

The moderating effect of career stage on the relationship between job embeddedness and innovation-related behaviour (IRB)

Evidence from China

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Job
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Abstract

Purpose – The purpose of this paper is to re-examine the moderating effect of career stage on the relationship between job embeddedness and innovation-related behaviour (IRB).

Design/methodology/approach – Data were collected from a sample of 310 Chinese media organisation employees and were analysed using moderated structural equation modelling.

Findings – Career stage significantly moderated the relationship between job embeddedness and IRB; individuals who experienced high job embeddedness in their early career stage were found to be engaged in more IRBs than those who experienced low job embeddedness in their early career stage. Moreover, the author also found that individuals who experienced high job embeddedness at mid-late career stages were less engaged in IRB, as compared to those at earlier career stages.

Research limitations/implications – These findings contribute to the understanding of the relationship between employee job embeddedness and IRB at different career stages. The findings are limited by the cross-sectional nature of the data.

Originality/value – This study demonstrates that individuals at a mid-late career stage may define their work roles differently to those at an early career stage. Employers often expect individuals in the mid-late career stage to facilitate the work of others and to assist junior colleagues in their professional growth (Super *et al.*, 1996).

Keywords China, Career stage, Job embeddedness, Innovation-related behaviour

Paper type Research paper

Introduction

In today's competitive milieu, the success of any organisation is largely dependent upon its employees (Rafiq *et al.*, 2019; Chin *et al.*, 2016). This confers a benefit to employees. Yet, employees also face many challenges. Workplace demands are evolving quickly as the marketplace becomes more globally competitive than ever before. There is an increasing focus on cultivating and utilising employee skills and expertise in order to generate better organisational performance (Darcy *et al.*, 2012). In a similar vein, management researchers have long been interested in understanding why people choose to participate in an organisation, what motivates them to perform and why they decide to stay (Sekiguchi *et al.*, 2008). From this perspective, a new construct, termed job embeddedness, or the degree to which individuals are embedded in their current job or organisation, has been proposed to provide a new means to understand “why people stay” (Mitchell *et al.*, 2001; Lee *et al.*, 2004). Recently, Ng and Feldman (2010) reported that job embeddedness is positively related to innovation-related behaviour (IRB).

This study re-examines and extends the findings of Ng and Feldman (2010) by examining the relationship between job embeddedness and IRB, and how it varies across different career stages. Ng and Feldman (2010) argued that IRB is only significantly linked



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with mid-late career stages. In contrast, based on the literature, I hypothesise that under some (certain) specific (innovation-related organisations) conditions, the early career stage may also be strongly linked with IRB. Consistent with this, researchers have long recognised that the attitudes and behaviours of individuals vary at different career stages and in different organisational settings (Slocum and Cron, 1985; Darcy *et al.*, 2012).

In order to evaluate new theories and models, it is important to have a clear understanding of the literature. Our proposed model suggests that major shifts in career stages are differentially related to behaviour in differing organisational settings. There is a scarcity of literature where a specific organisational setting/goal (such as a setting where the primary focus is innovation) is investigated as a primary factor in the model. To fill this gap in the literature, I examined the relationship between job embeddedness and IRB in a collectivist (Chinese) cultural context. Specifically, I assessed the moderating role of career stage (early and mid-late stages) on the relationship between job embeddedness and IRB. The proposed model is also explicitly distinguished from the previous model that informed the development of the current model. In this paper, the proposed model is examined in detail and the potential implications of this model for future research are discussed.

