How does 'Innovation as a Job requirement' contribute to Innovative Work Behavior? Evidence from the Higher Education Sector of Pakistan

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Abstract

Innovation and creativity have been regarded as a major source of the competitive advantage of the organizations. Emerging trends in the higher education sector are pressing faculty members to be innovative and produce research-oriented solutions to dynamic problems. This shift in faculty role has made innovativeness a requirement for their job. This study aims to check the impact of innovation as a job requirement on innovative work behavior. The mediating role of extrinsic rewards is also checked. Data were collected from the faculty members in the higher education sector, from universities of Pakistan. Structural equation modelling is used to check hypothesized relationships. Results reveal that innovation as a job requirement is positively and significantly related to faculty's innovative work behavior. Extrinsic rewards fully mediate the relationship between innovation as a job requirement and innovative work behavior. Although previous literature has always focused on intrinsic factors as predictors of innovative work behavior, this study suggests that extrinsic and tangible rewards are mandatory to facilitate innovative work behavior when it is made a mandatory requirement for the job. This study is cross sectional in nature, and future studies should use longitudinal design to unearth the true mechanism of interaction between innovation as a job requirement, and extrinsic rewards in their relationship with innovative work behavior, controlling for intrinsic factors.

Keywords: Innovative work behavior; creativity; innovation as a job requirement; extrinsic rewards; higher education sector; Pakistan.

Introduction

Creativity and innovation are regarded as a useful resource for the socio-economic development and welfare of the society (Fan *et al*., 2016). Creativity refers to the generation of new ideas that are unique and useful for the individual, group and the organization (Amabile, 1996). The process that materializes these creative ideas into creative performance and outcome is regarded as innovative behavior (Janssen, 2000) that covers the idea promotion and implementation phases, as well as idea generation. Although 'creativity and innovation are an integral part of the same process' (Anderson,

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Potočnik, & Zhou, 2014, p. 1), creativity has received greater attention in the literature, whereas subsequent stages of innovation still need their due share of focus from empirical and theoretical scholarship (Anderson *et al*., 2014; Fan *et al*., 2016, p. 49; Hammond *et al*., 2011).

Innovative work behavior, whether operationalized as a single construct or comprised of different dimensions, has received importance in recent literature and is being tested in a variety of contexts. Innovation is being regarded as an important driver of competitive advantage and its emergence as a global construct has attracted authors to unearth its determinants. Recent literature reveals that important determinants of innovative behavior include contextual factors such as leadership, climate for innovation, leader-member exchange, job characteristics as well as motivational aspects such as intrinsic and extrinsic motivation, personality such as openness to experience and self-efficacy (N. Anderson *et al*., 2014).

As regards the recent regulatory focus through the Higher Education Commission (HEC) of Pakistan, teachers in the higher education sector of Pakistan have been made bound to publish in impact factor journals in order to receive promotion to higher grades or funding for research projects. These factors have also been made an important indicator for the ranking of the universities in Pakistan. Such regulatory environment has made 'innovation as job requirement' for Higher Education Institutions (HEIs). Moreover, universities have linked their monetary rewards, promotions, and salary directly to innovative behavior and output. This condition has geared us to test the impact of innovation as job requirement, and extrinsic motivation to innovative work behavior in higher education context. Literature on innovative work behavior is tilted more towards intrinsic motivation than to extrinsic motivation, and the link between the latter and innovative work behavior has been inconclusive. Some authors, who think innovative work behavior is the sole function of intrinsic motivation, also consider extrinsic factors as detrimental to it (Amabile, 1996). However, recent research is emphasizing monetary rewards and other extrinsic factors to be the relevant predictor of innovative work behavior (Hammond *et al*., 2011; Shin, Yuan, & Zhou, 2017) due to its 'informational value' and ability to encourage innovation (Zhou & Shalley, 2003, p. 198). Moreover, intrinsic, and extrinsic motivations are not mutually exclusive, thus may have differential impacts on creativity and innovation (Deci & Ryan, 1985). Moreover, research suggests that rewards perceived by employees as fair and transparent may induce innovative behavior (Young, 2012).

