy; interpersonal influence
Employee entrepreneurship, whereby an employee at parent firm leaves to found a new venture with growth potential that has no financial or ownership links to that firm (Agarwal, Echambadi, Franco, & Sarkar, 2004; Agarwal, Campbell, Franco, & Ganco, 2016a; Gambardella, Ganco, & Honore, 2014; Ganco, 2013), is a special situation of employee mobility (Campbell, Ganco, Franco, & Agarwal, 2012; Mawdsley & Somaya, 2016), which now more prominent relative to employee mobility to other firms (Byun, Raffiee, & Ganco, 2019). Based on the perspective of knowledge spillover, the relevant literature mainly explored the effect of national, regional, industrial, organizational and individual factors on employee entrepreneurship (Agarwal, Gambardella, & Olson, 2016b), in addition the entrepreneurial team formation and its influence to parent firm (Campbell et al., 2012; Lazar et al., 2019). However, the interpersonal influence of employee entrepreneurship was overlooked. It has been in the spotlight that numerous employees in the same firm leave their jobs one after another to start their own business (Agarwal et al., 2016a; Ganco, 2013). Possible explanation for this given by entrepreneurship literature is that coworker entrepreneurship leads to employee entrepreneurship (Bercovitz & Feldman, 2008), but it still provides no clear reason and theoretical mechanism (Young, 2009). Drawing on social learning theory, former coworkers can serve as the entrepreneurial role models for current employee (e.g. Van Auken, Stephens, Fry, & Silva, 2006; Wyrwich, Stuetzer, & Sternberg, 2016; Aschhoff & Grimpe, 2014; Stuart & Ding, 2006). However, those studies neglected that the role model effects are based on the condition that entrepreneurial role models should be successful and high-performing in entrepreneurship (Bandura & Walters, 1963; Bosma, Hessels, Schutjens, Van Praag, & Verheul, 2012), thus the social learning theory was misapplied to a large extent.

In fact, social learning theory basically assumes that individual will follow and imitate those behaviors that are often accepted or rewarded (Manz & Sims, 1981; Robinson & O’Leary-Kelly, 1998). Thus, role model effect depends on the outcome of coworker entrepreneurship, and not all
of them are high-performers in entrepreneurship (Khelil, 2016). High entrepreneurial performance signifies that coworker entrepreneurship was accepted or rewarded by the society. Coworkers with high entrepreneurial performance can easily attract focal employee’s attention and become entrepreneurial role models (Hu, He, Blettner, & Bettis, 2017), but the low-performing coworkers could be negative ones (Chen, Ding, & Li, 2016; Lerner & Malmendier, 2013). Therefore, according to social learning theory, coworkers’ high entrepreneurial performance is the key premise to trigger the interpersonal influence of employee entrepreneurship (Bandura, 1986; Young, 2009), rather than coworkers’ entrepreneurial size (Kacperczyk, 2013) or experience (Nanda & Sørensen, 2010). Furthermore, social learning theory provides a powerful explanation for the interpersonal influence mechanism of employee entrepreneurship, which indicating that employee can get entrepreneurial self-efficacy by vicarious learning from his/her coworkers (Bandura, 1977; Manz & Sims, 1981). Entrepreneurial self-efficacy refers to the strength of an individual’s belief that he or she is capable of successfully performing the roles and tasks of an entrepreneur (Chen, Greene, & Crick, 1998; Forbes, 2005). Employee acquires vicarious experience by indirectly participating coworkers’ entrepreneurial process, and it was reinforced vicariously when coworkers achieve high performance (Bosma et al., 2012; Manz & Sims, 1981). Besides, the wealth and reputation gained by those coworkers show that employee entrepreneurship is acceptable to the society and provide employee with vicarious rewards (Lerner & Malmendier, 2013). Thus, focal employee is more likely to imitate the high-performing coworkers and learns vicariously by observing them, thus gradually develop the entrepreneurial self-efficacy (Robinson & O’ Leary-Kelly, 1998). Generally, the higher the entrepreneurial performance of coworkers to achieve, the stronger the employee’s entrepreneurial self-efficacy through social learning would be (Wood & Bandura, 1989), and ultimately the more likely employee entrepreneurship would happen.
In addition, according to social learning theory, the strength of role model effect depends on the characteristics of both the role model and the observer (Bandura, 1986; Manz & Sims, 1981). On the one hand, similarities in key elements between role model and observer can strengthen observer’s self-efficacy through model-based vicarious learning (Bosma et al., 2012; Robinson & O’Leary-Kelly, 1998). On the other hand, fits between observer’s personality and observed behavior can also enhance observer’s self-efficacy (Bandura, 1977; Manz & Sims, 1981). Specifically, one of the most important elements of employee entrepreneurship is entrepreneurial resources (Marvel, Davis, & Sproul, 2016; Stam, Arzlanian, & Elfring, 2014), the similarity between departing coworkers and focal employee on entrepreneurial resources brings comparability for the focal employee. Employee who has similar entrepreneurial resources with their departing coworkers is more confident to replicate the entrepreneurial success (Bosma et al., 2012), because when employee’s entrepreneurial resources are highly similar to the successful coworkers, employees can use their coworkers’ entrepreneurial experience and information as reference point to verify the feasibility of their own entrepreneurship (Kacperczyk, 2013). Besides, on the basis of previous literature, risk propensity, as an important personality, will play a key role in strengthening social learning process of employee entrepreneurship (Zhao, Seibert, & Hills, 2005). It is well known that entrepreneurial activities are full of risk and uncertainty, which must be taken into consideration even when employee’s entrepreneurial self-efficacy is activated. Not all entrepreneurial confidence will turn out to be entrepreneurial intention, only those employees who are high in risk seeking will turn their abstract idea into concrete entrepreneurial plan (Stewart & Roth, 2001). Moreover, employees with high risk propensity are more likely to underestimate the huge risk and uncertainty, and strive to entrepreneurial success (Sitkin & Weingart, 1995). Therefore, we included the similarity of entrepreneurial resources and employee’s risk propensity as important boundary conditions in our research. In summary, the
THEORY AND HYPOTHESES