Theoretical framework

Job embeddedness and IRB

Job embeddedness refers to the combination of forces that enmesh an individual, psychologically and socially, within an organisation or within the community in which the organisation operates (Mitchell *et al.*, 2001). The key aspects of job embeddedness include the links an employee has to other people or groups in the organisation or community, how he or she fits into the organisation or community and what the employee would sacrifice upon leaving their organisation or community (Mitchell *et al.*, 2001; Lee *et al.*, 2004). Initial empirical outcomes of the job embeddedness theory have been positive (Mitchell *et al.*, 2001; Lee *et al.*, 2004); however, as this theory is relatively new, researchers have only speculated on how organisations can influence employees through organisational systems (Mitchell *et al.*, 2001). Mitchell *et al.* (2001) first proposed that employees' job embeddedness might be associated with different positive outcomes. Ng and Feldman (2010) further expanded this proposition and established a link between job embeddedness and IRB.

Researchers have argued that IRB can be broadly framed in terms of how employees can assist in the initiation, introduction or attainment of new ideas, processes, products or procedures (Farr and Ford, 1990). The instigation of new and constructive perspectives does not usually follow a linear relationship; hence, IRB is best understood as a multi-stage development process related to generation, coalition building and implementation of ideas (Scott and Bruce, 1994). This is in contrast to previously held views, whereby IRB was viewed as a one-dimensional model (Janssen, 2000), a two-dimension model (Farr *et al.* (2003) or a three-dimensional model (Reuvers *et al.* (2008)). The focus of IRB research is on individuals' overall participation in the innovation process, referring to the extent to which employees generate new ideas, disseminate those ideas and the ideas of others, implement innovation themselves or help others to do so (De Jong and Den Hartog, 2010; Ng and Feldman (2010)). IRB may help employees to improve their fit with job challenges by generating, promoting and achieving ideas for modification of oneself or the work environment.

Recently, Ng and Feldman (2010) suggested that job embeddedness could be a potential strategy to bolster IRB because embeddedness "fosters a strong sense of responsibility to contribute fully to long-term employers" (p. 1070). The authors found that job embeddedness was significantly positively associated with spread of innovation and implementation of innovation, but not with idea generation. Researchers have gone further to propose that idea generation is a fundamental activity in the early career stages in the field of innovation; therefore, many leading organisations today are actively promoting

ideation in various ways, such as with suggestion boxes. This is important because the outcome of the early career stage has a significant impact on the costs in the late career stage in terms of IRB as well as the productivity of the organisation (Koen *et al.*, 2001; Bergendahl and Magnusson, 2015). From the above discussion, it can be concluded that highly embedded employees are motivated to move forward with the organisation's best interests and display more IRB as a vehicle towards doing so. However, there are exceptions to this apparent relationship; different predictions about this relationship may be made based on the influence of certain descriptive moderators. I mention those predictions briefly in the sections below and elaborate on them in the discussion.

Moderating role of career stage

The increasingly competitive global market, particularly in the last decade, coupled with several other environmental factors, have resulted in the restructure of many organisations in order to achieve greater agility; however, this has come at a cost, with many organisations downsizing. The amalgamation of these factors has resulted in outdated of the typical linear career pattern, whereby the career of employees tends to evolve in just one or two organisations. Thus, the notion of career development (and with it, career stages) has changed conspicuously (Pappas and Flaherty, 2006). Career development literature has generally divided an employee's career into multiple stages (Sullivan and Baruch, 2009; Darcy *et al.*, 2012).

Super (1957, 1980, 1990) originally proposed that employees progress through different stages in their career: exploration and establishment (early career), maintenance (mid-career) and disengagement (late career). Each stage is endowed with unique foci and psychological adjustments (Pogson *et al.*, 2003; Low *et al.*, 2016; Carlson and Rotondo, 2001), which are generally delineated by length of tenure. Early career refers to the time during which individuals attempt to build skills and develop competencies to make occupational choices (Slocum and Cron, 1985; Super, 1957). Mid-career is the time period during which people are more interested in developing stable work and personal lives (Cohen, 1991; Super, 1957). Late career refers to the time period during which individuals may reduce the pace of work and escape from a frustrating job; late career is also associated with imminent retirement (Cron and Slocum, 1986; Super, 1957). Given the different developmental aspirations and idiosyncratic concerns felt, employees in different career stages might seek different inducements to address their needs (Super, 1957; Super, 1980; Super, 1990).