Most of the research on creativity and employees' innovative work behavior has been conducted in Western contexts in a variety of sectors. Few studies are found in the Asian context, especially from Pakistan. Moreover, innovative work behavior is regarded

as an important driver for competitive advantage equally for manufacturing and service sector as well as for public and private sector. No study has been found to this day that may have tested innovative work behavior of faculty of HEIs. This study reviewed the literature on innovative work behavior, analyzing 154 studies published in peer-reviewed journals, and found only two studies from Pakistan that tested innovative work behavior in manufacturing (Javed *et al.*, 2017) and hospitality sectors (Javed *et al.*, 2017). No study from around the globe has been found testing innovative work behavior in the higher education sector. Therefore, this study fills the gap by testing the role of innovation as a job requirement on innovative work behavior and mediating role of external rewards.

Literature Review

Innovative Work Behavior

Innovative work behavior refers to "intentional generation, promotion, and realization of new ideas within a work role, group or organization, in order to benefit role performance, the group, or the organization" (Janssen, 2000, p. 288; 2003; Van Der & Janssen, 2001). Janssen (2000), based on Scott and Bruce (1994), conceptualized innovative work behavior as a set of three inter-connected steps: 'Idea generation, Idea promotion and Idea realization' (Van der Vegt & Janssen, 2003, p. 730). Idea generation is the starting point of individual innovation that refers to the creation of ideas that are unique and beneficial for any work-related domain (Amabile *et al.*, 1996). Identification of problems, evolving trends, need for change, openness to experience, organizational climate and leadership induce idea generation (Drucker, 1985; Semedo, Coelho, & Ribeiro, 2017). Idea generation involves searching out applicable ways to improve the functioning of existing products and procedures, solving emerging problems and finding different alternatives for carrying out existing processes in a novel way that save time, energy and money (de Jong & den Hartog, 2010).

Perceived Innovation as a Job Requirement and Innovative Work Behavior

The goal setting theory of Locke (1976) may best explain the mechanism through which innovation as a job requirement may energize employees to engage in innovative behavior. Goal setting theory explains that specific and attainable goals set by employees enhance their productivity and performance. Goal, the aim of an action that an individual wishes to achieve can be a task, objective, quota, deadline and a performance standard (Locke *et al.*, 1981). The essence of goal setting is commitment to goals that increases employee performance. External rewards can be a strong determinant in employees' development of goal commitment (Locke, Latham, & Erez, 1988).

Drawing on the goal setting theory, this study assumes that if innovativeness is realized by universities as a requirement for the job in the higher education sector, and is

made a yard stick to measure the faculty's performance, and is linked with extrinsic rewards, most probably there will be chances that it will lead towards innovative behavior (Janssen, 2000; Shalley, 1995). Bakker and Demerouti (2017) also highlight that job demands can lead to a higher level of motivation when job resources such as rewards are present (p. 3). Moreover, research also suggests that when organizations set innovation as part of strategic goal setting, employees involve in innovative work behavior by setting smart goals (Bruccoleri & Riccobono, 2018).

A study found that creative requirement, defined as "one is expected, or needs, to generate work-related ideas" was a strong predictor of creativity in the product and process developments, over and above the variance explained by other factors such as leadership, autonomy, organizational support and time demands (Unsworth, Wall, & Carter, 2005). Another study from Germany found creative requirement positively related to innovative behavior. (Pundt, 2015).

Innovation as a job requirement may be regarded as a form of psychological contract in which employees feel dutybound to innovate as a part of their job contract. A study revealed that employee perception of the obligation to innovate was positively related to innovative work behavior (Ramamoorthy *et al.*, 2005). A study from USA found that employees who had a reputation of being innovative, and for whom innovation is a basic requirement, felt that innovative behavior was beneficial to their organization and themselves, therefore they engaged in innovative behavior (Yuan & Woodman, 2010). Zhao and Guo (2019) suggested that when leaders set expectations for employees to be creative and innovative, and involved themselves in creative activities, this enhanced the employees' engagement in innovative work behavior. Another study in the Asian context found positive association between leaders' expectation about employee creativity and creative performance (Adil & Ab Hamid, 2019). Based on the above argument, it is hypothesized that:

H_1: Innovation as a job requirement is positively and significantly related to innovative work behavior

Extrinsic Motivation

Extrinsic motivation refers to an individual's intention to engage in work, based on some anticipated goal which is external to work itself (Amabile, 1993). On the other hand, intrinsic motivation is defined as an individual's intention to engage in a work based on underlying curiosity, interest, feeling of enjoyment, self-expression or personal challenge to the work (Amabile, 1993).

