

WHY ALL INNOVATIONS ARE NOT A BREAKTHROUGH?

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ABSTRACT

This study is aimed at empirically investigating the impact of individual innovative behavior on firms' radical innovation where this behavior is shaped by performance and image outcome expectations. Further it explores the buffering effect of firms' imitation orientation on the positive relationship between individual innovative behavior and firms' radical innovation. This study is an attempt to find answers to the question why all innovations are not a breakthrough? Data was collected from 276 employees of 24 advertising agencies located in Lahore following convenience sampling technique. Structural equation modeling technique was used for data analysis. Findings of this preliminary study indicated that expected positive performance outcomes are positively associated whereas expected image risks are negatively associated with individual innovative behavior. Although statistical significance was not achieved for some of the relationships yet they confirm the proposed relationship. Moreover, firms' imitation orientation provides an indication of the buffering effect on the relationship between innovative behavior and radical innovation. This study is particularly important for advertising, design driven and manufacturing organizations where radical innovations play a significant role in gaining competitive advantage. This study contributes to existing literature by measuring individual innovative behavior as the predictor of firms' radical innovation. Moreover, it is the first attempt to directly theorize and test the moderating role of firms' imitation orientation on the relationship between individual innovative behavior and firms' radical innovation.

Keywords: *Imitation orientation, innovative behavior, outcome expectations, radical innovation*

1) INTRODUCTION

Why all innovations are not a breakthrough? In this rapidly changing technological environment, attaining only employees' willingness to innovate is not sufficient to get an edge over competitors. Organizations have to struggle more in order to blow away the competition by bringing in new and distinctive technological procedures. Firms have to ensure that the employees' innovativeness is fully exploited by the management in the favor of organizational outcomes. Alexander and Knippenberg (2014) express that the effects of unanticipated challenges related to idea development and idea promotion are stronger in case of radical innovation than in incremental innovation. Therefore, it is suggested that by developing radical innovations, in the form of new businesses, services and products, organizations can ensure competitive advantage and growth (Leifer et al., 2000; Christensen, 1997; March, 1991).

It has been accepted that radical innovations create potential for major changes (Norman & Verganti, 2014) and provide boost to the firm's competitive edge in terms of technology, market position, and customer value in general. Keeping in view the intense competition, management put great emphasis on promoting radical innovation in the organization. However, surprisingly many companies aiming for radical innovation fall short of basics (BCG, 2014) and fail to come up with radical innovations (Takayama et al, 2002). This study proposes that employees' innovative behavior in an organization does not necessarily imply that the organization will come up with some remarkable achievement in the form of entirely new and distinctive product, service or process. One of the possible reasons behind is the management's tendency towards imitation that buffers the effect of employees' innovative behavior on firms' radical innovation. Individual innovative behavior is defined as the intentional introduction or implementation of new ideas, products, processes and procedures by individuals to their work role (West & Farr, 1990, 1989).

Radical innovation can be defined as new product, service or process that differs substantially from a firm's existing practices. It is attributed to willingness to take risks, resources for creativity, and career commitment (Madjar, Greenberg & Chen, 2012). Previous researches have focused on many factors that can influence radical innovation. Particularly, the manner in which a firm is organized might have an important effect on its radical innovation performance (Damanpour, 1991). Therefore, Gatignon

and Xuereb (1997) stressed that the firm's strategic orientation has greater influence on its innovation performance. Chandy and Tallis (1998) studied firm's willingness to cannibalize as an important predictor of radical innovation. Unfortunately, despite the recent advances in innovation literature, research in this area continues to be limited, disparate, and somewhat equivocal (Wind & Mahajan 1997; Kleinschmidt & Cooper 1991).

This study is aimed at empirically investigating the impact of individual innovative behavior on firms' radical innovation where this behavior is shaped by employees' expected positive performance outcomes, expected image risks and expected image gains. It also studies whether firms' imitation orientation would buffer the impact of individual innovative behavior on firms' radical innovation or not? It will provide a comprehensive picture of employees' image and performance outcome expectations that lead employees to engage in innovative behavior and final outcomes of these behaviors in the form of radical innovation. Despite the abundance of literature documenting the numerous types of firms' strategic orientations and their impacts on firms' innovations, the moderating role of imitation orientation on radical innovation appears to have been overlooked.

