The Moderation Effect of Workplace Experience on Innovation Motivation: a Study of STEM Faculty in Singapore

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Abstract

While the topic on drivers of innovation has been intensely studied, most of the literature tends to examine motivators at a point in time with the assumption that they are stable. However, shifts in social and environmental contexts may change motivators of behavior. In light of the discrepancy, this study uses the person-environment fit theory and examines innovation-stimulating work climate from the perspective of workplace experience. With a sample of 276 faculty members in two major universities in Singapore, we test the moderating effect of workplace experience on three motivators – peer influence, performance evaluation and resource access, and found that with increased workplace experience, the effectiveness of these environmental motivators diminished. Resource access and co-worker influence become less salient with the exception of evaluation, which remains important. The implications for university administration and academic training programs are discussed.

Keywords: Innovation; work experience; university faculty

JEL codes: O31; O32; I23; J61

Introduction

Universities around the world have shifted attention from their traditional roles of research and teaching to a third task of economic development as a result of internal university development and external influences associated with the emergence of knowledge-based innovation (Etzkowitz, Webster, Gebhardt, & Terra, 2000). Academic scientists are called upon for more application-oriented research and to relate their scientific exploration with industrial needs to promote national competitiveness. Studies on motivators are therefore vital to enhance our understanding of factors that are important for encouraging more patenting engagement. Most of the literature examine motivators at a point in time and seem to assume that they are stable. Yet, shifts in the social and environmental contexts may conduce a change in motivators of behavior, meaning that they may become stronger or weaker drivers with new circumstances and experience. In this study, we examine how work climate motivators of innovation may alter in importance with workplace experience using a sample of 276 academic scientists. We find evidence that these motivators encourage innovation activities in universities, however, the effects fade out with longer experience at the workplace, suggestive of the transient nature of environmental motivators.

Theoretical Background and Hypotheses

Work Environment and Academic Innovation

Academics have a high degree of autonomy in application-oriented innovation engagement, and are motivated by different factors. A number of studies have investigated scientists' motivation, and their propensity for innovation activities. These studies examined externally motivating factors such as the traditional rewards of prestige (Stephan and Everhart

1998), peer recognition, the opportunity to seek new stimuli, financial reward (Göktepe-Hulten & Mahagaonkar, 2010) and career advancement (Stevens et al. 2011). There are also internal motivators such as satisfaction, enjoyment of the creative activity of solving the puzzles in science, advancement (Lam 2011) and the sharing of knowledge (Sauermann and Cohen 2010).

However, innovation cannot be understood without careful attention to the personal, organizational, technological, and environmental contexts within which it takes place (Tornatzky & Fleischer, 1990). While an innate interest or satisfaction to perform an activity can be a major source of motivation, the social environment may facilitate or hinder this motivation by supporting or obstructing individual psychological needs (Ryan & Deci, 2000b). Researchers have shown that a favorable regulatory environment (Olaya Escobar et al. 2017), influence of advisors (Azoulay et al. 2017) and work environment (Antonioli et al. 2016) affect entrepreneurial intentions and behavior.

Previous studies have found several work environment motivators. Among them are peer influence, performance evaluation and resource supply. In the workplace, peers refer to colleagues with whom one interacts. The influence of peers can be significant in shaping one's behavior. For example, Gompers et al. (2005), argued that employees in entrepreneurial firms learn from their co-workers about what it takes to start a new firm, and Nanda and Sørensen (2010) showed that the career experiences of entrepreneurial colleagues influence individual entrepreneurial activities. According to social cognitive theory, individuals tend to model behavior that they observe others exhibiting (Bandura, 1986), with the strongest influence exerted by peers of the same age (Aral and Walker 2012). Staff with supervisory roles are exemplars of the desired behavior of the organization, for instance, when the department chair is active in technology transfer, other members of the department are likely to participate as they view the chair as modeling desirable behavior (Bercovitz and Feldman, 2008). Similarly, senior colleagues who support entrepreneurial ideas may create pressure on individuals to internalize norms and conform to the peer group (Moog, Werner, Houweling, & Backes-Gellner, 2015). Decisions to engage in innovation activities may be influenced by social norms or beliefs about them. By observing their co-workers, academic scientists learn the proper behavior of the social group, and may want to maintain the same level of activity in commercialization according to group norms so as to meet peer expectation and elicit approval from salient others (Hall et al. 2017). Therefore, we hypothesize that

H1: Researchers are more likely to engage in innovation if their peers are engaged in the activity.