Most of the creativity researchers, especially Amabile and her colleagues had been polarized to the term intrinsic motivation as a prime motivator in the creativity, and were thinking extrinsic motivation as detrimental to it (Amabile, 1983). However, later

conceptualization on it is rapidly changing; even Amabile has realized the synergetic effects of extrinsic motivation with intrinsic motivation to effect the creativity (Amabile, 1993).

No matter whether Amabile and other authors have recognized synergetic effects of extrinsic motivation, their major focus still remains on intrinsic motivators to influence creativity in the workplace (Amabile & Pillemer, 2012). Such that when individuals are more extrinsically motivated and less intrinsically motivated, their creativity tends to decrease (Amabile, Goldfarb, & Brackfleld, 1990). However later conceptualization of the theory observed some changes such as earlier version of Amabile (1983) documented detrimental effects of extrinsic motivation on creativity; later version recognized 'enabling and informational' value of extrinsic factors of creativity (Amabile, 1996, p. 119). Some authors such as Baer (1998) assert that the work of Amabile and her colleagues on the intrinsic motivation and creativity is based on 'over justification' hypothesis (p. 18).

This study posits that extrinsic motivation, in certain conditions, will be positively related to innovative work behavior. Devloo *et al.* (2014) found that intrinsic motivation partially mediated positive relationship between basic needs satisfaction and innovative work behavior in a longitudinal study of 76 engineering students. Authors feel that the impact of intrinsic motivation may differ with regard to the stage of innovation such that it may be greatly supportive in idea generation but less supportive in subsequent stages such as idea promotion and idea implementation. In such situations, extrinsic motivation may play a greater role to energize employees to attain 'externally imposed goals and rewards' (Devloo *et al*., 2014, p. 11). Comparison made by analyzing 8310 regular employees revealed that unlike private sector employees, public sector employees perceived innovative work behavior as an extra role behavior and required compensation for it (Bysted & Jespersen, 2014).

A recent study tested the role of innovation as a job requirement in influencing innovative work behavior among the employees of service sector in China. Results of Hierarchical Linear Modeling (HLM) revealed that innovation as a job requirement was positively related to innovative behavior in employees who were low in intrinsic interest. This effect was further moderated by perceived reward expectancy and organizational value for innovation, such that the impact of innovation as a job requirement was stronger when both of these expectancies were high (Shin *et al*., 2017). Authors suggest that mixed results of extrinsic factors and creativity relationships documented in extant literature warrant the need to test the role of reward contingencies that may strengthen or weaken the impact of innovation job requirement on innovative behavior (Shin *et al*., 2017). Kuczmarski and Kuczmarski (2019) suggest that in order to be engaged in

innovative behaviors, employees need motivation in terms of rewards that vary between financial and non-financial rewards. Saeed *et al*. (2019) studied the impact of green HRM practices on pro environmental behavior as an extra role behavior. They found positive association between green rewards and compensations in terms of monetary and non-monetary rewards and pro-environmental behavior. Based on the above discussion, it is hypothesized that:

H_2: Extrinsic motivation will mediate the relationship between innovation as a job requirement innovative behavior

Methodology

This research has used a quantitative approach to test the hypotheses. The conceptual framework of this study is based on Job-Demands Resources Theory (Bakker & Demerouti, 2017) and goal setting theory (Shalley, 1995). The data were collected through the survey questionnaire (Online and manual) from faculty members of higher education institutes of Pakistan using convenience sampling techniques. An online link of the survey was sent to faculty members on their official emails obtained from concerned ORICS or from official websites of universities. An informed consent was sought at the beginning of the survey. Data was analyzed using SPSS and AMOS for first and second stages respectively. A total of 100 questionnaires were distributed manually out of which 71 were received. Nine questionnaires were discarded as there was similar response on almost all items. A total of 62 manual questionnaires were retained. A total of 342 online responses were received yielding the total sample size of 404 for this study. As all questions in online survey were made compulsory, there were no missing values and all questionnaires were retained for analysis.

Measures

In order to measure innovation as a job requirement, a 5-item scale, developed by Yuan and Woodman (2010) was used. Sample item include "My job duties include searching for new technologies and techniques to improve my research and teaching output". Value of Cronbach's Alpha was .661. Innovative work behavior was measured using a 9-item scale, developed by Janssen (2000). Sample items include "I create new ideas for difficult issues". Value of Cronbach's Alpha was .907. To measure extrinsic rewards for creativity, an 8-item scale, developed by Yoon and Choi (2010) was used. Sample items include "When I perform creative work, it affects my promotion positively". Value of Cronbach's Alpha was .911.