Specifically, it is theorized that employees get themselves engaged in innovative behavior in the expectations of certain outcomes. This behavior can further result into radical innovation. But firms' strategic orientation in the form of imitation orientation indulges employees to bring ideas from competitors. In such circumstances, although employees bring novel ideas, yet firms may not come up with some breakthrough or radical innovation because of management's increasing focus on competitors' actions (Lewrick, Omar & Williams, 2011).

2) LITERATURE REVIEW

2.1) Expected positive performance outcomes and individual innovative behavior

Individual innovative behavior has been predicted by various factors such as perceived organizational support (Yuan & Woodman, 2010), supervisor relationship quality (Yuan & Woodman, 2010; Janssen & Van Yperen, 2004), organizational culture and climate (Scott & Bruce, 1994) and job characteristics (Oldham & Cummings, 1996). It has utmost importance for organizational outcomes and in many organizations actions (extrinsic and intrinsic rewards) are taken to stimulate innovativeness within employees (Martins & Terblanche, 2003). People act on the basis of consequences or, more specifically, the expected consequences of their behavior (Vroom, 1964). Bringing performance gains is one of the major reasons for which employees incline to innovate at their work (Yuan & Woodmen, 2010). When individuals expect that their creative performance will help them grow at their workplace, they engage themselves in creative performance.

Innovation is defined as a new technology or combination of technologies that offer worthwhile benefits (McDermott & O'Connor, 2002). Individuals and groups intend deriving anticipated benefits by undertaking innovative activities (Janssen et al., 2004) which ultimately results in performance improvement (Bowen & Lawler, 1992). Creativity has become one of the major sources for growth and has been measured in terms of behaviors and outcomes of such behaviors (Montag et al., 2012) through which employees can improve their performance (Fernandez & Moldogaziev, 2012).

Keeping with Yuan and Woodmen (2010), according to most cited efficiency-oriented perspective, organizations make rational decision in adopting innovation to maximize their efficiency gains (Abrahamson, 1991) and these decisions are based on expected positive performance outcomes (Yuan & Woodmen, 2010). Therefore it is hypothesized;

H1: Expected positive performance outcomes are positively associated with individual innovative behavior

2.2) Expected image risks and expected image gains and individual innovative behavior

Regardless of performance gains, the act of engaging in innovative behaviors serves as a signal that enlightens an individual in the social environment of an organization (Yuan & Woodman, 2010). According to the socio-political perspective in innovation literature, employees make rational decisions to get them engaged in innovative activities on the basis of image considerations. The image expectations can be split into two categories: expected image risks and expected image gains. Expected image risks refer to the individuals' expectations that their innovative behavior would be perceived negatively by others in the organization, whereas expected image gains refer to the individuals' expectations that their innovative behavior would be perceived positively by others in the organization. This distinction can also be made on the basis of defensive (protecting an individual's established image) and assertive (improving an individual's social image) impression with the management (Schlenker, 1980). Propagating radical ideas may run the risk of falling into conflict with co-workers and supervisors (Buchanan & Boddy, 1992) and may harm the image of employees therefore they may resist innovating. Seibert et al. (2001) found positive association between proactive personality and individual innovation behavior. When employees expect that their innovative behavior will enhance their image in the organization, they tend to innovate and vice versa. Therefore, it is hypothesized that;

H2: Expected image risks are negatively associated with individual innovative behavior

H3: Expected image risks are negatively associated with individual innovative behavior

2.3) Individual innovative behavior and firms' radical innovation

Firms can sustain their competitive edge through continuous stream of innovations with multiple product introductions (Rubera & Kirca, 2012). The foundation of all innovations is creative ideas, and it is the individual who generates, promotes, discusses, modifies, and realizes these ideas (Scott & Bruce, 1994).

Remarkable performance of an organization ultimately benefits its employees in the form of rewards and recognitions. The organizations develop and maintain their competitive edge by continuously changing their processes according to the needs of customers. For this purpose they are required to motivate their employees towards innovative behavior (Rank et al., 2004). Innovative behavior has great importance for organizational outcomes and organizations take different actions to stimulate innovativeness at workplace (Martins & Terblanche, 2003). This innovativeness ensures the introduction of novel ideas that may bring a breakthrough innovation in the organization. Keeping in view the above discussion, hypothesis 4 is stated as;

H4: Individual innovative behavior is positively associated with radical innovation

2.4) Moderating role of imitation orientation on individual innovative behavior and radical innovation