Coworkers’ entrepreneurial performance and employee entrepreneurship

Coworkers’ entrepreneurial performance is the sum of economic performance of the new venture founded by coworkers, including financial performance and growth performance (Chandler & Hanks, 1993). According to social learning theory, the interpersonal influence of coworkers’ entrepreneurial performance on employee entrepreneurship goes through attention, retention, motor reproduction and motivation process of vicarious learning sequentially (Manz & Sims, 1981). Firstly, the higher the entrepreneurial performance of departing coworkers, the easier it is to attract employee’s attention (Hu et al., 2017). Secondly, the higher the performance of companies founded by coworkers, the more the entrepreneurial behavior by coworkers is accepted by the market (Zimmerman & Zeitz, 2002). It makes entrepreneurial activity become a symbolic representation that retain in employee’s memory, and employee can repeat the whole entrepreneurial process by self-rehearsal in his/her mind. Thirdly, the high entrepreneurial performance of coworkers promotes employee’s perceived capability in entrepreneurial role (Kacperczyk, 2013) and make employee to devote more time and effort to learn and practice how to achieve the reproduction of entrepreneurship (Douglas & Shepherd, 2002; Kram & Isabella, 1985; Lee, 2019). Finally, the most important process, motivation process of vicarious learning, stressed that the more positive the behavioral consequence of role model is, the higher possibility the observer will imitate (Scherer, Adams, Carley, & Wiebe, 1989; Wood & Bandura, 1989). The conceptual model of this study is depicted in Figure 1.

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Insert Figure 1 about here.

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wealth and reputation that departing coworkers receives after starting a business is a positive vicarious reward for the focal employee (Lerner & Malmendier, 2013). Therefore, we propose the following hypothesis:

H1. Coworkers’ entrepreneurial performance is positively related to employee entrepreneurship intention.

The mediating role of employee’s entrepreneurial self-efficacy

According to social learning theory, vicarious experience and emotional arousal can influence the formation and development of employee’s entrepreneurial self-efficacy (Bandura, 1977). Employee learns vicariously from their coworkers by observing the process of achieving high entrepreneurial performance and gains vicarious experience of entrepreneurial activities (Manz & Sims, 1981), which leads to the improvement of employee’s entrepreneurial self-efficacy (Boyd & Vozikis, 1994). In addition, coworkers with high entrepreneurial performance always have entrepreneurial passion in his blood (Gielnik, Spitzmuller, Schmitt, Klemann, & Frese, 2015), this entrepreneurial passion is contagious (Barsade, 2002; Cardon, 2008). Thus, it reasonable to infer that entrepreneurial passion can spread like a cold (Foulk, Woolum, & Erez, 2016) or fire (Li, Chen, Kotha, & Fisher, 2017), which may not be just contagious in group (Guadagno, Rempala, Murphy, & Okdie, 2013; Kramer, Guillory, & Hancock, 2014). Specifically, coworkers’ passionate entrepreneurial narratives broadcast through the whole professional field and become the right words which come into employee’s heart and impress him/her, in such way that employee’s entrepreneurial passion can be aroused by observing coworkers’ entrepreneurial passion (Wuillaume, Jacquemin, & Janssen, 2019). Besides, employee also acquires entrepreneurial passion through emotional imitation processes from coworkers on his/her own initiative (Cardon, 2008; Niedenthal, 2007). Subsequently, aroused
entrepreneurial passion facilitates the improvement of employee entrepreneurial self-efficacy (Biraglia & Kadile, 2017; Cardon & Kirk, 2015).

Entrepreneurial self-efficacy is entrepreneur’s deep belief hidden behind entrepreneurial intention and action (Krueger, 2007; Krueger & Dickson, 1994). Many studies have shown that entrepreneurial self-efficacy is a robust predictor of entrepreneurial intention and behavior (e.g. Shahab, Chengang, Arbizu, & Haider, 2019; Wilson, Kickul, & Marlino, 2007; Zhao et al., 2005). Entrepreneurial self-efficacy not only determines employee’s perseverance and effort in entrepreneurship (Cardon & Kirk, 2015), but also decreases the risk perception of entrepreneurial activity (Sitkin & Weingart, 1995), thus drives employee entrepreneurship. The higher the entrepreneurial self-efficacy, the more likely the individual is to achieve the established entrepreneurial goals (Wood & Bandura, 1989; Zhao et al., 2005). As the outcome of coworkers’ entrepreneurial performance and the antecedent of employee entrepreneurship, employee’s entrepreneurial self-efficacy provides a strong theoretical explanation for the impact of coworkers’ entrepreneurial performance on employee entrepreneurship from the perspective of social learning. Therefore, we propose the following hypothesis:

\[ H2. \text{Employee’s entrepreneurial self-efficacy plays a mediating role between coworkers’ entrepreneurial performance and employee entrepreneurship intention.} \]

