

Innovative Work Behavior (IWB) in the Knowledge Intensive Business Services (KIBS) Sector in Malaysia: The Effect of Leader-Member Exchange (LMX) and Social Capital (SC)

Sethela June¹ & Yeoh Khar Kheng¹

¹ College of Business, School of Business Management, Universiti Utara Malaysia, Sintok, Kedah, Malaysia

Correspondence: Sethela June, College of Business, School of Business Management, Universiti Utara Malaysia, Sintok, Kedah, Malaysia. Tel: 60-4-928-7531. E-mail: sethela@uum.edu.my; sethelajune@yahoo.com

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Abstract

Today, innovation is no longer belongs to the research and development (R&D) lab per se. In fact, innovation can be considered more of a product of the human creative mind with an inherent tacit knowledge. In order to be a successful knowledge-based economy, employees must continually be innovative. As such, this research which relates to innovation by and large will assist in creating better understanding of innovation from the behavioral perspective. In the context of business, innovation has long been embraced by organizations seeking to remain viable, effective and competitive in a dynamic business environment. Looking at the perspective of individual level innovation, this study seeks to examine whether employees' innovative work behavior (IWB) can be influenced by leader-member exchange (LMX) and the social capital (SC) in the knowledge intensive business services (KIBS) sector in Malaysia. Using questionnaire mail survey a total of 318 data was obtained from the knowledge workers of the Multimedia Super Corridor (MSC) status companies in Malaysia. The findings show that LMX and SC was significantly and positively related to IWB. The result also reveals that SC has a stronger influence on the IWB of employees as compared to LMX. Discussions and implications of the study are discussed.

Keywords: innovative work behavior, leader-member exchange, social capital, knowledge-intensive business services, knowledge worker

1. Introduction

Innovation has become a prerequisite in many knowledge based economy. As such many efforts have been carried out by the Ministry of Science, Technology and Innovation (MOSTI) of Malaysia in support of innovation existence. The existence of patents/invention in a country can be contributed by employee innovative work behavior (IWB) (Scott & Bruce, 1994). The IWB is defined as a deliberate introduction and solicitation of ideas (either between individuals, groups or organization as a whole), processes, products or procedures that are relatively new to the unit of adoption, intended to benefit greatly, either the individuals, groups or the organization (West & Farr, 1990). Nonetheless, Malaysia has a low number of patents as compared to other countries as recorded by the United States Patent and Trademark Office (USPTO). In 2004, there were only 92 patents secured by Malaysia which is much lesser than other Asian countries such as Korea (4,428) and Taiwan (5,938) while Singapore managed to obtain 449 patents (Kassim, 2009).

Instead of relying on the manufacturing sector in meeting the global competition, Malaysia needs to consider the business services sector as a strategy to enter into the global knowledge-based economy (Malaysian Institute of Economic Research (MIER), 2010). In line with this, in order to get closer to the benchmark of developed countries like the United Kingdom (UK), involvement in the knowledge intensive business services (KIBS) sector is seen as the answer. KIBS is defined as a form of service which entails economic activities that will give rise to the creation, accumulation or dissemination of knowledge (Miles et al., 1995). In the UK, the KIBS sector contributed roughly 20% of both the GDP and the employment while it made up approximately 14% of the country export (Economic Planning Unit (EPU), 2010). The KIBS and employee IWB are related simply because KIBS does not rely on research and development (R&D) employees per se, but it is also organized around the potential of all employees (Bessant, 2003). In other words, the level of innovation will be greater if

efforts been mobilized to have all the employees in the organization regardless of their positions to engage in an innovative behavior (Nystrom, 1990).

1.1 Research Justifications

The presence of KIBS in Malaysia is largely over-looked, under-theorized and under-documented (Jarman & Chopra, 2008). In many academic literatures in Malaysia, common terms like service, trade, information technology, call center, facilities management, business process outsourcing, business and management consultancy, market research, engineering consultancy and Multimedia Super Corridor (MSC) had been widely used, but not KIBS which actually encompassed all the above terms in the more holistic and strategic manner (EPU, 2009). According to Jarman and Chopra (2008), the Malaysian economy in the post agricultural phase has been largely involved in a lower value-added activity in the manufacturing sector. It appears as if Malaysia is set to follow a similar path in the service sector, carving out a niche for itself in lower end service sector activities. Thus, it is necessary for Malaysia to undertake KIBS as a strategic and innovative service industry to cement the formation of Malaysia's national innovation ecosystem, as well as the new realm of research in Malaysian higher education. The nature of the KIBS sector implied that organizations must realize a continuous flow of innovations to ensure continuity and to keep up with economic development (Bilderbeek, Hertog, Marklund, & Miles, 1998).

