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The Relationship between Pro-Innovation Organizational Climate, Leader-Member Exchange and Innovative Work Behavior: A Study among the Knowledge Workers of the Knowledge Intensive Business Services in Malaysia

Yeoh Khar Kheng[1] and Rosli Mahmood[2]

Abstract

This study was conducted to investigate the relationship between pro-innovation organizational climate, leader-member exchange and innovative work behavior among the knowledge workers of the knowledge intensive business services in Malaysia. The innovative work behavior has a central role in the development of knowledge-intensive business services in Malaysia. It was previously reported that pro-innovation organizational climate and leader-member exchange to have a significant relationship with innovative work behavior of employees in various business sectors. However, not all support the notion that organizational climate and leader-member exchange correlates with innovative work behavior. Some of the researchers concluded the relationship is rather weak. This makes it even more interesting to include organizational climate and leader-member exchange in the research framework of the model of innovative work behavior in Malaysia. A quantitative method was utilized and data were collected using mail survey. A total of 1520 questionnaires were distributed and 310 deemed usable for analysis using SPSS, resulted in 20.6 % response rate. The results revealed that there was a significant relationship between pro-innovation organizational climates, leader-member exchange with the innovative work behavior of knowledge workers. Discussions of the results and its implications are discussed.

Key words: Innovative Work Behavior, Pro-innovation Organizational Climate, Leader-member Exchange, Knowledge- Intensive Business Services, Knowledge Worker

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INTRODUCTION

Innovation has long been embraced by organizations seeking to remain viable, effective and competitive in a dynamic business environment (Kanter, 1983; Peters & Waterman, 1982). Any organization that oblivion to this reality and does not innovate will become the ultimate reason for the decline and demise of existing organizations (Drucker, 1989). Based on past research, many literatures explained and described innovation in line with Schumpeterian concepts, where innovation was taken to belong in the realm of research and development (R&D) labs where new knowledge was discovered (Ruttan, 1959; Romer, 1990). However, today's innovation and its paradigm, in all its forms, products, services, market strategies, processes, and work methods (Kanter, 1988), is considered more of a product of the human mind and its creativity (Kanter, 1988, Rogers, 2003), where tacit knowledge resides. Innovation may or may not be routed through R&D labs. As such, innovation and all its derivatives are no longer associated with those organizations and worker doing technological/scientific work per se (Smith, 2002). The importance of innovation to the Malaysian economy had also been significantly addressed by the Prime Minister of Malaysia, Datuk Seri Najib Tun Razak at the launch of the Innovation Nation Convention in July 2010. The Prime Minister also highlighted that the key to meeting the objective of the New Economic Model (NEM) is through innovation. It was also stressed that in order be successful, there must be intensified effort to continuously innovate. Furthermore, as an innovation nation, innovation ecosystem is needed to assist in the improvement of its economic status as well as the quality of life of its citizens while at the same time becomes the enabling factor for the private sector to bring in the needed income for the country (Yayasan Innovasi Malaysia, 2012).

[1] *College of Business, Universiti Utara Malaysia, 06010 UUM Sintok, Kedah, Malaysia*
E-mail: kharkheng@uum.edu.my
[2] *College of Business, Universiti Utara Malaysia, 06010 UUM Sintok, Kedah, Malaysia*
E-mail: rosli@uum.edu.my

PROBLEM STATEMENT

Innovation is becoming increasingly decisive for competitiveness and performance of services, as it is already in the case of manufacturing (Poh & Zi, 2005). However, for developing nations like Malaysia, studies on innovation are still in its infancy (Ismail, 2005; Mohamed, 1995; Wan Jusoh, 2000; Zain & Rickards, 1996). In spite of the obvious value and the importance of innovation and creativity to the businesses and also to the future growth of the economy, not much is known about it in Malaysia (Razmi & Rahman, 2001; Razmi & Hazman, 2002; Meriam, 2006).