The moderating role of similarity of entrepreneurial resources

Entrepreneurial resources refer to entrepreneur’s own financial resources and abilities to start and operate a new venture (Huang, 2016; Wu, 2007). As is known to all, entrepreneurial resource is critical for entrepreneurship, but how many and what type of entrepreneurial resources are needed is quite vague (Marvel et al., 2016). High-performing coworkers represent an anchoring point for the employee to estimate if he/she has enough and right resources for a
promising new venture (Grossman, Yli-Renko, & Janakiraman, 2012; Yu, Umashankar, & Rao, 2016). Thus, employee tends to seek for comparative information from coworkers who have similar entrepreneurial resources in order to make self-evaluation of entrepreneurship more clearly and accurately (Kacperczyk, 2013). When employee possesses similar entrepreneurial resources with high-performing coworkers, the vicarious experience from coworkers will be more suitable and feasible for focal employee, thus the focal employee will be more confident about starting a new business (Stuart & Ding, 2006). Moreover, if an employee has similar entrepreneurial resources with the coworkers, he/she will be more aware of coworkers’ entrepreneurial passion (Lazar et al., 2019) because of the principle of similarity-attraction. High resource similarity brings employee with high level empathy in coworkers’ entrepreneurial passion, thus strengthens the emotional contagion process between coworkers and employee (Cardon, Post, & Forster, 2017). On this basis, we put forward hypothesis 3 as follows:

**H3. Similarity of entrepreneurial resources between coworkers and employee positively moderates the positive relationship between coworkers’ entrepreneurial performance and employee’s entrepreneurial self-efficacy.**

Besides, social leaning theory postulates that the vicarious learning process can be moderated by the similarity between role model and observer (Manz & Sims, 1981), and the attention and motivation process of employee’s vicarious learning are strengthened or weakened by his/her similarity of entrepreneurial resources. Drawing on similarity-attraction principle, employee’s attention is more easily attracted by coworkers with similar resources (Bosma et al., 2012). Moreover, in the circumstances of highly similar entrepreneurial resources, the vicarious rewarding effect of high entrepreneurial performance is more favorable, thereby strengthening employee’s motivation for entrepreneurship (Bandura & Walters, 1963). Thus, hypothesis 4 is put as:
**H4. Similarity of entrepreneurial resources between coworkers and employee positively moderates the mediating role of employee’s entrepreneurial self-efficacy.**

The moderating role of employee’s risk propensity

Risk propensity is defined as the tendency of a decision maker either to take or to avoid risks (Sitkin & Pablo, 1992). We view risk propensity as a stable personality trait or individual difference (Zhao et al., 2005), which is the most prominent factor in strengthening individual’s psychological process of entrepreneurship. Although high entrepreneurial self-efficacy makes employee more confident about entrepreneurship, to leave and to start a new business is still a decision with high risk. Individuals with high level entrepreneurial self-efficacy are always high in risk taking (Chen et al., 1998; Krueger & Dickson, 1994) and low in risk perception (Sitkin & Weingart, 1995) about entrepreneurial activities. If the focal employee is classified as high in risk propensity, his/her risk perception of entrepreneurship lowered by high level entrepreneurial self-efficacy will be further depressed by his/her risk propensity, therefore heighten the entrepreneurial intention of focal employee. Besides, employee with high risk propensity will put more effort, invest more time and show more perseverance in entrepreneurial task even the goal of entrepreneurship is vague and uncertain (Zhao et al., 2005). The higher the degree of employee’s risk propensity, the higher the strength of his/her entrepreneurial self-efficacy on employee entrepreneurship through goal setting and goal commitment of entrepreneurship (Stewart & Roth, 2001), thereby enhance the focal employee’s entrepreneurship intention. Based on this, hypothesis 5 is proposed as below:

**H5. Employee’s risk propensity positively moderates the positive relationship between employee’s entrepreneurial self-efficacy and employee entrepreneur intention.**

In addition, social leaning theory contends that observer’s vicarious learning process toward
role model is contingent on observer’s characteristics (Manz & Sims, 1981), and the attention and motivation process of employee’s vicarious learning are exacerbated or mitigated by his/her risk propensity. When coworkers departed the parent firm and achieved excellent entrepreneurial performance, it prefigures potential entrepreneurial opportunities for the focal employee. Employee who has high risk propensity is more attracted to entrepreneurial opportunity (March & Shapira, 1987). Moreover, employee with a high propensity to seek risks tends to weight positive entrepreneurial outcomes more heavily than negative outcomes, thus overestimating the probability of getting high entrepreneurial performance (Sitkin & Weingart, 1995). Consequently, the social learning effect is exacerbated. Therefore, we propose the following hypothesis:

\[ H6. \text{Employee’s risk propensity positively moderates the mediating role of employee’s entrepreneurial self-efficacy.} \]

By integrating the hypotheses, we further propose a joint moderated mediation hypothesis:

\[ H7. \text{Similarity of entrepreneurial resources and employee’s risk propensity jointly moderates the mediating role of employee’s entrepreneurial self-efficacy.} \]

**METHODS**

**Sample and Procedure**

The survey requires the companies of interested should have employees who leaved to create a new venture with growth potential. To ensure the recovery rate of the survey, we contacted 30 research agents in advance, all of whom were in the companies which met the above requirements. The companies are mainly located in the southeast in China where is a very representative region of current employee entrepreneurship, and they are mainly in the internet, education, service and manufacturing industry where the employees are most likely to leave to start businesses. Each agent was required to look for 10-15 coworkers or other participants who
worked in the companies of interested to fill in the survey. The respondents were employees who were familiar with the departing coworkers in the company. In the process of data collection, there were no restrictions on the success of coworker entrepreneurship, but only focus on whether they have done so. Because success and failure are not absolute dichotomy, we use high-level entrepreneurial performance to express entrepreneurial success and low-level for failure.