Ng and Feldman (2010) drew insight from the human resource (HR) management literature and offered a theoretical mechanism suggesting that individuals in mid-late career may define their work roles differently compared to when they started their career. This theory is based on the role theory (Morgan and Schwalbe, 1990). An employee's role within an organisational context encompasses a set of expectations on how the employee should behave (Parker, 2007; Van Sell *et al.*, 1981). The role expectations exert a standard pressure on employees' attitudes and behaviours (Biddle, 1986; Callero, 1994). Employees' beliefs about their tasks, responsibilities and concerns can vary with the roles they play in different career stages (Neale and Griffin, 2006).

There is a large body of empirical evidence to suggest that the relationship between work attitudes and work behaviour is moderated by the career stage (Post *et al.*, 2013; Pappas and Flaherty, 2006; Lin, 2005; Conway, 2004; Flaherty and Pappas, 2002; Cohen, 1991; Morrow and McElroy, 1987; Stumpf and Rabinowitz, 1981). However, an increasing body of literature has reported contradictory findings (for a review of such findings, see Morrow and McElroy, 1987; Bedeian *et al.*, 1991). Very little is known about how individuals actually embed within an organisation and how IRB varies across career stages. The current study will contribute to address this gap.

Considering job embeddedness within a career stage context is further justified, given that research has indicated that “at an early career stage, employees prefer more job mobility and may react less positively to high job embeddedness than would employees in mid- and late career stages” (Ng and Feldman (2010)). Further, high job embeddedness is negatively associated with the future mobility of early career professionals (Stumpf, 2014). If these notions continue to receive support, it may be necessary to devise mechanisms for diminishing job embeddedness in mid- and late career stage workers. However, additional research is needed to substantiate these contentions before policy recommendations related to manipulation of organisational embeddedness can be legitimately formulated. Thus, the hypotheses in this current study are as follows (Figure 1):

- H1. Job embeddedness is positively associated with employees’ IRB.
- H2. The relationship between job embeddedness and idea generation behaviour is moderated by career stage.
- H3. The relationship between job embeddedness and spreading of ideas is moderated by career stage.
- H4. The relationship between job embeddedness and implementation of innovative ideas is moderated by career stage.

Methodology

Research context

The media doesn’t tell us what to think; it tells us what to think about. (Cohen, 1963)

The media is the focal lens through which we view our world today (Rafiq and Weiwei, 2017; Wu *et al.*, 2017). The means in which the media sector pursues their collective interests has recently attracted scholarly attention (Dogruel, 2015). Prior studies suggest that media is a distinct occupation (Schudson, 2001; Dooley, 1997) which is continuously evolving (Dogruel, 2015). Due to this ever evolving process, it is a challenge for media management scholars to find adequate theoretical and empirical explanations for their findings. In this context, innovation research has gained particular prominence and is one of the most crucial underdeveloped areas of research in academia (Mierzejewska and Shaver, 2014).

Currently, one of the most influential phenomena in the world is China’s rise. China has undergone several decades of reform, and constructs such as “fascinating China” and “innovative China” represent the country’s current cultural and technological image (Men, 2016; Xiang, 2013; Lee, 2016; Chin and Rowley, 2018; Chin *et al.*, 2018). Nowadays, China is the world’s largest media market, though outlets operate under tight Communist Party control (Rao, 2016). China’s television broadcasting industry was established in 1958; it has since undergone extensive market reform and a series of market mechanisms and regulations have been implemented (Ngomba, 2012). As the flagship domestic TV station,