Performance appraisal is an inevitable component in the work place for determining pay and promotion. It refers to a set of structured formal interactions, usually conducted as a periodic interview, between a subordinate and a supervisor, in which the performance of the subordinate is reviewed and discussed, with the aim of identifying weaknesses, strengths and opportunities for performance improvement and skill development (Latham and Wexley 1994). Appraisal is a means to communicate strategic visions and goals to employees (Kuvaas, 2006) so that individuals may experience greater meaningfulness of work and better understand the rationale for behavior at work, which may enhance intrinsic motivation because there is something they can believe in (Latham, 2003). Although intensive use of appraisal of knowledge behaviors may reduce the positive impact of rewards on radical innovation (Andreeva et al. 2017), strong human resource systems that emphasize consistency and consensus may also induce conformity and compliance (Bowen and Ostroff 2004). By setting clear expectations about rewards and incentives for the desired responses and behaviors, the organization directs actions of individuals and reinforces what is desirable. If innovative activities are part of the performance appraisal, academic scientists would invest their time as it can generate organizational rewards and signal that they are compliant with its expectations. Hence, the second hypothesis:

H2: Researchers are more likely to engage in innovation if it is part of their performance appraisal.

Factors such as access to appropriate resources (Amabile and Gryskiewicz 1988; Rosso 2014) and time pressure (Amabile et al. 2002) place practical limitations on the innovation activities of individuals. In particular, funding as a financial resource is a much-needed investment for research. While some studies have shown that innovation outcomes can be obtained with constrained financial resources (Scopelliti et al. 2014), access to funding remains important to scientists who may need to acquire equipment or for international collaboration (Wagner, 2006). Access to funding may support commercialization of innovations through the provision of expertise by the funding organization or specific appropriation requirements of the grant (Lawson 2013). The importance of availability of resources on research and innovation has been emphasized in several studies (e.g., Hemlin, 2009; McCoy & Evans, 2002). Innovation activities start from research which necessitates lab facilities, equipment and manpower — all of which require substantial funds. It is expected that funding will help academic scientists to engage in innovation activities.

H3: Researchers are more likely to engage in innovation if funding is available.

Workplace Experience and Academic Innovation

While the environment motivators on innovation have been intensely studied, most of the literature tends to examine motivators at a point in time with the assumption that they are stable.

However, influence of the organization's work environment on individual innovative behavior is not invariant (Gilbertson & Ewert, 2015; Xiang, Chen, & Bruene, 2005). Person-environment fit theory suggests that job expectation and work experience both affect work attitudes and behavior, but their effect varies at different career stage (Feldman et al. 2014; Irving & Meyer, 1994), with two streams of theories pointing to the different directions of the effect. Based on the interactionist perspective and the attraction-selection-attrition (ASA) framework (Ostroff & Rothausen, 1997; Schneider, 1987), the longer employees stay in the organization, the greater degree of fit they would have with the organization. Those who do not fit well will either leave voluntarily or be asked to leave. Further, due to socialization process in the organization, employees would be a more homogeneous group as their individual values and personalities change in the direction of organizational values (Morse, 1975; Moyson et al. 2017). Hence, as tenure in the organization increases, the work climate becomes more influential on the individual employees. Consequently, we would expect to see a stronger influence from workplace environment factors such as peer influence, performance appraisal and resource supply on academics who work longer in the university.