Even though De Jong and Den Hartog (2007) pinpointed that knowledge-intensive business services (KIBS) are a relevant but under-researched context of individual innovation research, the synthesis of many literatures such as Miles (2003, 2005, 2008), Den Hertog (2000), Alvesson (2000) and Muller and Zenker (2001) on KIBS, found that the definition and the categorization of KIBS was not widely used in the Malaysian context. 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 is actually encompassed all the above terms in the more holistic and strategic manner (Economic Planning Unit, 2009). The nature of knowledge-intensive business services as described implies that such organizations must realize a continuous flow of innovations to ensure continuity and to keep up with economic development (Bilderbeek, Den Hertog, Marklund & Miles, 1998). Simultaneously, it is also startling to notice the lack of attention for knowledge workers who work in KIBS even though in the last quarter of the twentieth century witnessed an increased knowledge-intensity of work (Hislop, 2005). Today, knowledge workers are closely integrated with the firm's growth prospects. Knowledge workers in management positions produce new strategies, new processes, and new networks. Scientist work in research and development, as well as engineers creates new products. Marketing specialist as a knowledge worker invents new ways of persuasion, create a new brand personality and packages that continuously attract customers to purchase. Based on the above narration, any firms that dismiss the importance of knowledge worker will suffer in terms of growth and profitability. Yet, despite the importance of knowledge workers to the economic success of countries, firms, and society as a whole, they have not received sufficient attention (Davenport & Iyer, 2009, Hislop, 2005). Furthermore, Mumford (2003) highlighted that empirical research into the related concept of creativity paid generous attention to professions widely recognized for their creative character (artists, scientists and musicians) while knowledge-intensive professions such as engineers, computer programmers, designers, management consultants and marketers were overlooked. The above narration highlighted the underlying problems of innovation and innovative work behavior in Malaysia. This phenomenon has created many academic gaps to be filled through research. Thus, this study is undertaken to examine the relationship of pro-innovation organizational climate and knowledge workers' innovative work behavior within the Malaysian's KIBS.

LITERATRUE REVIEW

Innovative Work Behavior

Despite its importance in organization literature, there is still no universally accepted definition of innovation. Ambiguity in the meaning of innovation stemmed from the presence in the literature of many diverse definitions, ranging from highly specific to very broad (Amabile, 1988; Brazeal & Herbert, 1999; Cummings & Oldham, 1997; Patterson, 2000; Woodman et al., 1993). West and Farr (1990) defined innovation as the intentional introduction and application (within an individual, group or organization) of ideas, processes, products or procedures which are new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organization or wider society. Innovation is a social process in the sense that there is an interaction between those who innovate and those who are affected by the innovation; and there is recognition that one's action will affect others and will influence that action; to innovate means "bring in novelties, make changes" (Jain, 2010). This study adopted a similar definition and its paradigm. Drawing on West and Farr (1989), this study defines innovative work behavior as an employee's action directed at the generation, application and implementation of novelty ideas, products, processes, and methods to his or her job position, departmental unit, or organization.

Examples of such behavior include seeking out new technologies, recommending new strategies to achieve goals, applying new work methods, and procuring support and resources to implement novelty ideas.

Dimensions of Innovative Work Behavior

The characterization of innovation as a multistage process provides insight for the conceptualization of innovative work behavior used in this study. Literature on innovation reveals some agreement that innovation is a multistage process (Kanter, 1988; Wheelwright & Clark, 1995). Kanter's (1988) model of the stages of innovation is chosen for this study of innovative work behavior because it specifically describes the work behaviors of an individual (in this context, knowledge worker as a unit of analysis in this study) engage 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. This conceptualization of innovation as a multistage process provides the basis for the definition of individual innovative work behavior used in this study. 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. However, when studying the effects of determinants on innovative work behavior, most researchers will collapse the suggestion and implementation of ideas into single measure (Scott & Bruce, 1994a).

Pro-innovation Organizational Climate

Climate is at the heart of an organization's informal structure. It implies a system of informal rules that spells out how people are to behave (Anderson & West, 1993). Knowing what is expected of them, employees will waste little time deciding how to act in a given situation. People generally tend to conform to norms and values, and comply with the socially desired group behavior (Asch, 1956). Climate in this context can be defined as in the following definitions by Reichers and Schneider (1990), and Nystrom (1990).

> "Climate is the shared perception of the way things are around here. More precisely, climate is shared perceptions of organizational policies, practices, and procedures" (Reichers & Schneider, 1990).
>
> "Climate is the feelings, attitudes and behavioral tendencies which characterize organizational life" (Nystrom, 1990).