We conducted a two-round survey to reduce possible common method bias (CMB). According to Wo, Ambrose and Schminke (2015), a three-week interval between two time points is adopted. Items of survey are filled out by the respondents themselves, and all the respondents involved in the survey are numbered to match the data from two times. In the first round, coworkers’ entrepreneurial performance, similarity of entrepreneurial resources and employee’s entrepreneurial efficacy were collected. In the second round, we collected employee’s risk propensity and employee entrepreneurship intention. Demographic information and the number of coworker entrepreneurship collected at first round served as control variables. In the first round, 365 surveys were distributed with 342 valid surveys returned, the response rate was 93.70%. In the second round, we distributed 342 questionnaires to those who replied effectively in the first round. Finally, we got 218 effective and paired samples.

The 218 employees comprised of 109 males and 109 females, average age of employees was 31.06 years ($SD=5.77$), the majority of them (56.00%) had a bachelor degree, 20.20% held a master degree or above, 19.30% were college degree, only few of them (4.60%) were high school education or below. 40% of the respondents came from knowledge intensive industries, 24% from capital intensive industries and 36% from labor intensive industries. The median size of the companies was 200, and the average organizational tenure was around 6.7 years, 23% of them were state-owned companies; 59% were private companies; 8.3% were foreign companies; 10% were others.
Measures

All measurements adopted in this study were published on international top journals and in English initially, in order to further ensure the reliability and validity, these mature scales were dealt with back translation procedures. A 5-point Likert scale, with 1="strongly disagree" and 5="strongly agree", was used.

Coworkers’ entrepreneurial performance (Time 1). We adapted the scale with 3 items which was a frequently used instrument developed by Chandler and Hanks (1993) for measuring entrepreneurial performance. Sample item was, “Overall, the market share of the companies founded by coworkers who left the company grew rapidly”. The Cronbach’s alpha for this scale was 0.78.

Similarity of entrepreneurial resources (Time 1). The 3-item scale was adapted from Wu (2007), which was a frequently used measurement for entrepreneurial resources. Sample item was, “Before my coworkers leave their jobs for entrepreneurship, my financial capital is generally similar to him or her”. The Cronbach’s alpha for this scale was 0.78.

Employee’s entrepreneurial self-efficacy (Time 1). Liñán and Chen (2009) 6-item scale was used. Sample item was, “To start a firm and keep it working would be easy for me”. The Cronbach’s alpha for this scale was 0.91.

Employee’s risk propensity (Time 2). The 6-item scale of risk propensity developed by Zhao et al. (2005) was adapted. Sample item was, “I am willing to take significant risk if the possible rewards are high enough”. The Cronbach’s alpha for this scale was 0.82.

Employee entrepreneurship intention (Time 2). The 3-items scale was adapted from Konovsky and Copanzano’s (1991) measurement of turnover intention. Sample item was, “I often think about quitting my job at this organization and then starting my own business?”. The
Cronbach’s alpha for this scale was 0.85.

Control Variables. In order to eliminate the potential influence of demographic variables (e.g. Agarwal et al., 2016a; Wilson et al., 2007), this study took the gender, age, organizational tenure and educational level of employees as control variables. Moreover, Wood and Bandura (1989) pointed out that individual’s repetitive experience of specific behaviors can promote the imitation toward role models. Thus, the number of coworker entrepreneurship was also taken as control variable.

Data analysis

Descriptive statistics mainly used correlation analysis and reliability coefficient, structural equation model was adopted to test construct validity, and we employed multiple regression to exam the basic hypotheses. Because multiple regression was insufficient to verify the complex hypotheses, we followed the suggestion of Preacher and Hayes (2008) and used the bootstrap methods (PROCESS) to examine the moderating and moderated mediation hypotheses.

RESULTS

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) was performed to examine the validity of key variables before testing our hypotheses. We first checked the fit of a five-factor model including coworkers’ entrepreneurial performance, similarity of entrepreneurial resources, employee’s entrepreneurial self-efficacy, employee’s risk propensity and employee entrepreneurship intention. The hypothesized 5-factor model fit the data well with $\chi^2(179)=316.70$, $\chi^2/df=1.77$, RMSEA=0.06, RMR=0.06, CFI=0.93, IFI=0.94, TLI=0.92, thus the convergent validity have been proved. In addition, we also compared the full model (five factor) with other alternatives to justify the
discriminant validity. The results of model comparison were given in Table 1, which showed that the proposed model was superior to all alternative models. Hence, the discriminant validity of the four variables was supported. Therefore, the common method bias did not have a significant impact on this study.

Insert Table 1 about here.

Descriptive Statistics

Mean values, standard deviation, correlation, and reliability coefficients for the variables were presented in Table 2. As shown in the table, coworkers’ entrepreneurial performance was positively associated with employee’s entrepreneurial self-efficacy ($r=0.23$, $p<0.01$) and employee entrepreneurship intention ($r=0.18$, $p<0.01$). Moreover, employee’s entrepreneurial self-efficacy was positively related to employee entrepreneurship intention ($r=0.43$, $p<0.01$). These results provided the preliminary verification of our theoretical hypotheses.

Insert Table 2 about here.

Hypothesis Testing

We conducted multiple regression analysis to examine hypotheses 1, 2, 3 and 5, control variables were entered before other variables. The mediating effect, moderating effects and
moderated mediation hypotheses were tested by bootstrap methods.