By contrast, according to the fadeout model (Miceli, 1987), expectation is strongly correlated with work adjustment in the initial period as newcomers are often altering their characteristics and adjusting themselves to better fit the work place (Caplan, 1987). However, such expectation effect diminishes over time. Their genetic makeup, such as creativity and physical aptitudes, becomes more influential when employees are more settled in the organization (Miceli, 1987). Similarly, the career development model puts the career into three stages: exploration, establishment and maintenance, and argues that people would have different work interest and inclination at different stage (Super, 1957). While people in the early stage are keener in exploring work norm and adapting themselves, those in the latter two stages are relatively secure in the organization and have more opportunities to pursue their professional ambition. As such, newly joined academic scientists are expected to be more compliant with the work climate in their school, while experienced faculty tend to follow their research interest and pay less attention to the environmental calls. Thus, even though organizational factors (such as peer influence, performance appraisal and resource supply) should increase innovation activities, workplace experience diminishes such influence as experienced faculty pay more attention to their inner leanings while new faculty comply dutifully with organizational direction.

Given the mixing effect of time on person-environment fit, we anticipate work environment factors to affect academic scientists differently based on the experience they have in the university. Here we propose the following three hypotheses and the related logic model (Figure 1):

H4: Workplace experience has a moderating effect on the relationship between peer influence and innovation.

H5: Workplace experience has a moderating effect on the influence of performance appraisal on innovation.

H6: Workplace experience has a moderating effect on the impact of research funding on innovation.

Figure 1 somewhere here

Data and Variables

Data

We select the case of Singapore, a small Asian country with 5.6 million population. While academic innovation has been well studied, existing literature is dominated by practices in the US and European developed countries. The study of Singapore offers a new angle because of its distinct institutional context. The Singapore government is heavily involved in directing research and development (R&D) and entrepreneurial activities (Finegold et al. 2004; Koh and Wong 2005; Wang 2018), including establishing and intensifying the link between university and industry (Lee and Win 2004), which contrasts with the more spontaneous and bottom-up process in Western countries. In addition, universities in Singapore have a highly diversified faculty population. At the two largest universities, the National University of Singapore (NUS) and Nanyang Technological University (NTU), only a quarter of early-career academics on the tenure track are Singaporean (Holden, 2014 July 3). Majority of the faculty members are foreign born (82% in our sample) and received PhD education (90% in the sample) in other countries before taking up the academic position in Singapore, which makes it a suitable case to study the adaptation to the work environment as working in universities in Singapore is an entirely new experience for most of them.

Our population is academic scientists in the Science, Technology, Engineering and Math (STEM) fields in Singapore, as it sees the most innovation due to the nature of the disciplines. We identified a list of 2446 faculty members by manually checking the websites of NUS and NTU in 2015.

Data used in this study were pooled from multiple sources. To obtain academic scientists' career pattern and job experience, we collected curriculum vitae (CVs) from institutional websites. From CVs and other profile information on the websites, we collected basic demographic information such as name, gender, title, education and employment history, and contact information. Subsequently in November 2015, we sent emails to the faculty members inviting them to participate in an online survey that contains information on their innovation experience, and received 532 responses, i.e., a response rate of 22%. After restricting to STEM faculty and removing incomplete cases, 276 cases were left. Data on the patent portfolios of individual academic scientist was constructed using the number of patent applications in the United States Patent and Trademark Office (USPTO). The USPTO patent data were retrieved from PATSTAT database in July 2015 by searching the inventor country field for inventors from Singapore. We restrict inventors to those who reside in Singapore as we are interested in the innovation work conducted locally. We searched through this database for all patents which listed academic scientists from our sample as inventors. The number of patent applications for each individual up to 2015 (the time of the search) was compiled. Patents filed solely by individuals, without an organization or university as assignee, were not included in our analysis since we were not able to locate individuals' employer and thus verify their identity. Similarly, we searched for publication records for each faculty member in the Scopus database that allows us to retrieve publications by Scopus ID for each scientist.

Variables

Dependent variable

Patents. Patents are a direct outcome of the creative process, particularly those that have a commercial impact, and represent an externally validated measure of technological novelty (Griliches, 1990) since patents have to be evaluated by the patent office. Patents have been critiqued as noisy indicators of innovative output (Griliches et al. 1986; Popp, 2005). Nevertheless, they are the most widely used innovation indicator, especially for measuring innovation activities in STEM fields (Graham et al. 2009). Similar to a number of studies

(Belenzon and Patacconi 2013; Bhattacharya et al. 2017), we used the number of patent applications as a proxy for innovation.