Entrepreneurial orientation is a very critical factor in finding the strategic direction for a company. It is associated with methods, practices and decision-making styles that managers use (Covin & Slevin, 1989; as cited in Real, Roldán & Leal, 2014). This leads companies to develop product-market innovations, take risks and behave proactively (Miller, 1983). Firms follow various strategic orientations during the course of business like market orientation, customer orientation and competitor orientation. Keeping in view the fact that radical innovation may destroy the fortune of firms (Foster, 1986) by distorting previous product or processes, firms usually adopt imitative strategy when they have competitor orientation (Zhou, Yim & Tse, 2005). In other words they are unwilling to cannibalize on existing investments (Nijssena, Hillebranda & Vermeulen, 2005), productivity and controls (Amabile, 1998).

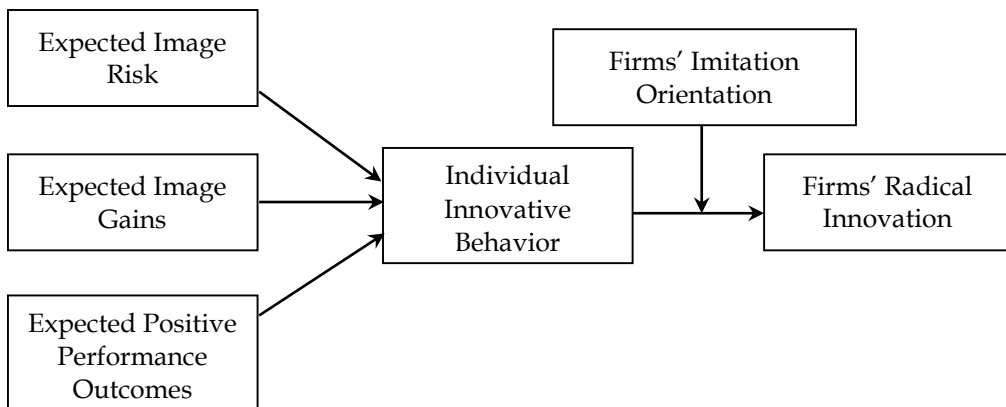
Significantly greater risks are involved in the development of radical innovations because they require substantial investments in new technologies and bring greater uncertainty of outcomes (Alexander & Knippenberg, 2014; Garcia & Calantone, 2002; Danneels & Kleinschmidt, 2001). Therefore with an imitation orientation, a company tries to evade the unwarranted costs attached with development of new technologies and adopts competitor's ideas and technology (Naranjo-Valencia et al., 2011) to reduce the risk of failure. From this perspective firms that wish to grow or

avoid decline have no option but to imitate (Nelson & Winter, 1982). Lewrick, Omar and Williams (2011) found, when it comes to radical innovations, competitor orientation appears to be counter-productive for mature companies. Consideration of competitors' capabilities and product portfolios provides a convenient source of innovation to a business (Lukas & Ferrell, 2000). According to Christensen (1997), rationally managed and well-established firms may fail to embrace breakthrough innovations because they are too customer oriented. Successful innovation is the driver for growth therefore imitation becomes inevitable and successful firms are imitated by others seeking to gain a share of excess profits (Jenkins, 2014). Therefore, it is hypothesized that;

H5: Firms' imitation orientation moderates the positive relationship between individual innovative behavior and firms' radical innovation

2.5) Research model

The proposed hypothesized model is given below:



3) RESEARCH DESIGN

This research is explanatory in nature. It is conducted to predict the relationship among various variables proposed by the study. The unit of analysis was individual employees. The study setting was non-contrived and it was conducted on 24 different advertising agencies located in Lahore. The researcher interference was minimal. It was a cross-sectional study collecting the data from respondents at one point in time.

The population of this study consisted of employees working at different advertising agencies at different levels in Lahore. After visiting various agencies, 24 of them gave access to their employees thus comprising the target population for our study. Convenience sampling technique was adopted for data collected from respondents. Usable sample of 276 employees was retained for analysis after matching employee and supervisor dyads. All the respondents were male. Majority of the respondents (86%) belong to an age group of 18-35 whereas remaining belonged to an age group of 36-50. Contractual employees were 92% whereas 8% were permanent. The representation of Designing department was about 59.2% gaining the highest count followed by printing department with 11.8% respondents. The average job tenure of the respondents was 3.91 years.