Results

Demographic Profile

A total of 404 responses were collected. Out of them, there were 298 males and 106 females. From the experience perspective, more respondents reported to having experience of more than 6-10 years (154). The highest age group was 31-40 years (231).

Structural Equation Modelling

This study has used structural equation modelling to test the hypotheses following a two-step approach, as suggested by Anderson and Gerbing (1988). In the first step, a measurement model is estimated to test the reliability and validity of the model. In the second step, theoretical framework is converted into a structural model in AMOS to test the hypotheses (Caplan, 2010).

Measurement model: Firstly, measurement model is tested to know the relative contribution of items into particular factors in the model using factor loadings criteria (Harmann, 1976). Values of factor loadings should surpass the cut-off value of .5 and it should be statistically significant ($p<.05$) (Hair *et al*., 2010). In some instances, value up to .4 is also acceptable (Cua, McKone, & Schroeder, 2001).

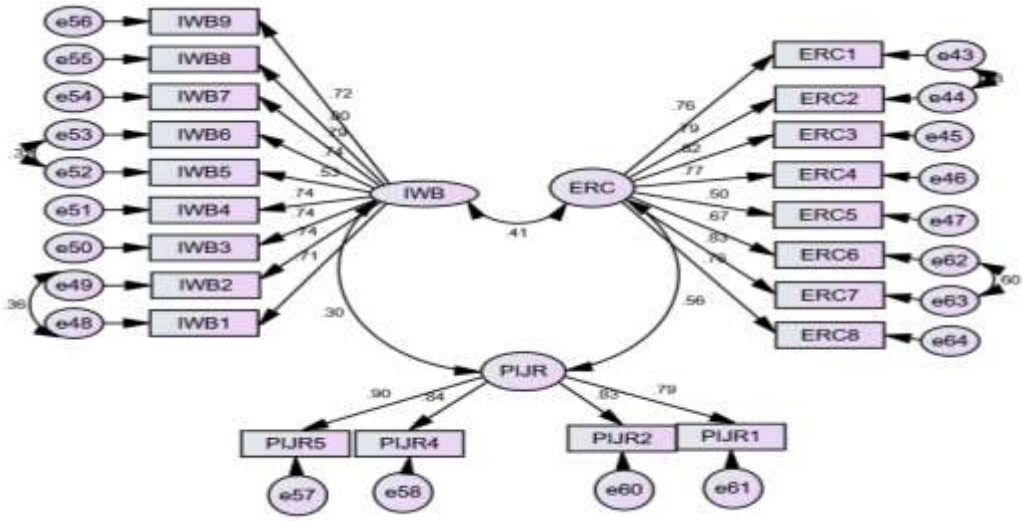

Fig. 1: *Measurement Model*

Table 1: *Factor Loadings, AVE and CR*

External rewards for creativity		Innovative Work Behavior		Perceived Innovation as a Job requirement	
Items	Factor Loadings (λ)	Items	Factor Loadings (λ)	Items	Factor Loadings (λ)
ERC1	.815	IWB1	.741	PIJR5	.905
ERC2	.804	IWB2	.773	PIJR4	.841
ERC3	.761	IWB3	.742	PIJR2	.825
ERC4	.707	IWB4	.748	PIJR1	.784
ERC5	.444	IWB5	.518	CR	.905
ERC6	.765	IWB6	.726	AVE	.705
ERC7	.899	IWB7	.785		
ERC8	.760	IWB8	.792		
CR	.912	IWB9	.711		
AVE	.57	CR	.911		
		AVE	.533		

Table 1 contains the values of factor loadings. Factor loadings indicate how each item contributes towards reflective construct (Harmann, 1976). Results suggest that all factor loadings are above .7, which are preferable. Value of one item i.e. ERC5 is .440 which is also acceptable in some cases (Carmines & Zeller, 1979; Cua *et al*., 2001). Another item also yields a factor loading of .50 which also fulfills the minimum criteria, as suggested. Values of Average Variance Extracted (AVE) are also above the cut off value of .5, thus indicating the existence of convergent validity (Fornell & Larcker, 1981). Model fit indices of measurement models generated for individual variables and three-factor model are presented in Table 2 below. Results indicate that Chi square values for individual as well as three factor models are acceptable below 3, and thus, excellently fit to the data. Values of comparative fit indices are also greater than 9 for all models. Value for PIJR is excellently well (CFI=.99) after removing one item. Values of RMSEA are below 1 and are moderately acceptable except for the PIJR, whose value is below .05, thus is greatly acceptable and yields better fitness to the data.