**Main and mediating effect.** As shown in Table 3, there was a positive relationship between coworkers’ entrepreneurial performance and employee entrepreneurship intention ($\beta=0.16$, $p<0.05$, M6), hypothesis 1 was supported. Then, Model 2 given in Table 3 indicated that coworkers’ entrepreneurial performance positively predicted employee’s entrepreneurial self-efficacy ($\beta=0.22$, $p<0.01$, M2). Besides, after adding coworkers’ entrepreneurial performance and employee’s entrepreneurial self-efficacy into the model together, the influence of coworkers’ entrepreneurial performance on employee entrepreneurship intention ($\beta=0.07$, $p>0.05$, M7) became insignificant, while the influence of employee’s entrepreneurial self-efficacy on employee entrepreneurship intention ($\beta=0.40$, $p<0.01$, M7) was significant, which showing a full mediating effect of employee’s entrepreneurial self-efficacy. We further conducted bootstrapping process to offer additional verification of the mediating effect, Effect=0.13, SE=0.05, CI: [0.0363, 0.2504]; which did not include zero. Hence, hypothesis 2, mediating role of employee’s entrepreneurial self-efficacy was supported.

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Insert Table 3 about here.

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**Moderating effects.** To test the moderating effects of similarity of entrepreneurial resources and employee’s risk propensity, we executed the procedure suggested by Cohen (2013) and standardized the variables which would be formed into interaction. Results of the multiple regression shown in Table 3, the interaction between coworkers’ entrepreneurial performance and similarity of entrepreneurial resources was positively related to employee’s entrepreneurial
self-efficacy ($\beta=0.23$, $p<0.01$, M4), and the interaction between employee’s entrepreneurial self-efficacy and employee’s risk propensity was positively related to employee entrepreneurship intention ($\beta=0.16$, $p<0.01$, M8). To further describe the details about the pattern of the two moderating effects, we drawn the lines by using one standard deviation above and below the mean of moderators and calculated the slope effect, the results were shown in Figure 2 and 3. Besides, the results of bootstrap through PROCESS (Preacher & Hayes, 2008) also indicated that when similarity of entrepreneurial resources was high, coworkers’ entrepreneurial performance had a strong and positive effect on employee’s entrepreneurial self-efficacy (Effect=0.4465, $p<0.01$), however it turned into insignificant (Effect=–0.1483, n.s.) while similarity of entrepreneurial resources was low. In addition, when employee’s risk propensity was high, employee’s entrepreneurial self-efficacy had a strong and positive effect on employee entrepreneurship intention (Effect=0.5219, $p<0.01$), however it turned into insignificant (Effect=0.1693, n.s.) while employee’s risk propensity was low. The patterns were consistent with our assumption. Thus, hypothesis 3 and 5 were supported.

Insert Figure 2 and 3 about here.

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**Moderated mediating effects.** To test the moderated mediating effect of hypothesis 4, 6 and 7, we conducted moderated mediation path analysis according to Preacher and Hayes (2008) using PROCESS program. Results of data analysis was presented in Table 4. The mediating effect of employee’s entrepreneurial self-efficacy was insignificant under low level of similarity of entrepreneurial resources (Effect=–0.07, CI: [–0.2033, 0.0607]), but this effect became
significant when similarity of entrepreneurial resources was high (Effect=0.20, CI: [0.1103, 0.3208]). Therefore, the first-stage moderated mediation effect of similarity of entrepreneurial resources was supported. In addition, the mediating effect of employee’s entrepreneurial self-efficacy was significant but weak under low level of employee’s risk propensity (Effect=0.05, CI: [0.0015, 0.1320]), while this effect became much more significant when employee’s risk propensity was high (Effect=0.14, CI:[0.0461, 0.2727]). Therefore, the second-stage moderated mediation effect of employee’s risk propensity was supported. Finally, for testing the joint moderated mediation, we put the two moderators into PROCESS together, the results also showed in the table 4. When similarity of entrepreneurial resources and employee’s risk propensity were both at high level, the mediating effect of employee’s entrepreneurial self-efficacy was positively significant (Effect=0.23, CI:[0.1264, 0.3630]); but when similarity of entrepreneurial resources and employee’s risk propensity were both at low level, the mediating effect of employee’s entrepreneurial self-efficacy was insignificant (Effect=0.07, CI: [–0.0028, 0.1703]). Thus, the joint moderated mediation hypothesis was supported.

DISCUSSION

The purpose of this study is to explore the mechanism and conditions of how coworker entrepreneurship affecting employee entrepreneurship. Firstly, the results showed that the coworkers who had achieved high performance in entrepreneurship can indeed affect employee entrepreneurship. This result is consistent with previous studies on interpersonal influence in
entrepreneurial situations, but previous literature deemed that employees who leave their jobs for entrepreneurship can always achieve higher entrepreneurial performance, which failed to differentiate the interpersonal influence of higher performing coworkers in entrepreneurship from the lower ones (Nanda & Sørensen, 2010). Therefore, by focusing on the entrepreneurial performance of coworkers, this study made up for the limitations of previous literature in applying social learning theory to explain the interpersonal influence of employee entrepreneurship.

Secondly, employee’s entrepreneurial self-efficacy played a mediating role in the relationship between coworkers’ entrepreneurial performance and employee entrepreneurship intention. The existing literature in entrepreneurial situations lacked the exploration on the underlying mechanisms of interpersonal influence (Bercovitz & Feldman, 2008; Giannetti & Simonov, 2009; Kacperczyk, 2013), due to the fact that the secondary data used by former studies were not conducive to revealing the mechanisms of interpersonal influence. From the perspective of social learning, this study posited that by observing the process of achieving high entrepreneurial performance of coworkers, focal employee could acquire entrepreneurial self-efficacy, and then improves their intention of entrepreneurship, thus supplemented the underlying mechanism of interpersonal influence in entrepreneurial situations.