Many past researches attempted to identify the determinants of innovation in view of its significance. The innovation determinants were classified into three broad categories which comprised of individual, organizational and environmental factors (Damanpour, Szabat, & Evan, 1989; Damanpour, 1991). According to Damanpour (1991), among the three categories, determinants related to individual factor have been found to be the most significant. At the individual level, knowledge workers play significant roles in the innovation process especially in the context of KIBS sector (Yeoh, Mahmood, & June, 2013). Knowledge workers refer to those who possessed one of these qualifications such as a university degree (in any discipline) or a graduate diploma (multimedia/ICT) from a professional experience in multimedia; and a master's degree or higher in any discipline (Multimedia Development Corporation (MDEC), 1999). Therefore, any study on innovation in Malaysia, particularly at the individual level such as innovative work behavior will contribute immensely to the body of knowledge in enhancing the level of innovation in Malaysia. Ironically, even though, awareness about the importance of innovation and creativity to business activities existed, there seems to be insufficient research on these issues in Malaysia (Razmi & Hazman, 2002; Meriam, 2006).

Additionally, previous researches in Malaysia on innovation also tend to be general in nature and see innovation in a broader context (e.g. Mohamed, 1995; Jantan, Nasurdin, & Fadzil, 2003; Ishak, 2005; Khairuzzaman & Majid, 2007; Idris, 2008; Ghani, Hussin, & Jusoff, 2009; Ibrahim, Zolait, Subramanian, & Ashtiani, 2009) but there is a lack of research particularly in the context of KIBS sector or had addressed the IWB of the knowledge workers in Malaysia. In terms of the variables understudied, even though past researches have shown that leader-member exchange (LMX) (e.g. Scott & Bruce, 1994; Basu & Green, 1997; Yukl, 2006) and social capital (SC) (e.g. Burt, 1992; Tovstiga, 1999; Lin, 2001) do have influences on the IWB of employees, those studies were carried out in abroad and not in the context of KIBS sector. Given the dynamism of the KIBS sector, this study aimed to examine whether there is a relationship between LMX and SC on the IWB of those employees serving in the KIBS sector in Malaysia and.

2. Research Framework

2.1 Social Exchange Theory (SET) and Social Capital Theory (SCT)

Given the dynamism of the human relationship, SET was built with the intention to better understand the human behavior (Homans, 1958). As such, social exchange is said to occur when two or more persons willfully engaging in activities that can either be rewarding or costly (Blau, 1964). Meanwhile the SCT is based on SET in which it states that the relation between individuals' working networks determines how far an individual can obtain information and power, and influence organizational changes. The social capital is essential for effective collective work and interpersonal coordination (Bolino et al., 2002). One of the most influential form of social capital in the organization can be referred to the shared norm in which when in existence, can lead to the subordination of the members' personal interest to the interests of the group (Coleman, 1990). Furthermore, the SC also requires an element of reciprocity among the members in line with the idea behind the SET. This study has therefore been underpinned by the SET and the SCT as shown in Figure 1.

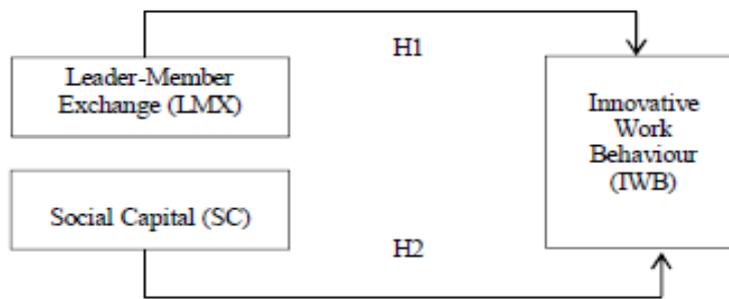


Figure 1. Research framework

In organizations, members are expected to repay the action that has been carried out on behalf of another member when the opportunity arises (Coleman, 1990). Thus, when individuals are able to identify themselves with a SC which is an important relational dimension, they will be more inclined towards establishing relationships that will provide them with the opportunity to exchange and combine resources (Nahapiet & Ghoshal, 1998). These theories implied that employees will increase their loyalty, engagement, and work performance since they are obliged to return the act of kindness that they have received (Aselage & Eisenberger, 2003). This will in turn make the employees obliged to take on the extra role behavior (Organ, 1988) which is important in seeding creativity and innovative behavior among the employees. The larger the obligation the greater it will exert the innovative work behavior on them (Blau, 1964).