Table 2: *Model fitness for measurement model*

Variables	CMIN	DF	P	CMIN/DF	CFI	GFI	RMSEA
ERC	44.538	17	.000	2.620	.949	.904	.128
IWB	45.625	25	.007	1.825	.957	.914	.091
PIJR	2.193	2	.334	1.096	.99	.98	.031
3 factor measurement model	350.413	182	.000	1.925	.90	.80	.097

Note: ERC=external rewards for creativity; IWB=innovative work behavior; PIJR=perceived innovation as a job requirement

Structural model: The second step of SEM relates to the conversion of hypothesized relationships in the framework into the structural model. As is evident in

Figure 4, innovation as a job requirement as a reflective construct is depicted as an independent variable and innovative work behavior is shown as a dependent variable. 'External rewards for creativity' variable is modelled as a mediating variable. To check whether this model is good fit to the data, following indices are taken into account (Kline, 2015). The Relative Chi Square is 1.904 (CMIN/Df= 344.664/181); the Comparative Fit Index (CFI), which compares fitness between the target model and the independent or Null model is .90; and RMSEA value is 0.75. Results indicate that the value of Chi square is excellent, whereas values of CFI and RMSEA are moderately acceptable.

Hypotheses Testing

Impact of innovation as a job requirement on innovative work behavior (H_1)

Fig. 2: Impact of innovation as a job requirement on innovative work behavior

Figure 2 reveals the structural model depicting relationship between innovation as a job requirement and innovative work behavior. Results reveal that innovation as a job requirement is positively and significantly related to innovative work behavior as the value of the regression coefficient is positive and significant (β=.291; $p<.05$). Therefore, H_1 is accepted.

Mediating Role of External Rewards

This study has followed Baron and Kenny's (1986) three-step approach to test the mediation. In the first step, the relationship between independent variable and dependent variable is significant (Fig. 2 above). In the second and third steps, relationships between the independent variable and the mediator, and the mediator and the dependent variable are checked respectively. Results (Fig. 3) suggest a positive relationship between innovation as a job requirement and external rewards (β= .544; $p<0.05$). Thus, the second step is completed.

Fig. 3: Impact of Innovation as a job requirement on external rewards

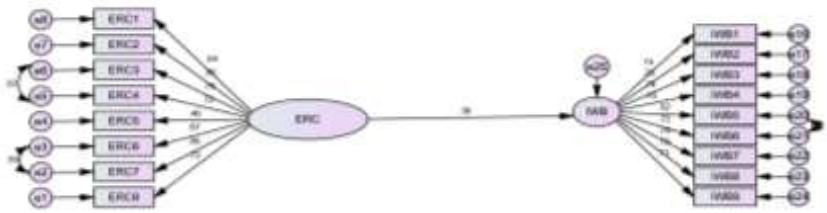

Fig. 4: Impact of External Rewards on innovative work behavior

Further, it is checked whether the relationship between the mediator and the dependent variable is significant, and, what are the changes in the relationship between the independent and the dependent variables after the inclusion of mediator. Figure 4 presents the results of this analysis. It is evident that mediator such as external rewards for creativity has a positive and significant impact on the dependent variable, that is, innovative work behavior (β=.381; p<.05). As the third step is also satisfied, Table 3 shows that after the inclusion of the mediator, the value of the regression coefficient is decreased, and the P value is greater than .05. Thus, in this case, when regression coefficient decreases, and relationship becomes insignificant after inclusion of mediator, it indicates that the mediator fully mediates the relationship between independent and dependent variables. In this case, it is safe to conclude that external rewards for creativity fully mediate the relationship between innovation as a job requirement and innovative work behavior.