Furthermore, this study proposed that the similarity of entrepreneurial resources between focal employee and departing coworkers was also important for entrepreneurial activities. It is difficult to tell how many and what the configuration of resources are adequate for entrepreneurship (Stam et al., 2014), however, the departing coworkers provided an anchor and reference for the focal employee (Yu et al., 2016). Although previous literature stressed the importance of total entrepreneurial resources (Marvel et al., 2016; Stam et al., 2014), it ignores the relativity of entrepreneurial resources. As the results showed, when resource similarity was at
low level, the positive relationship of coworkers’ entrepreneurial performance on employee’s entrepreneurial self-efficacy even came into negative, which proving the importance of resource similarity.

Moreover, past researches were mainly concentrated on the direct effect of risk propensity on entrepreneurial intention (e.g. Nies & Biemann, 2014), however, risk propensity was also a key personality trait which could enhance the entrepreneurial process. While the strong relationship between entrepreneurial self-efficacy and entrepreneurial intention has been taken for granted and unconditional, we proposed that such robust relationship was contingent. High degree of risk propensity makes focal employee more aware of positive outcomes of coworkers’ entrepreneurial activities, thereby augment the effect of employee’s entrepreneurial self-efficacy on entrepreneurial intention.

**Theoretical contributions**

First, this study introduces social learning theory into the field of employee entrepreneurship, which makes up for the deficiency of theoretical rationale in the interpersonal influence of employee entrepreneurship. Although there are a few literatures have discussed the interpersonal influence in entrepreneurship research from social influence perspective, the phenomenon is far away from being fully explained in theory (Aschhoff & Grimpe, 2014; Kacperczyk, 2013). This study puts forward that social learning is a dominant perspective in the interpersonal influence of employee entrepreneurship (Young, 2009). Furthermore, we reveal the theoretical mechanism of interpersonal influence in employee entrepreneurship by drawing on the process of vicarious learning and the concept of entrepreneurial self-efficacy, which make the theoretical explanation of interpersonal influence in employee entrepreneurship much more clear and complete.

Second, this study points out that there is prerequisite for the interpersonal influence of
employee entrepreneurship, coworkers’ entrepreneurial performance rather than entrepreneurial size (Kacperczyk, 2013) or experience (Nanda & Sørensen, 2010) is the very prerequisite. By distinguishing the different effects of high and low entrepreneurial performance on the interpersonal influence, this study verifies the cause of interpersonal influence from social learning theory, and provides a new way for studying employee entrepreneurship.

Third, this study emphasizes the relativity of entrepreneurial resource. Previous literature focused on the absolute quantity of entrepreneurial resources (Marvel et al., 2016), but little on the relative quantity, quality and resource configuration. As the main reference objects in the workplace, the resource similarity between coworkers and employee provides the anchoring point for employee to understand whether employee has enough amount and right configuration of resource to create a successful new venture (Stam et al., 2014; Yu et al., 2016). Moreover, by borrowing the rationales and insights from the principle of similarity-attraction, we proposed that resources similarity makes the departing coworkers more attractive to the focal employee. Thus, this study presents a theoretical supplement for role modeling effect.

Managerial implications

This study has several implications for managerial practices. First, since employee entrepreneurship promotes the growth of regions, industries, and macroeconomies (Agarwal, Audretsch, & Sarkar, 2007), policy makers and the society can also provide a good entrepreneurial environment for employee entrepreneurship, such as tax incentives and other preferential policies, and improvement of social tolerance for entrepreneurial failure (Busenitz, Gomez, & Spencer, 2003). Second, parent firm could benefit from employee entrepreneurship (Yang, Phelps, & Steensma, 2010) or otherwise get damaged by it (Walter, Heinrichs, & Walter, 2014). Therefore, parent firm could promote the reverse transfer of knowledge from new ventures
to itself (Kim & Steensma, 2017) by hiring employees of the new ventures (Singh & Agrawal, 2011) especially those employees who used to work in the firm (Corredoira & Rosenkopf, 2010). Besides, parent firm could prevent the loss of firm resource from employee entrepreneurship (Campbell et al., 2012) and take lawsuits to protect its legitimate rights and interests (Shah, Agarwal, & Echambadi, 2019). Third, previous researches have proposed that turnover is contagious among employees (Felps et al., 2009), this study further confirms that employee entrepreneurship is also can spread from one employee to another by vicarious learning and this process may get out of control. Thus, managers should regulate the potential chain reaction of employee entrepreneurship and keep it from massive employee mobility. Differentiation management in entrepreneurial resources allocation is an effective way to mitigate the chain reaction of employee entrepreneurship. When employees own different entrepreneurial resources from each other, the social learning mechanism of the chain reaction will be blocked to a great extent. Fourth, entrepreneurs can invite the employees at parent firm as entrepreneurial partners. There are two motivations to choose entrepreneurial partners: interpersonal attraction and resource seeking (Lazar et al., 2019). The similar work experience is conducive to building good interpersonal relationships, and employees are likely to provide the entrepreneurs with complementary resources (Campbell et al., 2012; Ganco, 2013). Finally, employees should be rational to deal with entrepreneurship. Even if their coworkers get high entrepreneurial performance, they should also comprehensively evaluate the risk, potential cost and benefit of the employee entrepreneurship before making the decision.