2.2 Innovative Work Behavior

The characterization of innovation as a multistage process provides insight for the conceptualization of innovative work behavior used in this study. Literatures on innovation reveal some agreement that innovation is a multistage process (Kanter, 1988; Wheelwright & Clark, 1995). Kanter's (1988) stage model of innovation is chosen in this because it specifically describes the work behaviors of an individual (in this context, knowledge worker as a unit of analysis in this study) engaged in at each stage of the innovation process. This model outlines the discrete tasks involved in innovation as (a) idea generation and activation of the drivers of the innovation; (b) coalition building and acquisition of the power necessary to move the idea into reality; (c) idea realization and innovation production, turning the idea into a model-a product or plan or prototype that can be implemented; (d) transfer or diffusion, the spreading of the model-the commercialization of the product, the adoption of the idea. The multistage process view indicates that some aspects of organizational innovation are clearly an individual level activities, beginning with idea generation at the first stage. However, individual level activities are not limited to this first phase. In concurrence with Scott and colleagues (Scott & Falcone, 1998; Scott, 1993), this study adopts the perspective that innovative work behavior involves the full range of behaviors that an individual may exhibit through all of the stages of innovation. Moreover, when studying the effects of determinants on innovative work behavior, most researchers will collapse the suggestion and implementation of ideas into a single measure (Scott & Bruce, 1994).

2.3 Leader-Member Exchange and Innovative Work Behavior

Based on the LMX theory when high-quality relationships exist between the subordinates and superiors, subordinates will be awarded with greater resources and freedom in making decisions (Pelz & Andrews, 1966; Cotgrove & Box, 1970). Availability of resources, time and freedom are indeed essential in generating and testing of innovative ideas (Kanter, 1988) and increases the chances the chances of success of innovative work behavior (Yuan & Woodman, 2010). The confidence towards the value of innovative work behavior in performance and efficiency gains is developed when there is high-quality relationships exist between superiors and subordinates (Yuan & Woodman, 2010). The importances of how employees perceived they have been rewarded have found to have an effect on their innovative work behavior. When workers perceived that leaders have fairly rewarded them, they tend to respond more innovatively in a higher level of job demand situation (Janssen, 2000). The findings are further supported by the study of Janssen and Van Yperen (2004) among 170 employees in an energy supplier and found a positive impact of LMX on innovative work behavior.

This resulting outcome occurs simply because employees view the existence of distribution equity with regards to the rewards thus encouraging them to engage in innovative work behavior greater (Sanders, Moorkamp, Torka,

Groenveld, & Groenveld, 2010). Organizations are characterized by employees since employees are the dominant entity and involved in all activities in organizations and supervisors are viewed as the direct agent of organizations (Sanders et al., 2010). Therefore any actions of the supervisor are viewed as the actions of the organization of the employees (Eisenberger, Huntington, Hutchinson, & Sowa, 1986) and they will engage in expected behavior as a reward for those actions of the supervisor were deemed to be favorable (Sanders et al., 2010). Thus, we would like to hypothesize that:

Hypothesis 1: LMX has a significant positive relationship with the IWB of knowledge workers in KIBS.

2.4 Social Capital and Innovative Work Behavior

Many researchers have shown interest in the concept of social capital (Algezau & Filieri, 2010). The term SC was first coined by Hanifan (1916) in a study on democracy and development of urban community sustainability (Algezau & Filieri, 2010) in which SC is seen as a form of network that was created among the communities which helps in improving the living conditions of everyone in the community. Among the definition of SC in the modern contemporary literature, SC has been defined by Cohen and Prusak (2001) as a social relation-working network (internal and external) that is bounded by mutual trust, understanding, support, and shared values and behaviors to enable innovative collaboration. Nahapiet and Ghoshal (1998) classified social capital into three clusters or dimensions, namely the structural dimensions, the relational dimensions, and the cognitive dimensions. However, the three dimensions within social capital are highly interrelated; as such they can be measured as one dimension (Liao & Welsch, 2005).