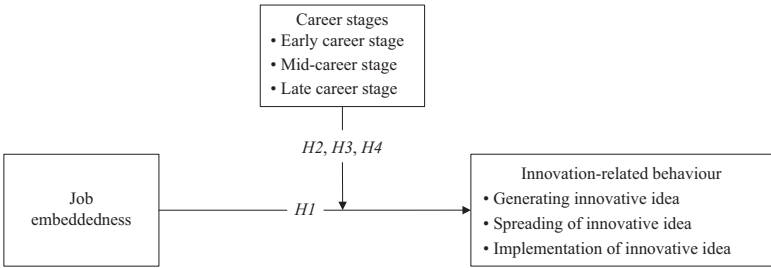


Figure 1.
Hypothesised model

China Central Television (CCTV) is a key premier broadcaster in China (Keane, 2006; Xiang, 2013), and is a major market for pay TV, which is almost entirely delivered by cable. Further, all of China's more than 2,600 radio stations are state-owned (BBC, 2018).

Ongoing debate engages with ideas of creativity (*chuangyi*) and innovation (*chuangxin*), which were the main issues for China's first international creative industry in Beijing in 2005 (Keane, 2006). According to UNESCO's Creative Economy Report, China's economy is in very good shape (Keane, 2013). There is an emphasis on creativity, which is frequently instigated by breakout creative industry forums (Keane, 2006). "Innovation is rendered in Chinese as "creating something new" or "bringing forth new ideas"; the word for creativity in Chinese brings together the ideas of "creating" (*chuang*) and "ideas" (*yi*), but with a more overt emphasis on art and imagination" (Keane, 2013; Keane, 2006). As Boden (2004) writes, "creativity is the ability to come up with ideas that are new, surprising and valuable". In December 2008, Li Changchun, the propaganda chief of the Communist Party of China, pointed out that China must go global to enhance its media capability with foreign media partnerships, so that our images and voices can reach thousands of homes in all parts of the world (Huang, 2013). Further implementing this idea, Beijing funded around US\$6.6bn to major Chinese media outlets (e.g. major beneficiaries are CCTV, Xinhua News Agency and *People's Daily*; Sun, 2015) in order to focus on growth through innovation. The incessant focus on "innovation-driven growth", salient in many recent government initiatives (van Someren and van Someren-Wang, 2017), has imbibed itself into the dynamics of media organisations.

Participants and procedure

I tested these ideas by examining a sample of 310 full-time media employees, who are working in four different media organisations in Beijing, China. This was a cross-sectional study and data were collected over a four month time period. Participants were from all departments including marketing, IT and sales. Before conducting, first, I contacted top management and HR professionals of all selected corporations to discuss our study and request support. All the employees first received an introductory e-mail from the organisation's top management; this e-mail explained the scholarly purpose of the research. For data collection, one of the researchers distributed pencil-and-paper-based questionnaires through the help of the HR department of each participating organisation; each questionnaire was accompanied by a letter assuring the participants of confidentiality and providing contact information for one of the authors of this paper in case of any questions. Completed questionnaires were returned to relevant organisational managers.

The final sample consisted of 169 participants (54 per cent male). The response rate was 67 per cent. Approximately 42 per cent of the participants were married. Regarding educational attainment, 39 per cent of the sample were college graduates, while 30 per cent had completed high school and the remaining 31 per cent had finished secondary school. The mean age of the sample was 36 years ($SD = 2.11$). Participants had worked for their organisation on average for 5.46 years ($SD = 2.25$).

Measures

A structured questionnaire was used to collect responses from the target population, media employees. The questionnaire was administered in the Chinese language because the Chinese language is widely used for official, commercial and business education purposes. For all measures, items were translated from original English scales to Chinese and were then back translated to English for quality control (Schaffer and Riordan, 2003; Brislin, 1986). Two independent translators fluent in English and Chinese assessed discrepancies. All scales used in this study were adopted from previous management literature. The reliability of each scale was estimated and found to be more than adequate. Indices for these constructs were subsequently created.