Schein (1990) defined organizational climate as the assumptions developed by a group for problem solving purposes and, because of their effectiveness in solving ongoing problems; they are taught to new members of the organization as the right way to accomplish tasks. Similarly, Yukl (2006) described the organizational climate as the assumptions, beliefs, and values that member of a group share. Cameron and Quinn (2006) added an historic view to both of these definitions by maintaining that organizational climate also includes the shared memories of the group.

The effect of organizational climate on behavior expectations and its outcome is regarded as an essential factor (James, Hartman, Stebbins, & Jones, 1977). Related to this, the social-political perspective suggested that when innovation is supported by an organization, it can result in the creation of pro-innovation organizational climate (Amabile, 1988; Kanter, 1988; Scott & Bruce, 1994b). The importance of organizational support towards innovation will also help in the communication of the organizational values and norms which can affect employees' innovative work behavior with regards to image gains or risks (Yuan & Woodman, 2010). Meanwhile, when there exists a culture that inclines towards change and rather than maintaining traditions, members of the organization may initiate changes when it is necessary and beneficial for the organization (Farr & Ford, 1990).

In addition, Scott and Bruce (1994b) as cited by Yuan and Woodman (2010) claimed that expectancies and instrumentalities can be developed by organization climate for innovation. Basically Scott and Bruce

(1994b) suggested that the presence of organizational climate will signal to the employees that having innovative behavior is welcomed and can increase their image which allows employees to experience an image gains. Since the presence of pro-innovation climate legitimizes trialing, innovative work behavior is then encouraged (West & Wallace, 1991) because such climate will have a high tolerance towards trial and error thus giving emotional assurance that image risk is at minimum in any episode of experimentations effort (Ashford, Rothbard, Piderit & Dutton, 1998).

Pro-innovation Organizational Climate and Innovative Work Behavior

Climate is a situational characteristic that can easily affect innovative work behavior of coworkers. A co-worker's perception of climate affects the extent to which creative solutions are encouraged, supported and implemented. It encourages innovative ways of representing problems and finding solutions (Martins & Terblanche, 2003). The research revealed that that many of the elements of a successful organizational climate are also found in innovative organizations. Hartmann (2006) described an innovative climate as one that has comprehensive rewards, allows autonomous work, focuses on training and provides immediate feedback. Hartmann's view has a distinct focus on individual motivators. A model by Dombrowski, Kim, Desouza, Braganza, Papagari and Baloh (2007) proposed a broader set of elements that include some team or group based motivators. They include elements such as democratic communication, safe spaces, flexibility, collaboration and boundary spanning. Once again, as with organizational climate, there seems to be no definitive list of elements that allow an organization to be innovative. Indeed, Martins and Terblanche (2003) conceded that the research provides "little agreement on the type of organizational climate needed to improve creativity and innovation" (p. 69). As the research has indicated, the elements of organizational climate and innovation-supportive climate cannot be cleanly dissected, documented and recreated. This has potentially significant implications for any organization trying to foster innovation.

Innovation by its nature requires individuals to think in new and different ways about products, services and processes that is to learn new ways of doing things, take risks, make mistakes, and step out of the normal way of doing things. This is not easy for individuals particularly in business settings where failure is often considered career limiting. "Fear of failure is a very common feeling among people in a work environment since it can leave a person feeling very discouraged. There is also the possibility that it can sometimes ultimately lead to dismissal of an employee" (Appelbaum, Bregman, & Moroz, 1998, p. 120). This creates a paradox for organizations and leaders as they struggle to become more innovative yet strive to manage the risk associated with change and protecting the organization. In fact, organizations must find ways to balance the paradoxical nature of innovation, risk, and governance by promoting a culture of intelligent risk taking (Farson & Keyes, 2002). The importance of pro-innovation to the formation of innovative work behavior has received attention by some researcher. Based on research by Axtell et al. (2000) it was found that the organizational climate is also important for innovative work behavior in the implementation stage. Since innovation is a social process, the implementation of ideas relies more heavily on the involvement of others. For example, while a co-worker can be creative and generate ideas on his own, implementation typically depends upon the approval, support and resources of others. Axtell et al. (2000) expected this also applies to many bottom-up, incremental innovations. Unless an innovative person is essentially independent, incremental changes will usually affect others, and will therefore be subject to others' approval.