Survey was conducted by personally visiting the study organization. For this purpose initially a permission letter obtained from the university was presented in the human resource or administration department of each organization. In order to seek permission for data collection, the purpose of the study and questionnaire items were briefly explained to the contact person to ensure him that no secrecy issues shall be compromised during the survey. Employees were asked to rank their expectations regarding image and performance outcomes of individual innovative behavior since they could better express their behaviors. In order to prevent common method bias, individual innovative behavior was measured by their immediate supervisors. Data regarding firms' radical innovation and imitation orientation was gathered from executives of the organizations (Appendix C). Later on, the employee-supervisor dyads as well as the executive responses were used for data analysis.

3.1) Measures

The scale for radical innovation ($\alpha = 0.87$) was adapted from Nijssena et al. (2005) which consisted of 3-items. The scale for Individual innovative behavior ($\alpha = 0.92$) consisted of 10 items adapted from Janssen (2000). A 3-item scales for expected positive performance outcomes ($\alpha = 0.90$), expected image risks ($\alpha = 0.61$) and 4-item scale for expected image gains ($\alpha = 0.712$) were adapted from Yuan and Woodman's (2010). Firms' imitation orientation ($\alpha = 0.35$) was measured by 4-items scale adapted from Madjar et al.'s (2012) scale of competitors' orientation. All variables

were measured on 5-item Likert scale where 1= strongly agree and 5 = strongly disagree.

4) ANALYSIS AND RESULTS

Data was entered in SPSS and analyzed through structural equation modeling (SEM) using AMOS. The reliabilities of scales were measured by Cronbach’s alpha. Independent sample t-test was conducted to compare means among different age groups and employment status. All the cut off points are referred to Hair et al. (2006).

4.1) Comparison of group means

Independent sample t-test was conducted to find if there is any statistically significant difference between two age groups of respondents across study variables.

Table 1: Comparison of Group Means

	Age	Mean	Std. Deviation	Sig (2-tail)
EPP0	18-35	12.1231	1.49486	.002
	36-50	10.4545	2.01810	
EIR	18-35	8.4154	2.51801	.064
	36-50	9.9091	1.81409	
EIG	18-35	15.9077	2.40262	.239
	36-50	15.0000	1.94936	
IIB	18-35	35.9846	5.83227	.735
	36-50	35.3636	3.88002	

Table 1 indicates that when equal variances are assumed, as Levene’s test for equal variances is insignificant for all variables, employees belonging to age group of 18-35 are significantly different from those of 36-50 with respect to expected positive performance outcomes. However they do not show any significant difference with respect to innovative behavior and image outcome expectations.

4.2) Structural equation modeling

SEM consists of six stages. Four are completed in confirmatory factor analysis results to support the measurement model and two are completed in structural model. In our case while examining the measurement model we found that χ^2 statistics is significant below 0.1 level and degree of freedom is (302) with p-value (.011). Chi square value indicates if there is any significant difference between observed and estimated values. For a model to be good fitted, the chi square value should be insignificant. The model fit has been analyzed by absolute, incremental and parsimonious model fits through the values of CMIN/DF, GFI, CFI, AGFI, RMSEA, at 90% confidence interval for RMSEA and PCLOSE.

Table 2: Goodness of Fit Measures

GOF index	Structural Model	CFA Model
χ^2 (p-value)	410.57 (.000)	360.3 (.011)
DF	306	4
CMIN/DF	1.342	1.195
GFI	.747	.760
CFI	.889	.939
AGFI	.687	.699
RMSEA	.068	.051
PCLOSE	.056	.459

Table 2 represents various goodness of fit indices to validate proposed model. The absolute fit indices (GFI = .760) and incremental fit indices (CFI = .939) are within the acceptable range and provide an evidence for goodness of fit of the model. Similarly, RMSEA is a measure of badness of fit therefore it should be smaller than 0.08. In current study RMSEA is 0.051 indicating a good fitted model. Therefore, overall we can conclude that model is good fitted with the data and provide partial evidence for model validity.