Limitations and future research

Several limitations remain unsolved in this study and need to be improved in future studies. The first limitation is the issue of common method bias (CMB). We collected data from two
different time points, but variables were self-reported by employee and the mediator and dependent variable were collected at same time point. Those treatments gave rise to the possibility of common method bias. Future researches may try to gather paired data from both focal employee and his/her coworkers at three different time points. Second, in this study, employee rated coworkers’ entrepreneurial performance and similarity of entrepreneurial resources between coworkers and employee, the method of one-to-many measurement may result in employee’s inability to accurately answer the average entrepreneurial performance of coworkers and the similarity of entrepreneurial resources. If conditions permit, actual data should be used for the measurement of coworkers’ entrepreneurial performance instead of employee’s subjective perception with coworkers’ entrepreneurial performance. As for the measurement of similarity of entrepreneurial resources, a better way is that employee rated the similarity between each coworker and then average it. Finally, in addition to the interpersonal influence of coworker entrepreneurship on employee entrepreneurship, leader entrepreneurship is also a factor that cannot be ignored (Shapiro, Hom, Shen, & Agarwal, 2016). Future research can explore the interpersonal influence of leader entrepreneurship on employee entrepreneurship, and the difference between leader and coworker entrepreneurship on employee entrepreneurship.

Conclusions

Based on the social learning theory, this study explores how and when coworkers’ entrepreneurial performance leads to employee entrepreneurship intention. Results illustrate that coworkers’ entrepreneurial performance positively impact employee entrepreneurship intention through employee’s entrepreneurial self-efficacy, the similarity of entrepreneurial resources and employee’s risk propensity positively moderate the mediating effect of employee’s entrepreneurial self-efficacy at first and second stage respectively.
REFERENCES


Yang, H., Phelps, C., & Steensma, H. K. 2010. Learning from what others have learned from you:


**FIGURE 1**

Conceptual Model of This Study

![Conceptual Model](image-url)
FIGURE 2
The Moderating Effect of Similarity of Entrepreneurial Resources on the Relationship Between Coworkers’ Entrepreneurial Performance and Employee’s Entrepreneurial Self-Efficacy

FIGURE 3
The Moderating Effect of Employee’s Risk Propensity on the Relationship Between Employee’s Entrepreneurial Self-Efficacy and Employee Entrepreneurship Intention
Table I
Results of Confirmatory Factor Analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>RMSEA</th>
<th>RMR</th>
<th>CFI</th>
<th>IFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five-factor model</td>
<td>316.70</td>
<td>179</td>
<td>1.77</td>
<td>0.06</td>
<td>0.06</td>
<td>0.93</td>
<td>0.94</td>
<td>0.92</td>
</tr>
<tr>
<td>Four-factor model a</td>
<td>560.05</td>
<td>183</td>
<td>3.06</td>
<td>0.10</td>
<td>0.10</td>
<td>0.82</td>
<td>0.82</td>
<td>0.79</td>
</tr>
<tr>
<td>Four-factor model b</td>
<td>499.37</td>
<td>183</td>
<td>2.73</td>
<td>0.09</td>
<td>0.09</td>
<td>0.85</td>
<td>0.85</td>
<td>0.83</td>
</tr>
<tr>
<td>Four-factor model c</td>
<td>489.70</td>
<td>183</td>
<td>2.68</td>
<td>0.09</td>
<td>0.07</td>
<td>0.85</td>
<td>0.85</td>
<td>0.83</td>
</tr>
<tr>
<td>Four-factor model d</td>
<td>454.35</td>
<td>183</td>
<td>2.48</td>
<td>0.08</td>
<td>0.07</td>
<td>0.87</td>
<td>0.87</td>
<td>0.85</td>
</tr>
<tr>
<td>Four-factor model e</td>
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<td>183</td>
<td>2.76</td>
<td>0.09</td>
<td>0.07</td>
<td>0.85</td>
<td>0.85</td>
<td>0.82</td>
</tr>
<tr>
<td>One-factor model</td>
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<td>0.12</td>
<td>0.55</td>
<td>0.55</td>
<td>0.49</td>
</tr>
</tbody>
</table>

Notes: CEP=coworkers’ entrepreneurial performance; SER=similarity of entrepreneurial resources; EESE=employee’s entrepreneurial self-efficacy; ERP=employee’s risk propensity; EEI=employee entrepreneurship intention. The same as in the following table. a Combine EESE with EEI into one latent factor; b Combine CEP with SER into one latent factor; c Combine CEP with EESE into one latent factor; d Combine SER with EESE into one latent factor; e Combine ERP with EEI into one latent factor.

Table II
Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tr>
<td>1.Gender</td>
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<td>2.Age</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3.Tenure</td>
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<td>3.76</td>
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</tr>
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<td>4.Education</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.NCE</td>
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<td>.12</td>
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<td>.01</td>
<td>.01</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>6.CEP</td>
<td>3.13</td>
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<td>.11</td>
<td>.04</td>
<td>.04</td>
<td>.13</td>
<td>.07</td>
<td></td>
<td>(.78)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.SER</td>
<td>3.01</td>
<td>0.80</td>
<td></td>
<td>.04</td>
<td>.10</td>
<td>.04</td>
<td>.10</td>
<td>.13</td>
<td>.22</td>
<td>(.78)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.EESE</td>
<td>2.82</td>
<td>0.84</td>
<td></td>
<td>.03</td>
<td>.04</td>
<td>.06</td>
<td>.03</td>
<td>.16</td>
<td>.23</td>
<td>.40</td>
<td>(.91)</td>
<td></td>
</tr>
<tr>
<td>9.ERP</td>
<td>3.32</td>
<td>0.68</td>
<td></td>
<td>.12</td>
<td>.12</td>
<td>.14</td>
<td>.03</td>
<td>.03</td>
<td>.21</td>
<td>.18</td>
<td>.34</td>
<td>(.82)</td>
</tr>
<tr>
<td>10.EEI</td>
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<td></td>
<td>.00</td>
<td>.16</td>
<td>.09</td>
<td>.04</td>
<td>.19</td>
<td>.18</td>
<td>.16</td>
<td>.43</td>
<td>(.85)</td>
</tr>
</tbody>
</table>