Independent variables

Peer. To measure the effect of senior colleagues' innovation activities, we obtained a list of full professor-ranked faculty in each department using the school faculty directory, and coupled it with each professor's patenting data. *Peer* is calculated as the average number of patents for full professors in each department. We only examined professor-ranked faculty members as they are experienced and more likely to be viewed as role models by new comers. Most professors (11%) have an average of 1.4 patents although a similar percentage also do not have any patents at all.

Evaluation. University-generated technologies are mostly embryonic, and academic scientists often need to work with external parties to move developments forward for commercialization, hence the importance of existing or potential collaboration with other sectors to performance evaluation was used as an indicator of performance-reward dependency. Responses were solicited on the importance of being evaluated for their work with industry. On a 5-point Likert scale, 24% of respondents felt it was not at all important or not very important, 25.1% found it somewhat important, and 36.1% of respondents found it crucial or important.

Funding. Resource supply was measured as the access to research funding. Respondents were asked about their satisfaction with access to research funding on a 5-point Likert scale from "very dissatisfied" to "very satisfied". About 59.8% were very satisfied or satisfied, 19.1% were neutral and 18.4% were very dissatisfied or dissatisfied.

Moderating variable

Workplace experience. Workplace experience was measured by the number of years in Singapore which, in most cases, would equate to respondents' number of years with the university. As mentioned, 82% of our sample are foreign born and 90% obtained their PhDs in other countries before moving to Singapore. Hence, most of the academic scientists are in Singapore specifically to assume responsibilities in the universities, and it is also their first move to Singapore. Thus, number of years in Singapore referred to in this study does not correspond to seniority nor professional age but the time they have to be familiar with the environment, people and the system. The variable is obtained from the survey where respondents were asked to indicate the number of years working in Singapore from five options: less than 1 year; 1-3 years; 3-6 years; 6-9 years and more than 9 years. More than half (52.8%) of the respondents have stayed in Singapore over 9 years, while 13.7% of them were still in the first two contracts (less than 6 years).

Control variables

Age, tenure, gender, publications, industry experience and nature of disciplines are the control variables as they are related to innovation. Age is generally related to tenure, with older academic scientists having tenure, and therefore having the time to engage in innovation, compared to younger ones. The gender gap remains prominent in the economy and innovation, and as academia tends to be male-dominated, women may face extra difficulties developing entrepreneurial activities (Klofsten & Jones-Evans, 2000). Demographic data were gathered from the survey. Extant research has established a robust relationship between publication and patents (Azoulay, Ding, & Stuart, 2006; Magerman et al. 2015). The number of publications retrieved from the Scopus database in 2016 was used to control such effect.

Respondents' employment history in the CV was used to gather data on industry experience, represented by a dummy variable which takes the value "1" if respondent has industry experience, "0" otherwise. We only considered industry experience after receipt of a PhD as there may be more possibility and scope for innovation after doctoral training. We classified respondents' discipline into three broad categories of engineering, life sciences, and physical sciences and mathematics. Two dummy variables were created to control the effect of discipline, with the field of physical sciences and mathematics being used as a baseline category. A summary of the variables and their sources can be found in Table 1. Table 2 provides the descriptive statistics and Table 3 the correlation matrix.

Tables 1,2 &3 somewhere here

Model and Findings

As the number of patent applications is restricted to non-negative integer values, to investigate the relationship between factors affecting innovation and innovation output, we estimate count data models using Poisson regression. Results of the regression model are presented in Table 4.

Model 1 includes the control variables. Among the control variables, tenure, publications and industry experience all have positive and significant influence as expected. People with tenure, more publications and prior industry experience are more likely to engage in innovation activities. By contrast, the dummy variable of male indicates that, counter to evidence elsewhere (Frietsch, Haller, Funken-Vrohlings, & Grupp, 2009; Sugimoto et al. 2015), it is less likely for males to patent than females. Even though our sample was heavily biased in favor of males as is typical of STEM fields, the top two patent-holders, each holding more than 10 patents, were female, which might have skewed the results. Age influences in the expected direction but is non-significant, as are the controls on disciplines.