Leader Member Exchange

Yulk (1998) and Scandura (1999), described LMX as the interactions that exists between a leader and a subordinate characterized by mutual influence and interdependencies. The basic premise of LMX theory is that leaders establish higher quality exchanges with some of their followers (in-group members) while with other followers leaders rely more on the terms of employment in forging exchanges (out-group members). According to the LMX theory (Graen, 1976; Graen, Novak, & Sommerkamp, 1982; Graen & Uhl-Bien, 1995), 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 significance of high-quality relationships which was characterized by mutual trust and respect was further stressed by Graen and Uhl-Bien (1995) and this relationship play a crucial factor which to an innovative employee as it is thought to be able to increases one's image while lessening the potential of image loss (Yuan & Woodman, 2010). The perception of potential image gains in turns affects the desire and motivation of an innovative employee (Gilbert, 1998; Markus & Zajonc, 1985).
In addition, past researches on attribution theory had implied that the outcome of the such supervisory behavior can be contributed to the presence of attribution biases in which, the propensity for a supervisor to relate positive outcome to the disposition of the well-liked employee while being empathized towards the employee when the outcome is negative. As a result, innovative work behavior will thrive among those employees who are trusted and well-liked by their supervisor as they may expect to suffer less image risk should innovative attempt failed due to the existence of the attribution bias (Yuan & Woodman, 2010). Building on the work of Dienesch and Liden (1986), Liden and Maslyn (1998) has carried out a study to determine whether other dimensions exist on top of the three dimensions which consist of contribution, loyalty, and affect that was developed by Dienesch and Liden (1986). Both Liden and Maslyn (1998) in their study found an additional dimension for the LMX construct which is known as professional respect. In relation to contribution dimension, it was defined by both Dienesch and Liden (1986) in Liden and Maslyn's (1998) as the "extent of work-related efforts which leaders and followers perceive what they each put into both explicit and implicit goals of a dyad" (p. 45). On the other hand, the affective dimension according to Dienesch and Liden (1986) as cited by Liden and Maslyn (1988) was defined as the "interpersonal liking of members in the dyad for each other. This mutual affection is based on interpersonal attraction and excludes feelings of respect for the other members' work or professional values" (p.46). Finally as for professional respect dimension, Liden and Maslyn (1998) defined it as "the degree to which each member of the dyad has built a reputation, within and/or outside the organization, of excelling at his or her line of work" (p.50).

Based on the above narration, this study will adopt Liden and Maslyn (1998) four dimension model of LMX, namely:
1. Affect – this was described as the mutual affection that based on interpersonal attraction but excludes feelings of respect and professional value.
2. Contribution - this dimension was defined as the extent of work-related efforts which leaders and followers perceive what they contribute to both explicit and implicit goals of a dyad
3. Loyalty - this was defined the exhibition of public support expressed by both leader and follower.
4. Professional respect -refers to the perception of the degree to which each member of the dyad has built a reputation, within and/or outside the organization.

Therefore, based on the LMX theory, innovativeness among employees can be influenced by the quality of relationship that may exist between and superior and a subordinate (Graen & Scandura, 1987). In this study, these four dimensions will be collapsed into a single exchange quality measurement of leader-member relationship; and the research instrument will cover this dimension.

Leader Member Exchange and Innovative Work Behavior

Employee innovative work behavior has found to be affected by LMX in previous researches (Basu & Green, 1997, Scott & Bruce, 1994). The importance of how employees perceived they have rewarded have found to have effect on the innovative work behavior. When the perception that they have been fairly rewarded by their leader occurs, employees tend to react more innovatively in a higher level of job demand situation (Janssen, 2000). This resulting outcome occurs simply because employee view the existence of distribution equity with regards to the rewards thus encouraging them to engage in innovative work behavior greater (Sanders et al., 2010). The interactions between LMX and innovative work behavior can also be explained by the Social Exchange Theory (Blau, 1964). 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).

This theory also suggested that the quality of the relationship between leaders and followers relates to innovativeness (Green & Scandura, 1987). Consistent with this prediction Scott and Bruce (1994) found that high-quality exchange relationships were related to IWB. Similarly, Tierney *et al.* (1999) collected data from 191 leaders and employees in the R&D sector of a large chemical corporation and found a positive relationship between high-quality relationships and employee creativity. Janssen and Van Yperen (2004) used a dataset of 170 employees from an energy supplier and found a positive impact of LMX on innovative work behavior. In addition, the outcome of the high quality exchange of innovative work behavior was also discovered by Basu and Green (1997). In a high quality exchanges, involvement by both leaders and followers played a crucial aspect. As a consequence of this involvement from both sides, ideas can be generated freely since opportunities for information exchange has increased through high quality exchanges (Liden, Sparrowe & Wayne, 1997).