Notes: n=218. SD=standard deviation. **p < 0.01, *p < 0.05. Cronbach’s alpha in italics. Gender: 1= male, 2= female. Education: 1= high school educational level, 2= college degree, 3= bachelor degree, 4= postgraduate and above. NCE= number of coworker entrepreneurship. The same as in the following table.
### Table 3
Results of Regression

<table>
<thead>
<tr>
<th>Control variables</th>
<th>EESE</th>
<th>EEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>M1</td>
<td>M6</td>
</tr>
<tr>
<td></td>
<td>M2</td>
<td>M7</td>
</tr>
<tr>
<td></td>
<td>M3</td>
<td>M8</td>
</tr>
<tr>
<td></td>
<td>M4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M8</td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>0.01</td>
<td>0.07</td>
</tr>
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<tr>
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<td>0.07</td>
</tr>
<tr>
<td></td>
<td>-0.08</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>-0.18*</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>-0.16</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>-0.17*</td>
<td>-0.00</td>
</tr>
<tr>
<td></td>
<td>-0.15*</td>
<td>0.05</td>
</tr>
<tr>
<td>Tenure</td>
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<td>0.07</td>
</tr>
<tr>
<td></td>
<td>0.05</td>
<td>0.11</td>
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<tr>
<td></td>
<td>0.11</td>
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<tr>
<td></td>
<td>0.04</td>
<td>0.02</td>
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<tr>
<td></td>
<td>0.02</td>
<td>-0.00</td>
</tr>
<tr>
<td></td>
<td>0.05</td>
<td></td>
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<tr>
<td>Education</td>
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<td>-0.02</td>
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<tr>
<td></td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>-0.04</td>
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<td></td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>0.04</td>
<td>0.04</td>
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<tr>
<td></td>
<td>0.02</td>
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</tr>
<tr>
<td>NCE</td>
<td>0.16*</td>
<td>0.14*</td>
</tr>
<tr>
<td></td>
<td>0.11</td>
<td>0.13*</td>
</tr>
<tr>
<td></td>
<td>0.13*</td>
<td>0.20**</td>
</tr>
<tr>
<td></td>
<td>0.18**</td>
<td>0.13*</td>
</tr>
<tr>
<td></td>
<td>0.15*</td>
<td></td>
</tr>
<tr>
<td>Independent variable</td>
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</tr>
<tr>
<td>CEP</td>
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<td>0.13*</td>
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<tr>
<td></td>
<td>0.11</td>
<td>0.16*</td>
</tr>
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<td>0.07</td>
<td>0.01</td>
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<tr>
<td>Mediation</td>
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<tr>
<td>EESE</td>
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<td>0.31**</td>
</tr>
<tr>
<td>Moderators</td>
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</tr>
<tr>
<td>SER</td>
<td>0.36**</td>
<td>0.35**</td>
</tr>
<tr>
<td></td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td>ERP</td>
<td></td>
<td>0.29**</td>
</tr>
<tr>
<td>Interaction</td>
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<td></td>
</tr>
<tr>
<td>CEP × SER</td>
<td>0.23**</td>
<td></td>
</tr>
<tr>
<td>EESE × ERP</td>
<td></td>
<td>0.16**</td>
</tr>
</tbody>
</table>

**Notes:**
n=218; ** * p < 0.01; * p < 0.05.

### Table 4
Moderated Mediation Test Results and Confidence Interval in Low and High Level of Moderators by the Bootstrap

<table>
<thead>
<tr>
<th>Model</th>
<th>SER</th>
<th>ERP</th>
<th>Conditional indirect effect</th>
<th>Boot SE</th>
<th>Boot LLCI</th>
<th>Boot ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>2.21</td>
<td>3.81</td>
<td>-0.07</td>
<td>0.07</td>
<td>-0.2033</td>
<td>0.0607</td>
</tr>
<tr>
<td></td>
<td>2.63</td>
<td></td>
<td>0.20*</td>
<td>0.05</td>
<td>0.1103</td>
<td>0.3208</td>
</tr>
<tr>
<td>Model 2</td>
<td>2.63</td>
<td>4.00</td>
<td>0.05</td>
<td>0.03</td>
<td>0.0015</td>
<td>0.1320</td>
</tr>
<tr>
<td></td>
<td>4.00</td>
<td></td>
<td>0.14*</td>
<td>0.06</td>
<td>0.0461</td>
<td>0.2727</td>
</tr>
<tr>
<td>Full model</td>
<td>2.21</td>
<td>2.63</td>
<td>-0.02</td>
<td>0.03</td>
<td>-0.1096</td>
<td>0.0114</td>
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<td>4.00</td>
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<td>0.07</td>
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</tr>
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<td>3.81</td>
<td>4.00</td>
<td>0.23*</td>
<td>0.06</td>
<td>0.1264</td>
<td>0.3630</td>
</tr>
</tbody>
</table>

**Notes:**
n=218; * p < 0.05.