Models 2 adds the main effects of workplace experience, peer influence, evaluation, and funding access. Models 3-5 add the interaction of workplace experience and peer influence, evaluation, as well as funding access. Prior to the creation of interaction terms, both independent and moderator variables were mean-centered. As seen from Model 2, peer influence, performance appraisal and access to funding have a positive effect on innovation as indicated by patent applications, supporting hypotheses 1-3. Cultivating a work environment that encourages yet also pressurizes academic scientists increases patenting, affirming the findings of past studies. However, a different picture emerges when workplace experience is introduced as a moderator. In support of H4, the influence of peers is negatively but significantly associated with patenting. Apparently, the pressure that senior colleagues exert initially boosts innovative efforts but the effect is not sustained and it even reduces such activity eventually. Similarly, access to funding has a significant negative impact on patenting, i.e., funding access, while originally encouraging innovative behavior, also has the effect of decreasing innovation with more years of work experience, supporting H6. Evaluation retains a positive influence with university innovation but the effect is only marginally significant. Hence, H5 is not supported.

Table 4 somewhere here

Discussion and Conclusions

Motivators are vital to push activity in a specific direction. By wielding sticks and dangling carrots, individuals are pressured or encouraged to perform certain behaviors. The results show that motivator effects vary depending on the time in the organization. When academic scientists join the university, mostly at the junior level, they may be unfamiliar with the environment and the behavior expected of them. As such, they are highly reliant on the environment for cues to ensure that they fit in and conform to behavioral norms. Senior colleagues would be appropriate models for behavior. Therefore, if senior colleagues are active in patenting, academic scientists would be pressured into similar engagements to signal their attempt to adapt to the university or school practices and keep up with their peers. Further, if reward hinges on performance, and innovation constitutes part of performance appraisal, then it would be pertinent for the scientist to be involved in order to meet the evaluative criteria and move up the career ladder. Thus, they may be enthusiastic about the resources that can be made available for such purposes, and would maximize opportunities to make use of them.

However, not all scientists are interested in academic patenting. Scientist beliefs and attitudes towards commercialization of science affect entrepreneurial behavior (Krabel & Mueller, 2009; Renault, 2006). Particularly if they feel academia-industry should be distinct yet have so far been willing to accept institutional expectations for application-oriented research and patenting, scientists may feel psychological dissonance (Lam, 2011). With time, as they are settled and secure in their job, they may be less reliant on the work climate for behavior, and desire to align their work with their values to escape the psychological conflict. Thus, even with access to resources and creative colleagues, scientists may no longer be enticed or pressured to innovate if congruence between their values and those associated with the activity is not high.

While the moderating effect of workplace experience on peers and funding decreases innovation, its effect on evaluation has a positive impact on innovation. This suggests that while scientists may not be willing to succumb to peer and funding pressures, they do not want to fare poorly on appraisal which relates directly to individual capabilities and performance. Evaluation therefore may have some value in encouraging innovation.

The study is one of the few to examine how motivators change with accumulated workplace experience. Many studies recognized the importance of motivators (Fernandes and Remelhe 2016; Shalley et al., 2004), however, the extent these motivators vary with experience at the job is rarely discussed. As motivator influence fluctuates with personal and social factors, identifying these factors can help focus efforts on motivators with long term effect while diverting resources from drivers that are no longer effective. This study makes a valuable contribution in highlighting the moderating role of workplace experience, and provides grounds for more longitudinal studies.