Graen and colleagues (Graen & Uhl-Bien, 1995; Graen & Scandura, 1987; Dansereau, Grean & Haga, 1975; Graen, Orris & Johnson, 1973) suggested that relationships between leaders and subordinates emerge over time through a type of role-making process. In this early stage of the relationship, social exchange is limited to fulfilling respective contractual obligations and can be characterized as quid pro quo or transactional in nature. At some point, in some relationships, one of the parties spontaneously indicates an interest and willingness to go beyond prescribed roles and engage in non-contractual types of social exchange. Thus, the leader-member relationship moves to a higher level of development. In these more highly developed relationships (i.e., high LMX), social exchange is broadened to include expanded information exchange, support of an emotional as well as an instrumental nature, and an investment in the professional development of the other party. In essence, high LMX relationships are empowering relationships, and autonomy has positive effects on innovative work behavior (Pelz & Andrews, 1966).

Further, the trust inherent in high LMX relationships provided a context in which subordinates are more comfortable suggesting and promoting innovative ideas. Albrecht and Hall (1991 & 1992) observed that suggesting new ideas is a risky endeavor in organizations because new ideas represent a change in the established order and, as important, they invite evaluation from other organizational members. It is difficult to separate new ideas from the person offering them. Therefore, to propose innovative ideas is to put oneself at risk. Even in R&D organizations where the mission is innovation, prior research attests to variation in the degree of perceived support for risk taking (Abbey & Dickson, 1983).

Following from Albrecht and Hall (1991, 1992), it was suggested that the supportive, trusting partnership characterizing high LMX relationships diminishes this sense of risk and positively influences subordinates to raise new ideas. Last, as high LMX relationships develop, the managers invest substantial personal resources in subordinates' professional development (Graen & Scandura, 1987). That is, rather than simply manipulating context to provide the potential for innovative work behavior, managers actively engage with high LMX followers on unstructured tasks. Through this iterative series of collaborations, managers communicate continuously, escalating confidence in subordinates' abilities and increasing their self-efficacy. Further, they provide experiences through which subordinates develop professional skills (Graen & Uhl-Bien, 1995). Ability and skills are both necessary conditions for creative output (Amabile, 1983). Thus, the literature suggested that LMX has a positive effect on the innovative work behavior of subordinates through the creation of facilitating task conditions, development of subordinate skills and self-efficacy, and reduction of fears of negative evaluation of innovative ideas. Empirical research is emerging that supports a positive relationship between LMX and innovative work behavior (Basu, 1991; Scott & Bruce, 1994; Tierney, 1993). Given the above literatures that have resulted in positive findings between LMX and innovative work behavior, and yet at the same time very little of past researches that have studied in the context of KIBS in Malaysia, thus it is hypothesized that LMX is significantly related to the innovative work behavior of knowledge workers in KIBS.

METHODOLOGY

Design of Study

In this study, mail questionnaires were distributed to the identified 1,520 knowledge workers work in MSC status companies in Malaysia. In order to sample this 1520 knowledge workers from 2433 MSC's status organizations, a systematic random sampling was used. There were total 2433 organizations in this study and each selected organization was sent with 5 sets of questionnaires (Bank Negara Malaysia, 2005). Under the systematic random sampling technique, a sample is chosen by selecting a random starting point and then picking every k^{th} *element* in successive from the sampling frame. There were 304 MSC status organizations chosen under this technique (1520/5 employees). This research employed the summated rating scales which are used to measure the strength of agreement about the variables that are understudied. These variables were measured using the seven-point Likert scale consisting of "strongly disagree, disagree, slightly disagree, neither disagree not agree, slightly agree, agree and strongly agree". A seven-point Likert scale is used since according to Hair et al. (2007) "the more points are used the more precision you get with regard to the extent of the agreement or disagreement with a statement" (p. 229). This study has adapted the work of Janssen (2000) in measuring the IWB of employees from the KIBS sector. The measurement which was by Scott and Bruce (1994a) was later referred by Janssen (2000) in which a nine item scale was constructed for each of the innovation stages with a reported reliability alpha value of 0.89. The measurement for pro-innovation organizational climate was adapted from Siegel and Kaemmerer (1978) which consisted of twenty items. Cronbach's alpha on this scale was .92.