Job embeddedness. I used a shortened seven-item version of the job embeddedness measure of Crossley *et al.* (2007). Examples of the items measuring job embeddedness include: "It would be difficult for me to leave this organisation" and "I am tightly connected to this organisation". The shorter scale reduced the possibility of respondent fatigue relative to the original 26-item scale (Mitchell *et al.*, 2001). The shorter scale can also boost the overall response rate and minimise the repercussions of nonresponsive bias (Stanton *et al.*, 2002; Rogelberg and Stanton, 2007). Participants responded to the items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Innovation-related behaviour. I measured IRB with a five-item scale created by Ng *et al.* (2010), used in the work of Parker *et al.* (2006). This measure captures dimensions related to employees' new ideas (i.e. generation, spreading and implementation). The number of ideas generated was measured by the first item of the IRB scale. Response options were 0 (no new ideas), 1 (one to two new ideas), 2 (three to ten new ideas) and 3 (more than ten new ideas).

The spread of new ideas was measured by the second and third items. In the second item, I asked the respondents who had come up with at least one new idea whether they put forward this idea to anyone else and, if so, to whom. Response options were 1 (yes – to my colleagues) and 2 (yes – to a manager or supervisor). In the third item, I asked individuals to indicate whether they had helped to spread new ideas or solutions generated by co-workers or supervisors. Response options were 0 (no) and 1 (yes).

Implementation of new ideas was measured by the fourth and fifth items. In the fourth item, I asked individuals to indicate whether the idea(s) they generated themselves were implemented, and by whom. Response options were 0 (no), 1 (yes – by myself) and 2 (yes – by others). The fifth item asked the participants to indicate whether they had implemented ideas generated by co-workers or supervisors. Response options were 0 (no) and 1 (yes).

In order to examine whether the response options for the IRB items were ordinal in nature, I used the procedure proposed by Ng and Feldman (2013). It was determined that the scale was an ordinal scale, with higher scores reflecting greater IRB. Therefore, I summed the scores for each of the five items of the IRB scale and this summed score represented the extent to which an employee generated, disseminated and implemented new ideas in the workplace. The mean score for this scale was 7.71 (SD = 3.05), indicating that the participants reported greater than average IRB. The coefficient of α for this scale was 0.79.

Career stage. Career stage was operationalised using the convention described by Gould and Hawkins (1978), i.e. the length of employees' self-reported tenure in the organisation. Furthermore, consistent with previous studies (Gould and Hawkins, 1978; Stumpf and Rabinowitz, 1981; Cohen, 1991), a cut-off criterion was employed for career stages, as follows: early career stage ($n = 147$; tenure \leq two years), mid-career stage ($n = 126$; two years < tenure \leq 10 years) and late career stage ($n = 44$; tenure > 10 years). Career stages were quantitatively measured as categories. For example, the early career stage was categorised as "1" and so forth.

Control variables. I included four demographic variable as control variables, as these variables may have an effect on employees' attitudes and perceptions (Lee *et al.*, 2015) as well as IRB (Pieterse *et al.*, 2010; Ng and Feldman, 2013; Carmeli *et al.*, 2006; Axtell *et al.*, 2000). The control variables included: employee gender (male = 1; female = 0), age (in years), employee status (married = 1; single or other = 0) and employee education (less than high school = 1; high school degree or equivalent = 2; Bachelor degree = 3; Master's degree = 4; Doctor's degree = 5).

Analysis

First, the internal consistency of each scale was evaluated via the commonly accepted cut-off level for Cronbach's α of 0.70 (Nunnally and Bernstein, 1994). Next, means, standard deviations and correlation analyses were performed to confirm the relationship between job

embeddedness and IRB. Third, I performed moderated structural equation modelling (MSEM) for two reasons: first, to test the moderating effect of the three career stages on the relationship between job embeddedness and overall IRB and, second, to test the moderating effect of the three career stages on the relationship between job embeddedness and IRB dimensions. In order to test the moderating effect of career stages, the suggestions of Cortina *et al.* (2001) and Ping (1995) were followed.