The study has practical implications. Universities need to react to scientist motivations and subsequent behaviors towards academic patenting, type of climate needed to engage in innovation activities, and management techniques and skills to encourage innovative behavior. Policies to promote research commercialization through rewards and pressure may not be sustainable as scientists who do not derive intrinsic satisfaction from commercial engagement would eventually disengage. Cultivating a culture of innovation in the university by targeting graduate students in addition to faculty may be a first step. Many scientists form their own ideas about their role as scientists while in graduate school, and model their thinking and behavior after their advisors or mentors. Helping graduate students see the value of research commercialization by including them in the call to be active agents of innovation or through research attachment stints with industry can aid in planting an open or even favorable perception and attitude of commercialization, which can make them more receptive to such activity as academic scientists. Since motivators change over time with accruement of workplace experience, universities should consider targeted incentives for academic scientists at different career stages as a one-size-fits-all approach may not be appropriate, and may instead have an adverse long-term effect on innovative efforts after some initial success. A better understanding of the factors that can motivate settled academic scientists to innovate would be of great use.

Finally, this research has some limitations which point to directions for future studies. Although the effect of workplace experience was examined, the cross-sectional nature of the data does not allow us to establish any definitive causal relationships. We hope to see future longitudinal studies on the effect of motivators to validate our findings. More motivators could be examined to explore if their impact changes over time. Intrinsic motivators were not explored in this study. Thus, it was not possible to determine if intrinsic motivators would be more enduring as the literature suggest. Including them in future research would increase the comprehension of motivator effects.

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Figure 1 Logic model

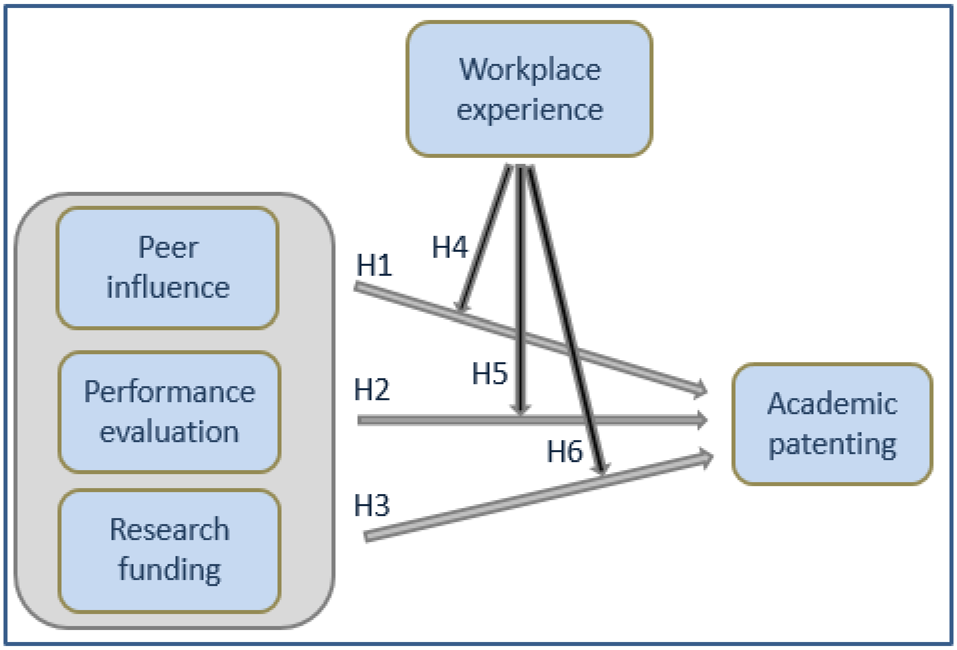

Table 1: Variables and data sources

Variable	Description	Type of variable	Source of data
Patents	Total number of patent applications in USPTO	Count	PATSTAT
Peer	The average number of patents from professors in the department	Interval	PATSTAT
Evaluation	Importance of performance evaluation in their working with industry (5-point Likert scale)	Ordinal	Survey
Funding	Satisfaction with access to research funding (5-point Likert scale)	Ordinal	Survey
Workplace experience	Number of years working in Singapore (universities)	Count	Survey
Engineering	Whether in engineering or not	Dummy	CV
Life sciences	Whether in life sciences or not	Dummy	CV
Age	Age of respondent in 2016	Count	Survey
Male	Gender of respondent	Dummy	Survey
Tenure	Whether respondent is tenured or not	Dummy	Survey
Publications	Total number of publications in Scopus in 2016	Count	Scopus
Industry experience	Whether with industry experience	Dummy	CV