The measurement for leader-member exchange was adapted from Liden and Maslyn's (1998) multi-dimensional model of leader-member exchange (LMX-MDM) scale. Leader-member exchange quality is the summation of all the LMX dimensions. ." Cronbach's alpha on this scale was .90.

Population and Sampling

Multimedia Super Corridor (MSC) status companies were selected as the research sampling frame. In order to establish an appropriate sampling frame and survey population, **Table 1** had been appended to highlight the nature of business and number of MSC status' organizations in Malaysia. Below are some of the salient features of MSC's companies:

- 2,433 companies - MSC Malaysia Status companies are now in existence (MDeC, 2010) which employed 40,000 skilled knowledge workers as of May, 2011.
- More than 89% of staff by MSC Malaysia status companies is categorized as knowledge workers holding high-value jobs.
- More than 57% of staff employed by MSC Malaysia status companies has at least a first degree and postgraduate qualifications (45.3 %).

DATA ANALYSIS

Mail questionnaires were distributed to the identified 1,520 knowledge workers who worked in the MSC status companies in Malaysia. As a result, 200 responses (first wave) were obtained and another 155 responses (second wave) secured in the following month after intensive efforts being made to those individuals involved. From the 355 questionnaires received, 37 questionnaires were not usable and only 318 usable questionnaires were used for the analysis. This marked the response rate of 20.9 percentages. Jayasingam, Ansari and Jantan (2010) registered a mail survey's response rate of 27.7 % among the knowledge workers in MSC. Even though the figure falls short; the response rate of 20.9 is deemed to be exceptionally good as responses expected from academic mail survey are usually low (Sekaran, 2003). In Malaysia, the standard response rate is 20%. (Isa & Foong, 2005). All collected responses were properly examined before they were coded into SPSS version 18.0. In order to test construct validity, factor analysis test was used for all the variables in this study. The suitability of this test was subjected to the utilization of Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity. Therefore, if the KMO values are greater than 0.6 (Coakes, Steed & Ong, 2009), and the Bartlett's test is large and significant ($p<0.05$) (Hair et al., 2006), factorability is then considered possible. Once factor analysis has been carried out, items with factor loadings of more than 0.3 will be accepted to represent a factor since it is regarded as the threshold to meet the minimal level for interpretation of structure (Hair et al., 2006 & Sekaran, 2003).

Table 2 shows the result of factor analysis of innovative work behavior. Items were chosen to identify with a factor with loadings greater than 0.3 according to the guidance by Hair et al. (2006). According to Kline (1994), when factor loading is greater than 0.6, it can be considered as high while any factor loading that is greater than 0.3 are considered as moderately high. Thus, innovative work behavior had all nine questions loaded onto a single factor with eigenvalue more than 1.0. The single factor extracted 58.82 percent of the total variance in response. The factor loading had all found to be greater than 0.6 indicating a good correlation between the items and the factor grouping they belong to. Twenty questions used to measure the pro-innovation climate and loaded onto single factor with eigenvalue more than 1.0. The single factor extracted 63.07 percent of the total variance in response. The result is shown in **Table 3**. As for leader-member exchange, in **Table 4**, thirteen questions were used. The factor loadings have all found to be greater than 0.3 while many greater than 0.6; indicating good correlation between the items and the factor grouping they belong.

Once the factor analysis had been done, it is necessary to carry out a reliability test again on all the instruments. It was found that all variables had adequate level of internal consistency ranging from 0.849 (for pro-innovation climate), 0.772 (leader-member exchange) and 0.676 (for innovative work behavior). Therefore, all the variables met the threshold as suggested by Hair et al., (2007) and Nunnally (1983).

FINDINGS

Table 5 showed the distribution of the respondents according to their profiles. The majority of them were from first degree holders (55.5 percent, n= 172), followed by postgraduate degree holders (30.6 percent, n= 95) and finally diploma holders of 13.9 percent (n= 43). In this study, education level is considered very important because knowledge workers were used as a unit of analysis and knowledge worker was defined as "An individual who possesses 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." (MDeC, 1999). Therefore, any respondents who do not possess this criterion were deleted from the dataset. In this study, all the respondents are knowledge workers as per definition provided by MDeC (1999).