External contacts are necessary in order to make an informed decision on the type of service to be produced as well as to keep updated on the latest trends and development (Kline & Rosenberg, 1986). Consequently, getting in touch with client regularly is obligatory as to maintain good connections with people from outside (Davison, Watkins, & Wright, 1989). Furthermore, the success of service deliverance has been frequently the result of high interactions which will provide guidance and recommendations from clients and contacts (Johne & Storey, 1998). Given such conditions, it is likely that some workers in an organization may have high contacts with the external entities while others may not be so due to the nature of due to the differences in the nature of their job (Jong, Hartog, & Zoetermeer, 2003). Therefore, in KIBS, it is essential for workers to participate in a high networking activities such attendance to conferences, training and education so that they keep themselves updated with the latest development in their field of work This is important because the greater the external contacts that workers have, the higher the chances for them to engage in innovative work behavior (Jong et al., 2003). Hence, drawing on past literatures, we would like to hypothesize that:

Hypothesis 2: SC has a significant positive relationship with the IWB of knowledge workers in KIBS

3. Methodology

Data was collected using the mail survey method. The measurement of this study was adapted from several sources. Based on the previous literatures, the IWB was measured using Janssen's (2000) which had a reported Cronbach's alpha value of .89 while Liden and Maslyn' (1998) measurement was used to measure the LMX and the measurement had a reliability of .90. Finally, SC was measured using Heydebreck's (1997) scale which had a .85 for its Cronbach's alpha value. In Malaysia, there are approximately 40,000 workers serve in the 2,433 of the Multimedia Super Corridor (MSC) status companies (MDEC, 2011). Using Krejcie and Morgan's (1970) table for sampling, the size of the sample appropriate for a population of 40,000 workers is 380 people. The sample obtained for this study was collected using the systematic simple random sampling approach in which a sample was selected randomly at the start of the process and then followed by selecting every Kth element in succession from the available sampling frame (Hair, Black, Babin, Anderson, & Tatham, 2006) until the targeted sample size is attained.

4. Results

Approximately 1520 questionnaires were mailed to those workers in the MSC status companies and from this 355 respondents responded to the survey. Nevertheless, given that there some returned questionnaire contained non-response items, only 318 completely answered questionnaires were used for further analysis. Consequently, the response rate for this study is 20.9% in line with the prevailing response rate of mail survey found in Malaysia which falls in between 10% to 20% (Ramayah, Yan, & Sulaiman, 2005). The data in this study were analyzed using SPSS 18.0. Factor analysis was carried out to test the construct validity of this study. The factor analysis was preceded by the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity. A KMO values which are greater than .60 (Coakes, Steed, & Ong, 2009), and a large and significant Bartlett's test ($p < 0.05$) (Hair et al., 2006) would indicate factorability. A factor loading of .30 for each

item will be accepted to represent a factor based the threshold value to meet the minimal level for interpretation of the structure (Sekaran, 2003; Hair et al., 2006). Additionally factor loading that is greater than .60 is regarded as high while those that is greater than .30 is treated as moderately high (Kline, 1994).

The result of factor analysis for IWB can be seen from Table 1. The table shows that all 9 items were loaded onto a single factor with an eigenvalue of more than 1.0 and the extractions explain 58.82% of the variance. At the same time, there is a good correlation between the items and the factor grouping that they belong to given that all the items have a loading of greater than .60.

Table 1. Summary of factor loadings for IWB

Questions	Component 1
IBW1 I create new ideas for difficult issues	.815
IBW2 I search out new technologies, processes, working methods, techniques, and/or product ideas.	.772
IBW3 I generate original solutions for problems.	.623
IBW4 I mobilize support for innovative ideas.	.618
IBW8 I introduce ideas into the work environment in a systematic way.	.776
IBW9 I evaluate the utility (benefits) of innovative idea.	.703
IBW7 I transform innovative ideas into useful applications.	.679
IBW5 I make organizational members enthusiastic for innovative ideas.	.813
IBW6 I try to acquire approval for innovative ideas.	.649
Eigenvalues	
Percentage of variance explained = 58.82%	
KMO= 0.645	
Bartlett's Test of Sphericity :	5.294
Approx Chi-square = 493.700	
df = 36	
Sig = .000	

Table 2 shows the result of the factor analysis of leader-member exchange. All 13 items were found to be greater than 0.6 indicating a good correlation between the items and the factor grouping they belong. The percentage of total variance explained is 69.97% and the items have a single factor extraction.