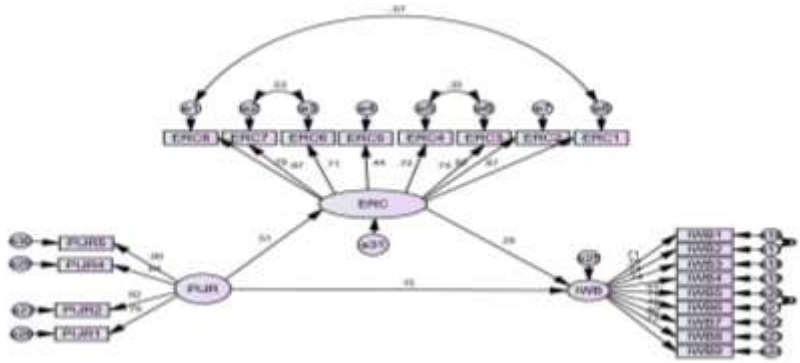

Fig. 5: *Role of ERC as a mediator*

Table 3*: Mediation of External rewards*

Variables			Direct Effects		Indirect Effects		Hypothesis Support
			Estimate	P-Value	Estimate	p-Value	
IWB	⟵	PIJR	.301	***	0.14	.249	H_2 is accepted (Full mediation)

Conclusion

This study collected data from faculty members of Pakistani universities. The HEC has made it necessary for faculty members to publish research papers in reputed national and international journals in order to get promotions. Moreover, HEC and some other agencies have also made huge sums of the amount on disposal of academic researchers for innovative research-oriented projects. This has become a pressing thing which motivates faculty members to generate new ideas, get support from the university and regulatory authorities, and try to implement it. This study tested this mechanism where we modelled innovation as a job requirement as independent variable to see its impact on the faculty's innovative work behavior. The mediating role of external rewards was also checked. Results of structural equation modelling reveal that perceived innovation as a job requirement is positively related to innovative work behavior. Findings of this study augment the claim of goal setting theory, which states that goals set by individuals become a motivational factor for them and result in increased performance (Locke *et al*., 1981). Moreover, research also suggests that innovation as a job requirement becomes an organizational level motivation to innovate, which also fosters employee performance. Findings of this study are also in line with previous research which found creative requirement was not only positively related to innovative work behavior in health related employees, but its impact was stronger than job autonomy and leadership (Unsworth *et al*., 2005). In some instances, innovation as job requirement is considered as a part of psychological contract as it reflects sector wise requirement or duty to be innovative and creative in order to fulfill the basic requirement and degree of excellence in the particular job (Ramamoorthy *et al*., 2005).

This study also found the mediating role of extrinsic rewards between impact of perceived innovation as a job requirement and innovative work behavior. The major intent of this study is to suggest that when innovation is made as a job requirement and organizations also provide some tangible rewards, it may motivate employees to engage in innovative work behavior. Most of the literature on innovation stresses employee intrinsic motivation as a precursor to innovative work behavior and external rewards, sometimes as a detrimental to it (Amabile, 1996). As intrinsic and extrinsic motivations are not considered mutually exclusive, they may have differential impacts on creativity and innovation (Deci & Ryan, 1985). Therefore, some other researchers have also acknowledged the informational value of external rewards for innovation related behaviors (Zhou & Shalley, 2003). Hammond *et al*. (2011) and Shin *et al*. (2017) have found a positive relationship between monetary rewards and innovative behavior. Shin *et al*. (2017) has found a positive relationship between innovativeness as job requirement

and innovative work behavior among employees who had lower levels of intrinsic motivation for innovation.

This study has some practical implication. As the work-nature of faculty members is rapidly changing, it is becoming challenging for faculty members to gain higher status in universities due to the innovativeness attached as a requirement for their jobs. The leadership in universities and regulatory bodies should be aware that making innovation as a job requirement for faculty may be burdening for them unless it is sufficiently aligned with tangible rewards that may act as motivational factors for innovative behaviors. These rewards may be monetary in nature, or be in the form of higher level of promotions, provision of research related funds and inclusion of faculty members in decision making bodies, where they can utilize their innovative potential to benefit themselves, and the country.

This study is not free from limitations. A major limitation is its cross-sectional design which precludes causal relationships. Future research may unearth the mechanism through a longitudinal study which may consider how long this innovation as a job requirement motivates employees. Secondly, this study has collected data from a smaller sample, therefore, future research may collect data from larger samples across Pakistan so that the generalizability issue may be resolved. Thirdly, although this study has found positive relationship between external rewards and innovative behavior and mediating role of external rewards as well, it has not controlled intrinsic factors which might be a major limitation as well. Future research may control intrinsic motivation to rule out any confounding impact of intrinsic factors.

Innovative work behavior is equally important for the faculty members of higher education sector because they have the responsibility to solve societal problems through conducting scientific research by applying unique ideas. Owing to the recent regulatory requirements placed on the faculty to be innovative, this study has suggested very important findings that innovation as a job requirement may lead to innovative behavior when they are provided with plenty of external rewards.

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