Table 6 revealed that the innovative work behavior is positively correlated to the pro-innovation climate construct ($r = 0.459$, $p<0.0$) and leader-member exchange ($r=0.406$, $p<0.0$) Therefore, it can be acknowledged that the innovative work behavior of knowledge workers in the knowledge-intensive business services had a significant positive correlation with pro-innovation organizational climate and leader-member exchange. For pro-innovation climate, this result is in line with the past research demonstrated that innovative work behavior increases when co-workers feel that new ideas are encouraged and expected, and when their ideas can express openly without being directly punished for mistakes or criticized (Axtell et al., 2000). Literature suggests that implementing innovative services requires a corporate environment that encourages and supports 'stepping out' beyond the norm (De Brentani, 2001). In contrast, a climate that did not support innovation occurred when the exchange of information was ineffective, where activities were uncoordinated, and where power and control was not shared. Thus organizations that uphold innovations are characterized by a lot of sharing among members on innovation practices and this practice will lead to improvement in performance (Yuan & Woodman, 2010). As for leader-member exchange, De Jong and Den Hartog (2007) had carried out a study on managers and entrepreneurs who worked in the knowledge intensive service organizations. The study managed to discover thirteen leadership behaviors which have direct influence on innovative behavior of employees either on idea generation, application or both. At the same time, both De Jong and Den Hartog (2007) had also found besides the identified thirteen behaviors, innovative work behavior among employees can also be influenced by the leaders in their everyday work lives. Meanwhile, Sanders, Moorkamp, Torka, and Groenveld (2010) conducted an empirical research on the innovative work behavior of employees. It was revealed that there were significant positive relationships between LMX and HR satisfaction on the innovative work behavior of employees.

CONCLUSIONS

This study revealed that there is a significant positive relationship between pro-innovation organizational climate, leader-member exchange and innovative work behavior (see **Table 6**). This study is the first attempt to directly theorize and test major determinants associated with knowledge workers innovative work behavior in knowledge intensive business services in Malaysia. The model tested here provides a theoretical framework for understanding why employees engage in innovative behavior in relation to pro-innovation organizational climate and leader-member exchange. Studying individual innovative behavior in a natural work context is a complex and difficult task because the criterion is often difficult to validate, and are often limited to the use of perceptual measures. For employees whose jobs are not such as those working in knowledge intensive business services, by definition, technology or innovation related, their company's mission of "innovation" could appear rather remote or irrelevant, preventing them from contributing valuable ideas. It is therefore important for managers to break job position stereotypes and to demystify innovation. Communicating with those employees to let them know that they too are expected to contribute new ideas is one way. Explicitly incorporating innovativeness into their job descriptions is another possibility. Another reason why employees do not innovate is that they don't believe doing so will benefit their work. Companies with histories of successful performance need to take steps to break psychological comfort with the status quo (pro-innovation organizational climate) and sensitize employees to opportunities (high trust relationship between leader and member) for further improvement.

As organizations face increasingly turbulent environments and innovation becomes part of every employee's job description, the need for this kind of research is ever increasing. It is hoped that this study will stimulate more theory building and testing to investigate the processes leading to individual innovation. In addition, this study also projects that business services will become a catalyst and driver in Malaysia's transformation into a knowledge economy. As a result, this study is timely as it helped to highlight one of the important issues related to knowledge workers and their innovative work behavior. This study provided a good source for policy maker at the organizational level or governmental level to look for ways to further enhance the innovative work behavior of knowledge workers in Malaysia.

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Table 1: MSC Malaysia Status Cluster - Operational as of 15 May 2011

No	MSC Malaysia Status	No. of firms	Percentage (%)
1	Creative multimedia	254	11.5
2	Shared services and outsourcing	180	8
3	Software development	1141	52
4	Support services	186	8.5
5	Internet-based business	255	11.5
6	Hardware design	194	8.5
	Sub Total	**2210**	**100**
7	MSC International world class	87	
8	MSC Malaysia Incubators	67	
9	MSC Institute of Higher Learning	69	
	Grand Total	**2433**	

Source: Multimedia Development Corporation (2010)