Table 2. Summary of factor loadings for LMX

	Component 1
LMX 4 My supervisor/manager defends my work actions to a superior, even without complete knowledge of the issue in question.	.725
LMX 3 My supervisor/manager is a lot of fun to work with.	.722
LMX 11 I respect my supervisor/manager's knowledge of and competence on the job.	.659
LMX 6 My supervisor/manager would defend me to others in the organization if I made an honest mistake.	.803
LMX 5 My supervisor/manager would come to my defense if I were "attacked" by others.	.714

	Component 1
LMX 7 I do work for my supervisor/manager that goes beyond what is specified in my job description.	.701
LMX 8 I am willing to apply extra efforts, beyond those normally required, to further the interests of my work group.	.791
LMX 9 I have enough confidence in my supervisor/manager that I would defend and justify his/her decision if he/she were not present to do so.	.777
LMX 10 I am impressed with my supervisor/manager's knowledge of his/her job.	.528
LMX 13 My supervisor(s) encourages me to share knowledge.	.830
LMX 12 I admire my supervisor/manager's professional skills.	.801
LMX 2 My supervisor /manager is the kind of person one would like to have as a friend.	.820
LMX1 I like my supervisor/manager very much as a person.	.816
Eigenvalues	
Percentage of variance explained = 69.97%	
KMO= 0.669	
Bartlett's Test of Sphericity :	9.097
Approx Chi-square = 1160.313	
df = 78	
Sig = .000	

Table 3 on the other hand shows the result of the factor analysis of the SC variable. All the 12 questions were loaded into a single factor with eigenvalue of more than 1.0. The percentage of variance explained is 70.39%. The factor loadings have all found to be greater than 0.6 thus indicating good correlation between the items and the factor grouping they belong to.

Table 3. Summary of factor loadings for SC

	Component 1
SC 7 My organization has effective policies and procedures for knowledge sharing in place.	.787
SC 8 My organization has trainings and workshops that focus around sharing knowledge.	.716
SC 6 In my organization, senior management models the knowledge sharing behaviors they want to see.	.694
SC 2 I have frequent contacts with suppliers of my company.	.857
SC 1 I have frequent contacts with the customers of our company.	.848
SC 4 I always perceived my colleagues as important sources of professional advice, when I have a work-related problem, or when I want advice on a decision that I have to make.	.758
SC 5 I always perceived my colleagues as a group of person that I can count on, whom I view as allies, and who are dependable in times of crisis (support).	.709
SC 3 I often talk to other professionals from other companies in our industry.	.683
SC 10 My organization uses organizational learning to support existing core competencies and create new ones.	.778

	Component
	1
SC 9 My organization has a company-wide social events which provide opportunities for knowledge sharing.	.758
SC 12 Knowledge sharing is linked to employee advancement.	.865
SC 11 My organization provides me with the time and resources to share knowledge.	.816
Eigenvalues	
Percentage of variance explained = 70.39%	
KMO = 0.560	
Bartlett's Test of Sphericity :	8.446
Approx Chi-square = 927.541	
df = 66	
Sig = .000	

The measurements were re-tested for reliability after the process of extractions. This is to ensure the existence of internal consistencies of the measurements after factor analysis has been carried out. The result of the analysis shows the existence of internal consistency ranging from .67 for IWB to .78 for LMX while SC has reliability value of .66 which have met the threshold value of .60 as suggested by Hair et al. (2006). Table 4 shows the reliability statistic for the measurement based on past literatures and the current study.

In terms of respondents' profile, the analysis reveals that 53.2% of the respondents are males while the remaining 46.8% are females. The majority of them were from first degree holders (55.5%), followed by postgraduate degree holders (30.6%) and finally diploma holders (13.9%). In terms of sub-sector contribution, most of the respondents are those working in the shared services and outsourcing comprised of 22.3% while the least number of respondents came from the hardware design sector of 4.8%.

Table 4 shows the result of the inter-correlation between the variables. The bivariate correlation test revealed that LMX and IWB have a positive significant relationship with IWB ($r=0.406$, $p<.01$). Similarly, SC also has a positive significant relationship with the IWB of the employees of the KIBS sector ($r=.436$, $p<.01$). Based on the outcome of the correlation analysis, there are insufficient evidences to reject both H1 and H2.