Table 3: Correlations among Constructs

	CR	AVE	MSV	ASV	EPPO	EIR	EIG	IIB	IO	RI
EPPO	0.903	0.755	0.320	0.126	0.869					
EIR	0.612	0.376	0.326	0.102	0.099	0.613				
EIG	0.712	0.424	0.320	0.121	-0.566	-0.174	0.651			
IIB	0.917	0.528	0.137	0.065	0.324	-0.370	0.008	0.727		
IO	0.342	0.351	0.080	0.030	-0.118	0.083	0.282	-0.206	0.592	
RI	0.866	0.684	0.326	0.147	-0.424	-0.571	0.421	0.207	-0.085	0.827

The fit statistics indicate that the estimated model reproduces the sample covariance matrix reasonably well. Further, evidence of construct validity is present in term of convergent validity which is mentioned in the Table 3 in terms of construct reliabilities and discriminant validity which is assessed by $AVE > MSV$ and $AVE > ASV$ given in the table and nomological validity which can be verified from correlation table. As can be seen from the table, CR for most of the constructs is above .7 thus meeting the criteria for convergent validity whereas .612 for expected image risk is near to .7. Discriminant validity is checked by comparing the off-diagonal values in the table with diagonals. In Table 3, the off-diagonal values are the construct correlations that should be smaller than the square root of the AVE that is represented by the diagonal values. The table represents similar pattern thus providing an evidence of discriminant validity. Therefore, overall it can be said that model is valid keeping in view the effect of smaller sample size. Thus we are confident at this point that the measures behave as they should in terms of uni-dimensionality.

The structural model is also estimated and assessed. The overall fit statistics are given in Table 4. The value of chi square ($\chi^2 = 410.56$) is significant with 306 degrees of freedom ($p < .05$), and normed chi-square is 1.342. The model CFI is .889 with RMSEA of .068 and 90% confidence interval of RMSEA is .049 to .084. All these measure are within a range that would be associated with a good fit. These diagnostics suggest that model provides a good overall fit.

Table 2: Goodness of Fit Measures

GOF index	Structural Model	CFA Model	Difference
χ^2 (p-value)	410.57 (.000)	360.87 (.011)	49.7
DF	306	302	4
CMIN/DF	1.342	1.195	.147
GFI	.747	.760	.013
CFI	.889	.939	.05
AGFI	.687	.699	.012
RMSEA	.068	.051	.017
PCLOSE	.056	.459	

We can also see that overall model fit changed very little from CFA model. The only substantive difference is a chi-square increase of 49.7 and difference of 4 degrees of freedom.

Table 5: Standardized Regression Coefficients

Structural Paths			Estimate	P
EPP0	→	IIB	.493	.001
EIR	→	IIB	-.377	.020
EIG	→	IIB	.228	.144
IIB	→	FRI	.216	.094

The standardized path coefficients are shown in Table 5. Table shows the estimated standardized structural path estimates. The structural path estimates for expected positive performance outcomes ($\beta = .493$, $p = .001$) and expected image risks ($\beta = -.377$, $p = .020$) are significant for individual innovative behavior and in the expected direction therefore hypotheses 1 and 2 are significantly supported. However, remaining three are insignificant but in the expected direction thus partially supporting the theory.

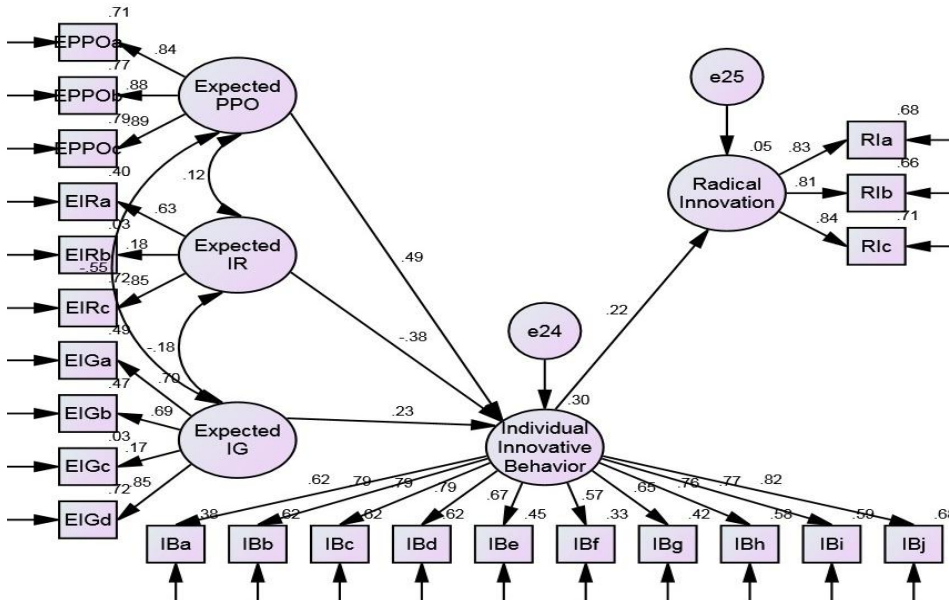


Figure 1: (without imitation)