Table 2: Summary of Factor Loadings for Innovative Work Behavior

Questions	Component
	1
IBW1 I create new ideas for difficult issues	.815
IWB2 I search out new technologies, processes, working methods, techniques, and/or product ideas.	.772
IWB3 I generate original solutions for problems.	.623
IWB4 I mobilize support for innovative ideas.	.618
IWB8 I introduce ideas into the work environment in a systematic way.	.776
IWB9 I evaluate the utility (benefits) of innovative idea.	.703
IWB7 I transform innovative ideas into useful applications.	.679
IWB5 I make organizational members enthusiastic for innovative ideas.	.813
IWB6 I try to acquire approval for innovative ideas.	.649
Eigen values Percentage of variance explained = 58.82% KMO= 0.645 Bartlett's Test of Sphericity : Approx Chi-square = 493.700 df = 36 Sig = .000	5.294

Table 3: Summary of Factor Loadings for Pro-Innovation Climate

Question	Component
	1
PI 15 There is adequate time available to pursue innovative ideas here.	.754
PI 14 There is adequate resources devoted to innovation in this organization.	.697

PI 16 Funding to investigate creative ideas is not a problem in this organization.	.660
PI 7 The best way to get along in this organization is to think innovatively withou conforming to the way the rest of the group does.	.554
PI 4 Around here, a person will not can get into trouble by being different.	.455
PI 19 The reward system here encourages innovation.	.816
PI 18 This organization gives me free time to pursue creative ideas during the workday.	.786
PI 17 Personnel shortages do not inhibit innovation in this organization.	.663
PI 20 This organization publicly recognizes those who are innovative.	.593
PI 3 Around here, people are allowed to try to solve the same problems in differen ways.	.806
PI2 Our ability to function innovatively is respected by the leadership.	.766
PI1 Innovative behavior is encouraged here.	.580
PI 9 This organization is open and responsive to change.	.505
PI 10 The people in charge around here not usually get credit for others' ideas.	.793
PI 8 People around here are not expected to deal with problems in the same way.	.647
PI 11 In this organization, we tend not to stick to tried and true ways.	.513
PI 12 This place seems to be more concerned with change than status quo.	.773
PI 13 Assistance in developing new ideas is readily available.	.764
PI 6 A person can do things that are quite different around here without provoking anger.	.838
PI 5 This organization can be described as flexible and continually adapting to change.	.731
Eigen values Percentage of variance explained = 63.07% KMO= 0.740 Bartlett's Test of Sphericity : Approx Chi-square = 2216.314 df = 190 Sig = .000	12.614

Table 4: Summary of Factor Loadings for Leader-Member Exchange

	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
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
LMX 1 I like my supervisor/manager very much as a person.	.816
Eigen values	9.097
Percentage of variance explained = 69.97% KMO= 0.669 Bartlett's Test of Sphericity : Approx Chi-square = 1160.313 df = 78 Sig = .000	

Table 5: Background of the Respondents

Questions	Frequency	Percentage
Gender		
Male	165	53.2
Female	145	46.8
Age		
Under 19	2	.6
19-30	129	41.6
31-40	106	34.2
41-50	52	16.8
Above 50	21	6.8
Ethnic		
Malay	127	41
Chinese	109	35.2
Indian	63	20.3
Bumiputra Sabah & Sarawak	7	2.3
Other race	4	.12
Subsectors of MSC		
Creative multimedia	31	10
Shared services and outsourcing	69	22.3
Software development	48	15.5
Support services	56	18.1
Internet-based business	41	13.2
Hardware design	15	4.8
Institutes of Higher Learning	21	6.8
MSC International world class Incubators	2	.6
	27	8.7
Working Experience		
Less than 1 year	15	4.8
1-5 years	123	39.7
6 – 10 years	95	30.6
More than 10 years	77	24.8

Tenure in the present organizations		
Less than 1 year	55	17.7
1-5 years	113	36.5
6 – 10 years	74	23.9
More than 10 years	68	21.9
Education Level (KW)		
SRP/PMR or below	-	-
SPM/MCE/O-LEVEL	-	-
STPM/HSC/A-LEVEL	-	-
Diploma Level	43	13.9
First Degree	172	55.5
Postgraduate	95	30.6

Table 6: Correlation Matrix of the Variables

	Variables	IWB	PIC	LMX	SC
1	Innovative work behavior (IWB)	1.000			
2	Pro-innovation climate (PIC)	.459**	1.000		
3	Leader-member exchange (LMX)	.406**	.701**	1.000	

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