Table 4. Correlation matrix of the variables

Variables	IWB	LMX	SC
1 IWB	1.000		
2 LMX	.406**	1.000	
3 SC	.436**	.586**	1.000

Note: ** Correlation is significant at the 0.01 level (2-tailed)

Table 5 shows the result of the multiple regression analysis. A multiple regression analysis was carried out in order to determine which predictor has a stronger influence on the employee IWB. Result from the multiple regression analysis revealed a value of R² of 22.5%. This value of R² shows that 22.5% of the variance in the employee IWB can be explained by the two predictors in this study specifically LMX and SC. Additionally, in order to determine the strength of the influence between the predictors towards IWB, a reference to the standard beta value is made. This study reveals that SC has as a stronger influence on the IWB as compared to LMX. This is evidenced in the higher beta value for SC $\beta=.302$ compared to $\beta=.229$ for LMX. Closer inspection of Table 5 also shows there is a significant positive regression weight for both LMX and SC which indicates that when LMX and SC are in existence, the IWB of employees can be enhanced. Thus both variables contribute to the regression model and H1 and H2 are accepted. The research model is also free from the multicollinearity problem which is indicated by a low VIF value of less than 10 (Hair et al., 2006).

Table 5. Multiple regressions of LMX, SC and IWB

Independent Variables	IWB (Dependent Variable)						
	Beta	Std Error	Std Beta	t	Sig	Tolerance	VIF
(Constant)	2.556	.320		7.996	.000		
LMX	.219	.059	.229	3.697	.000	.656	1.524
SC	.323	.066	.302	4.867	.002	.656	1.524
R	.474						
R ²	0.225						
F	44.547						
Sig	0.000						

5. Conclusions and Implications

This study has been carried out with the aim to find evidence on whether the IWB of employees working in the KIBS sector can be influenced by LMX and SC at their workplace. This study was meant to fill up the gap and lack of studies on individual innovative behavior especially in the context of KIBS in Malaysia. Even though there were many past researches (e.g. Mohamed, 1995; Jantan et al., 2003; Ishak, 2005; Khairuzzaman & Majid, 2007; Idris, 2008; Ghani et al., 2009; Ibrahim et al., 2009) on innovation were conducted in Malaysia, none of them had conducted the study in KIBS or had addressed the aspect of behavioral innovation of the knowledge workers in Malaysia. Thus, this study contributes to the current literatures on KIBS, innovative work behavior and knowledge workers which are generally quite limited in Malaysia. This study has thus provided insights into the KIBS sector that has received little attention and probably a term that may not be familiar among researchers in Malaysia. It is hoped that this study is able to pave ways for more future researches to take on similar studies perhaps by looking at the other possible variables that may expand on this research model. The above results reveal that both LMX and SC have a significant positive relationship with the IWB employees in the KIBS sector. The importance of LMX on employees' IWB resulted in them responded more innovatively to higher levels of job demands when they perceived that their efforts were fairly rewarded by their leader Janssen (2000). Further, the trust inherent in high LMX relationship provides a context in which subordinates are more comfortable suggesting and promoting innovative ideas. At the same time, social capital plays a significant positive role in influencing the development of both incremental and radical innovation (Subramaniam & Youndt, 2005). Through socialization, knowledge workers share their intricate technical experiences and mental models of common interest with each other through observation, practice, and imitation. Socialization outside the workplace and with members of other organizations is also beneficial. It increases the trust, opportunity, and the motivation to engage in knowledge sharing (Oh et al., 2004).

One of the major obstacles for employees not to innovate could be due to the fear that their action might be perceived negatively by others. Thus, it is necessary for managers to put greater emphasize on the importance of innovation and embedded the idea as part of the job requirements would certainly help innovative behavior to flourish in the workplace. Employees have to understand that innovation does not only result in the R&D departments and managers would have an important mission to overcome this mindset barrier and to elucidate behavioral innovation among these workers. This is to prevent them from alienating innovation in their day to day job since thinking that they are dealing with non-technology types of job.

Given that the variables chosen in this study were also widely studied as the drivers of innovation in most manufacturing and service based companies in general, it is suggested that other predictors can be considered when in future studies to extend the list of predictors of IWB. This study has also collapsed the multistage of innovative work behavior as suggested by Scott and Bruce (1994). This is somehow limiting the ability to obtain a broader understanding on the influence of the predictors on various stages of IWB as discussed by Kanter's (1988) model. Furthermore a low R² value of 22.5% as shown in this study may have also indicated that there is a need to investigate on other possible predictors of IWB. Previous studies have shown that some personal characteristics tend to may have influence on innovative behaviors. Among others, factors such as tolerance towards ambiguity and uncertainty, the desire for stability, self-confidence and independence (Nicholson & West, 1988; Rushton & West, 1988) can be considered in the future to add richness to the present study of the KIBS sector.

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