In order to test moderation firms' imitation orientation was incorporated into the model given in figure 1. By the inclusion of moderator the variation explained by individual innovative behavior ($\beta = .216, p = .094$) in firms' radical innovation is reduced to $\beta = .163$ as shown in figure 2. Although the change in regression weight is not significant yet it provides an indication of the buffering effect of firms' imitation orientation on firms' radical innovation. Moreover, it can also be seen from the figure that firms' imitation orientation adversely affects firms' radical innovation showing negative relationship ($\beta = -.38$).

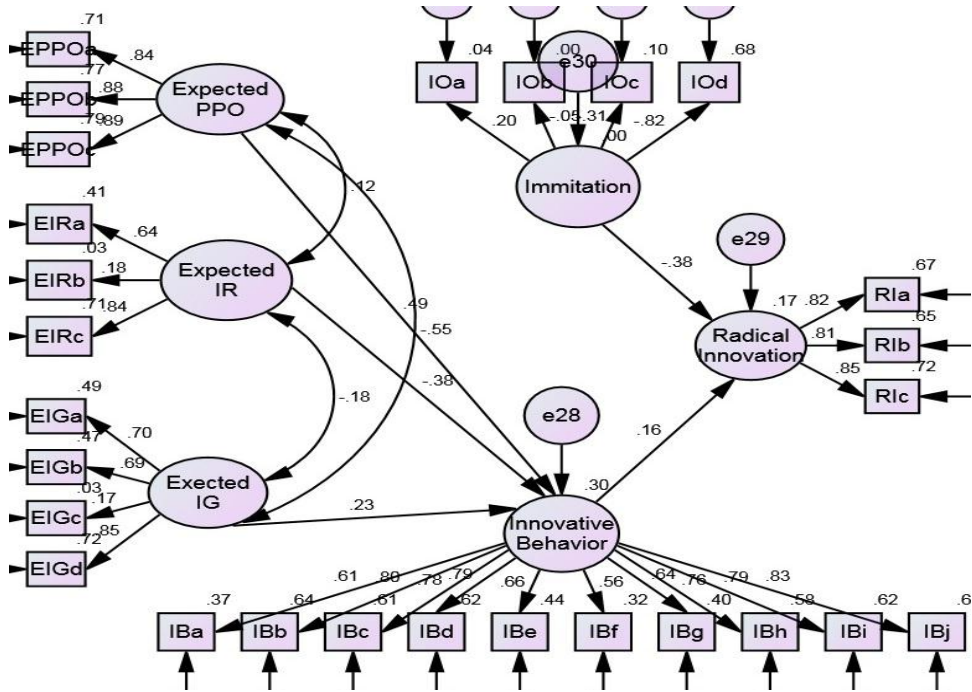


Figure 2: (with imitation)

4) DISCUSSIONS

4.1) Findings

The study shows some important results. Hypothesis 1 states that expected positive performance outcomes are positively associated with individual innovative behavior. This hypothesis is significantly supported by the data. Similarly hypothesis 2 is also significantly supported by the study which states that expected image risks are negatively associated with individual innovative behavior. These results are consistent with previous study conducted by Yuan and Woodmen (2010) and Cingoz and Akdogan (2011) who found positive relationship between expected positive performance outcomes and individual innovative behavior and negative relationship between expected image risks and individual innovative behavior. Hypothesis 3 which states that expected image gains are positively associated with innovative behavior and hypothesis 4 which states that individual innovative behavior is positively associated with radical innovation, were not significantly supported however they confirm the direction of relationships proposed in the theoretical model thus providing

partial support to the relationship. The study further tests the moderating role of firms' imitation orientation on the relationship between individual innovative behavior and firms' radical innovation. Although the effect is not significant yet it provides an indication of the buffering effect of the moderator on radical innovation which suggests that firms' imitation orientation may affect the relationship between individual innovative behavior and firms' radical innovation.