Measurement model

I conducted confirmatory factor analysis using the statistical software package AMOS 20.0 to establish the distinctiveness of the multi-item variables. I estimated our model through various fit indices recommended by Hu and Bentler (1998), including the Tucker–Lewis index (TLI) and comparative fit index (CFI; values > 0.90 are acceptable and > 0.95 are excellent), root-mean-square error of approximation (RMSEA; < 0.08 is acceptable and < 0.05 is excellent) and standardized root-mean-square residual (SRMR; < 0.08 is acceptable; see Browne and Cudeck, 1993; Hu and Bentler, 1998; Hu and Bentler, 1999; Hoyle, 1995). The results indicated that our overall measurement model fit the data ($\chi^2 = 117.608$; $df = 47$; CFI = 0.96; TLI = 0.95; RMSEA = 0.06; SRMR = 0.04).

Convergent and discriminant validity

I followed the procedures of Anderson and Gerbing (1982) by setting the correlation between any two constructs to 1.0 and then performing a χ^2 -difference test between the constrained and unconstrained model. A significant positive χ^2 -value indicates that the constrained model has a significantly poorer fit than the unconstrained model, thus providing evidence for the distinctiveness of the two constructs. The results of our χ^2 -difference test between the constrained and unconstrained models was significant at $p < 0.001$. Therefore, the discriminant validity of our variables was statistically confirmed.

Common method variance

Self-reported measures may introduce common method variance (CMV) bias. To limit this bias, I followed the recommendations of Podsakoff *et al.* (2003). First, the respondents were assured of the anonymity of the questionnaire, and were encouraged to respond candidly. Items were also worded to minimise ambiguity. Second, a Harman's single factor test revealed a poor fit to the data ($\chi^2 = 246.129$; $df = 52$; CFI = 0.88; NFI = 0.85; RMSEA = 0.11). Third, I specified a structural equation model of the theoretical construct, together with the unmeasured latent method factor. This did not converge either. Thus, I can conclude that CMV bias is not particularly detrimental to our study.

Results

Descriptive statistics

Means, standard deviations and correlations between the variables are shown in Table I. The results revealed that older employees and those with high perceptions of job embeddedness had less IRB, while employees with higher education were more embedded and had greater IRB. The results in Table I indicate that there was a significant relationship between job embeddedness and IRB ($r = 0.416$, $p < 0.01$).

Testing the hypotheses

The hypothesised conceptual model was tested using AMOS 20.0 in accordance with the procedures of Ping (1995) and Cortina *et al.* (2001). The results of the MSEM are presented in Tables II and III, respectively. A discussion of the key findings follows.

Table I.
Mean, standard
deviation and
bivariate correlation of
research variables

Variable	1	2	3	4	5	6
1. Innovation-related behaviour						
2. Job embeddedness	0.416**					
3. Gender ^a	0.010	-0.006				
4. Marital Status ^b	0.015	0.040	-0.080			
5. Age	-0.013*	0.041	0.013	0.606**		
6. Education ^c	0.123*	0.095	0.087	0.150**	0.188**	
Mean	2.35	4.31	0.53	0.73	2.60	2.51
SD	0.315	0.645	0.500	0.447	1.109	0.916

Notes: $n = 310$. ^aGender was coded 0 = female and 1 = male; ^bmarital status was coded 1 = less than high school, 2 = high school degree or equivalent, 3 = bachelor degree, 4 = master degree, 5 = doctor's degree; ^ceducation was coded 0 = single or other and 1 = married. * $p < 0.05$; ** $p < 0.01$