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Patents	276	0.841	2.437	0	21
Peer	276	0.050	0.040	0	0.154
Evaluation	224	3.156	1.182	1	5
Funding	249	3.578	1.083	1	5
Workplace experience	271	4.015	1.180	1	5
Engineering	273	0.469	0.500	0	1
Life sciences	273	0.234	0.424	0	1
Age	275	47.16	9.238	27	75
Male	276	0.862	0.345	0	1
Tenure	274	0.496	0.501	0	1
Publications	275	96.335	93.114	1	630
Industry experience	255	0.157	0.364	0	1

Table 3: Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12
1	Patents	1											
2	Peer	0.227*	1										
3	Evaluation	0.137*	0.108	1									
4	Funding	0.059	-0.015	0.196*	1								
5	Workplace experience	0.205*	0.009	0.007	0.004	1							
6	Engineering	0.068	0.382*	0.217*	0.050	0.076	1						
7	Life sciences	-0.100	-0.175*	-0.065	-0.131*	-0.093	-0.520*	1					
8	Age	0.106	-0.103	0.051	-0.045	0.600*	-0.041	0.078	1				
9	Male	-0.069	0.042	-0.050	0.078	0.078	0.208*	-0.227*	0.090	1			
10	Tenure	0.128*	0.039	-0.111	0.005	0.577*	0.033	-0.125*	0.435*	0.072	1		
11	Publications	0.297*	0.129*	-0.013	0.109	0.307*	0.116	-0.167*	0.436*	0.071	0.270*	1	
12	Industry experience	0.054	0.137*	-0.019	-0.205*	0.016	0.186*	-0.025	0.082	0.047	-0.050	0.001	1

Table 4: Estimation results

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Peer		0.343 *** (0.075)	1.806 *** (0.465)	0.346 *** (0.075)	0.320 *** (0.077)
Evaluation		0.338 *** (0.087)	0.369 *** (0.088)	- 0.712 (0.563)	0.363 *** (0.087)
Funding		0.326 ** (0.098)	0.319 ** (0.096)	0.298 ** (0.099)	1.896 * (0.801)
Workplace experience		0.702 *** (0.143)	1.009 *** (0.207)	- 0.014 (0.382)	2.090 ** (0.742)
Peer x Experience			- 0.313 ** (0.097)		
Evaluation x Experience				0.227* (0.120)	
Funding x Experience					- 0.339 * (0.169)
Engineering	0.345 * (0.166)	0.082 (0.208)	0.081 (0.210)	0.018 (0.208)	0.081 (0.208)
Life sciences	- 0.618 * (0.247)	- 0.077 (0.285)	0.023 (0.290)	- 0.185 (0.288)	- 0.105 (0.286)
Age	0.006 (0.010)	- 0.009 (0.013)	- 0.009 (0.013)	- 0.012 (0.013)	- 0.009 (0.013)
Male	- 1.234 *** (0.197)	- 1.407 *** (0.218)	- 1.372 *** (0.225)	-1.243 *** (0.233)	- 1.343 *** (0.219)
Tenure	1.021 *** (0.173)	0.890 *** (0.226)	0.872 *** (0.230)	0.870 *** (0.224)	0.897 *** (0.225)
Publications	0.005 *** (0.001)	0.005 *** (0.001)	0.005 *** (0.001)	0.005 *** (0.001)	0.005 *** (0.001)
Industry experience	0.576 ** (0.183)	0.647 ** (0.206)	0.656 ** (0.210)	0.630 ** (0.208)	0.731 *** (0.210)
_cons	- 0.962 * (0.433)	- 5.613 *** (0.821)	- 7.202 *** (1.104)	- 2.122 (1.894)	- 12.207 ** (3.601)
Num of obs	249	195^{+}	195^{+}	195^{+}	195^{+}
Pseudo R^2	0.202	0.397	0.410	0.402	0.403

Standard errors are in parentheses
* p < .05, ** p < .01, *** p < .001

$^{+}$ The number of observations dropped due to the exclusion of respondents who gave a 'not applicable' response to questions on evaluation or funding.