4.2) Theoretical implications

This study suggests significant implications for the literature. First, it builds theoretical foundation for the investigation of firms' imitation orientation as an important strategic orientation of the firms that hinders firms' radical innovation, particularly in the cases where employees are willing to innovate. This theoretical framework is ready to test for future researches. Second, it confirms the relationships established by Yuan and Woodman (2010) as well as Cingoz and Akdogan (2011) thus highlighting expected positive performance outcomes and expected image risks as important determinants of individual innovative behavior. One possible explanation of insignificant relationships, such as effect of expected image gains on innovative behavior, the relationship between individual innovative behavior and firms' radical innovation as well as the moderating effect of firms' imitation orientation; is that the sample size is too small to be a true representative of the population. Moreover, data has been collected from only one industry, wherein the employees' perceptions may significantly differ upon firms' imitation orientation and firms' radical innovation. The present study has been conducted in Asian context, where the employees' perceptions, preferences, performances, capabilities, organizational innovative culture, employee' manager relationship may differ from western context (Souidenet al., (2006). These relationships may be tested in different industries with larger sample size thus opening new horizons for further investigations.

4.3) Practical implications

The study offers some implications for practitioners. It suggests that when employees expect certain benefits such as efficiency gains by engaging in innovative behavior, they tend to innovate. Therefore, organizations should establish explicit rewards for innovative employees in the expectations of which employees get themselves engaged in innovative

behavior. However, when employees run the risk of image distortion inside the organization, they resist innovating in order to secure their image among co-workers and managers. This finding implies that, management should develop a work environment that is conducive to innovative activities so that employees may not have to face the conflicts with co-workers or management in the case of bringing extraordinary novel ideas. When employees find the support and image survival in the organization they would bring new ways of product development, services and processes.

4.4) Theoretical contributions

This study contribute to innovation management literature in a number of ways: First, it separates the employees' innovative behavior from the outcomes of this behavior for the firm by exploring one of the organizational innovation orientations- radical innovations. Second, this study is the first attempt to directly theorize and test the moderating role of imitation orientation for the firms' radical innovations, revealing why all innovations are not breakthrough? Third, by testing the relationship between outcome expectations and individual innovative behavior, this study proposes that these outcome expectations are one of the important factors that may affect radical innovation indirectly by shaping individual innovative behavior. These distinctions from literature will provide an opportunity for academicians and researchers to measure innovation in a more refined way.

4.5) Practical contributions

This study is significant for practitioners too in that; it highlights the organizations' strategic orientation that could possibly prevent innovative employees to strive for unique and distinctive ideas in the form of imitation orientation. This study will particularly be important for manufacturing, design- driven (Vergati, 2008) and customer oriented (Lewrick, Omar & Williams, 2011) organizations where radical innovation can make a remarkable difference in getting ahead. Moreover, it will guide managers to establish rewards and recognition systems as an outcome of innovative tasks that may influence individual innovative behavior and ultimately to radical innovations.

4.6) Limitations and future directions

This study faced with certain limitations. First, data was collected from advertising agencies located in one city therefore the results may not be generalized over advertising agencies located in other cities of Pakistan. Data from various cities is recommended for future researches making the results more generalizable. Second, the sample was selected using convenience sampling technique thus affecting the representativeness of the population. Future researches are suggested to collect data following random sampling technique such as cluster sampling. Third, the sample size is very small that may affect the viability of results and data analysis technique, in future researches large sample size is recommended. This study investigated only firms' imitation orientation as the strategic orientation that may prevent firms' radical innovation. Other factors such as supervisors' risk attitude and employees' acceptance of change should be studied to find their effect on radical innovation. Moreover, this research focused on radical innovation as firms' innovation orientation, other levels of innovation such as incremental innovation is recommended to be studied to find the impact of firms' imitation orientation on different levels of innovation.

5) CONCLUSIONS

Findings of this study validate the proposed model and indicate that although statistical support is not achieved yet firms' imitation orientation provides an indication of the buffering effect on the relationship between innovative behavior and radical innovation. It is also suggested that expected image risks are negatively whereas expected positive performance outcomes are positively associated with individual innovative behavior. This study highlights the firms' imitation orientation as an important factor which prevents employees' innovative behavior to be converted into breakthrough innovation. This study will prove a milestone in innovation literature and would open new horizons for theory building in future researches.

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