Table II.
Summary of
structural model with
overall innovation-
related behaviour

Relationship	Path coefficients	SE	<i>t</i> -value	Significance
<i>Direct relationships</i>				
Job embeddedness → innovation-related behaviour	0.454	0.060	7.610	**
<i>Interaction effects of early career stage and organisation embeddedness on innovation</i>				
JE × ECS → innovation-related behaviour	0.200	0.007	26.663	**
<i>Interaction effects of late career stage and organisation embeddedness on innovation</i>				
JE × LCS → innovation-related behaviour	0.013	0.011	1.162	0.245

Notes: $n = 310$. JE, job embeddedness; ECS, early career stage; LCS, late-level career stage; base career stage = mid-career stage. * $p < 0.05$; ** $p < 0.01$

Table III.
Summary of
structural model
with bifurcation of
innovation-related
behaviour

Relationship	Path coefficients	SE	<i>t</i> -value	Significance
<i>Direct relationships</i>				
Job embeddedness → idea generation	0.276	0.020	14.121	**
Job embeddedness → idea spread	0.037	0.017	2.150	*
Job embeddedness → idea implementation	0.025	0.012	2.114	*
<i>Interaction effects of early career stage and organisation embeddedness on innovation</i>				
JE × ECS → generating new idea	0.199	0.007	29.629	**
JE × ECS → spreading innovation	0.011	0.006	1.920	0.055
JE × ECS → implementing innovation	0.003	0.003	0.969	0.333
<i>Interaction effects of late career stage and organisation embeddedness on innovation</i>				
JE × LCS → generating new idea	0.011	0.010	1.131	0.258
JE × LCS → spreading innovation	0.009	0.008	1.188	0.235
JE × LCS → implementing innovation	0.036	0.014	2.623	**

Notes: $n = 310$. JE, job embeddedness; ECS, early career stage; LCS, late-level career stage; base career stage = mid-career stage. * $p < 0.05$; ** $p < 0.01$

Table II provides the results addressing *H1*; as predicted, job embeddedness was positively associated IRB ($\beta = 0.45$, $p < 0.01$). Furthermore, job embeddedness was related to idea generation, spreading and implantation of IRB ($\beta = 0.28$, $p < 0.01$; $\beta = 0.04$, $p < 0.05$; $\beta = 0.03$, $p < 0.05$). The latter results are presented in Table III.

Job embeddedness impacted on idea generation significantly more in the early career stage as compared to the mid-career stage ($\beta_{\text{OE} \times \text{ECS}} = 0.199$, $p < 0.01$), while its impacts on

idea spread and idea implementation were not statistically different between the early and mid-career stages. This finding supports *H2*, which predicted that the relationship between job embeddedness and employee idea generation behaviour would be moderated by career stage. The results indicate that employees at an early career stage are more prone to idea generation, backed by job embeddedness, as compared to employees in the mid-career stage.

The results in Table III show that the relationship between job embeddedness and spreading of innovation was not significantly moderated by employee career stage. This indicates that job embeddedness enhances the spread of innovation irrespective of employee career stage; this is in contrast to *H3*, which predicted that the relationship between job embeddedness and employee spreading of ideas would be moderated by the mid-career stage.

Moreover, job embeddedness impacted on implementation of ideas more significantly for employees in the late career stage as compared to the mid-career stage ($\beta_{\text{OE} \times \text{LCS}} = 0.036$, $p < 0.01$), while there was no significant difference in its impact on idea generation and idea spread between the late and mid-career stage. This is consistent with *H4*, which predicted that the relationship between job embeddedness and employee implementation of innovation behaviour would be moderated by late career stage. The results indicate that employees in a late career stage are more prone to idea implementation, backed by job embeddedness, as compared to employees in the early and mid-career stages.

While job embeddedness did exert a main effect on IRB, there was no interactive effect of job embeddedness and mid-career stage on IRB; thus, the results failed to support *H3*.

Discussion

The present study is unique in that it is the first to re-examine the relationship between job embeddedness and three forms of IRB, and the first to examine the moderating role of career stages. The findings extend previous theory; in addition, several key differences should be taken into account.

The results suggest that job embeddedness is positively related to overall IRB. Furthermore, when ideas generation, spreading innovation and implementation of ideas were examined separately, job embeddedness was positively related to all forms of IRB. These significant relationships between job embeddedness and all types of IRB are inconsistent with the findings of a previous study (Ng and Feldman, 2010).

The results from the moderated structural equation analysis revealed that only the early career stage was a *significant* moderator of the relationship between job embeddedness and overall IRB. Additionally, when the moderation effect of career stage was tested on the relationship between job embeddedness and all IRBs separately, early career stage was found to be a significant moderator of the relationship between job embeddedness and ideas generation; on the other hand, late career stage was a significant moderator of the relationship between job embeddedness and ideas implementation.

In the current study, the innovative environment of the study organisations is a plausible factor that could explain the observed deviations in results; this assertion is consistent with the suggestion of Ng and Feldman (2010), who asserted that differences can result from considering different industries. For innovative organisations (such as the media industry in this study), the more deeply entrenched embeddedness of early career employees may explain the relationship between job embeddedness and overall IRB as well as idea generation. That is, in an innovative industry, employees are likely to be convinced that they have chosen a job that will allow them to pursue a career. This exalted commitment is reflected in their high level of job embeddedness and motivation to generate new ideas. This is in contrast to other career stages, where employees may define their work roles differently to when they started their career (Ng and Feldman, 2010).

Finally, it should be noted that if one is concerned with the general question about whether employees in the early stage of their careers are more embedded with a job, the specific

manner in which the concepts are operationalised makes little difference. Regardless of the manner in which career stage is defined, or the form of job embeddedness used, the results of this study clearly point towards workers in the early career stage being highly embedded. This finding is largely supported by a previous study that reported a negative relationship between job embeddedness and job mobility in the early career stage (Stumpf, 2014). Further, career stage has been shown to vary across studied samples (Morrow and McElroy, 1987).

Practical implications

The results of this study have practical implications for HR managers. First, this study was conducted in an innovative environment; China is a developing nation where organisational behaviour has been a focus for development of the innovation economy. This innovative environment has added another perspective to the existing literature on the relationship between employees' job embeddedness and IRB across career stages. Our findings suggest that early career stage employees are highly embedded with their job and are more likely to engage in ideas generation behaviour in an innovative environment. HR managers need to be aware of the dynamics of an innovative working environment. For example, if creative ways of working are available to early career of employees, high participation in ideas generation IRB may support retention, particularly among those who are seeking progression and an upward career trajectory. This is especially important for recognising the changing needs of employees in the early career stage. It may also encourage early career employees to progress further on a vertical trajectory. Furthermore, I also found that employees in more advanced career stages are less likely to generate innovative ideas; rather, they are more inclined to implement innovative ideas throughout the organisation. Management might want to consider this perspective in order to achieve organisational mini goals that might help the organisation to fulfil its main goal in the long term.

Limitations and future research directions

In interpreting the findings of this study, few limitations must be considered. First, data were collected from a single source, and thus may be prone to common method biases (Podsakoff *et al.*, 2003; Gyensare *et al.*, 2016; Elamin, 2012). The data are not free from common source bias because the evaluations of both employee job embeddedness and IRB came from the same rater (i.e. the employees); although, responses were temporally dispersed. Future research should attempt to collect multi-source data from organisations in multiple industries and across different regions. Furthermore, another interesting avenue for future research would be to replicate this study in different fields other than innovation. It is possible that the tested relationships differ for different fields.

Conclusion

In conclusion, the findings of this study can be used by HR departments to develop processes to identify, recruit and select candidates with the highest level of concurrence between their own core values and goals and those of the relevant organisation; this will facilitate high embeddedness of employees, who will then contribute to ideas generation and implementation. Moreover, it is in an organisation's best interest that new ideas are implemented, but there is much work remaining to be done to stimulate innovative potential.

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