

A Conceptual Review of Innovative Work Behavior in Knowledge Intensive Business Services among Knowledge Workers in Malaysia

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Abstract

Innovation has become a prerequisite in many knowledge based economy. Any organization that oblivious to this reality and does not innovate will become the ultimate reason for the decline and demise of existing organizations. However, today's innovation and its paradigm, in all its forms, products, services, processes, and work methods, is considered more of a product of the human mind and its creativity, 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. The focus of the study is on innovative work behavior, a smaller-scale, but much more common, innovations related to incremental and often non-technological improvements in service concepts and work processes. For knowledge-intensive business services, such improvements are of major importance. Its nature implies that incremental adjustments must be made continuously to meet client needs. In knowledge-intensive service organizations, it is customary that all knowledge workers can contribute to the innovation process through the innovative work behavior.

Keywords: Innovative Work Behavior, Knowledge Workers, Knowledge-Intensive Business Services

1. Introduction

1.1 Background

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 oblivious to this reality and does not innovate will become the ultimate reason for the decline and demise of existing organizations (Drucker, 1989). According to Amabile (1997), no organization could expect to remain viable if its *raison d'être* is simply to produce the same products and services in the same ways over time. 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. Innovation has become a prerequisite in many knowledge based economy. Therefore, a lot of effort has been carried out by the Ministry of Science, Technology and Innovation, Malaysia (MOSTI) to ensure that innovation exists in all sectors of the economy (MOSTI, 2006). Nevertheless, as stated by Tan and Nasurdin (2010), MOSTI had reported that there are still have many economic sectors that lacked of innovation in all its manifestation.

Moreover, Malaysia's export structure had not changed much with a strong focus on the electronics sector. This, coupled with a low and medium technology sector, results in low demand for innovation. In terms of patents, Malaysia's record is exceptionally low when compared to the levels reached in the developed countries. This can be seen from the number of United States Patent and Trademark Office (USPTO) patents secured in the year 2004 where only 92 patents were secured by Malaysia which was very less relative to the number achieved by Korea (4,428), Taiwan (5,938) and Singapore (449) for the same year (Kassim, 2009). This patenting record is significantly related to innovative work behavior because according to Scott and Bruce (1994), employee innovative work behavior was positively related to the number of invention/patent filed.

There were also concerns on the effectiveness of the national education system in producing a workforce that is competent in today's knowledge-intensive economy. Postgraduate enrollment in science and engineering in Malaysia is low compared with countries such as Korea and Taiwan. There have been concerns about how creativity is lacking among students in Malaysian schools and institutions of higher learning where rote learning is the norm (MOSTI, 2007). Based on the above dismal statistics and statements, one of the ways to jump start the foray of Malaysia into the global knowledge economy is through business services sector (MIER, 2010). In terms of sectoral contribution to the gross national income (GNI), the business sectors had shown a significant figure and started to show signs that it is going to overtake the manufacturing sector in the near future. This is evidenced when it had contributed RM19.5 billion in the year 2009 GNI. In line with this global knowledge economy, one particular subset of services sector namely; Knowledge-Intensive Business Services (thereafter termed as KIBS) has come into the fore of Malaysia with great potential to be tapped. The adoption of KIBS is in line with the establishment of the National Innovation Model (NIM) in the year 2007 by the Ministry of Science, Technology and Innovation Malaysia (MOSTI, 2011). The NIM existence has pushed for a balanced approach between technology-driven and market-driven innovations in order to sustain Malaysia's global competitiveness.

In defining KIBS, two criteria needed to be taken into consideration. First, the way services are provided, and second, from the perspective of role agent, in which looking at the impact of KIBS on technological improvement on those organizations that uses its services (Mas-Verdu, 2007). From the first perspective i.e. the way of service provision, Larsen (2000) reminded that it is important to have a high level of interactions between the supplier and the user of the services. This is necessary because the effectiveness of KIBS is contingent upon the interactions between suppliers and users in which both parties must be present in a service process. In addition, KIBS also play a critical role of facilitator of innovation (Strambach, 2001) in terms of knowledge reengineering (Muller & Zenker, 2001).

Miles, Kastrinos, Bilderbeek, den Hertog, Flanagan and Huntink (1995) defined KIBS as services which involve economic activities that meant to create, accumulate and disseminate knowledge. Based on Miles et al. (1995) extensive discussion of KIBS, den Hertog (2000) provided a more comprehensive definition in which KIBS were regarded as the private companies or organizations who rely heavily on professional knowledge, i.e., knowledge or expertise related to a specific (technical) discipline or (technical) functional domain to supply intermediate products and services that are knowledge based.

In addition, KIBs sector tends to do much better than the traditional manners of service delivery. This occurs simply because it is able to deliver greater improvement in service delivery by ensuring that services rendered are innovatively organized and systematized. This condition is highly necessary in extremely competitive markets for customer retention as well as for the purpose of expansion which in turns helps to improve the productivity of both local and foreign organizations (Jarman & Chopra, 2008). Besides, many activities that were regarded as non-core functions for instance human resources and customer service were transformed into core functions thereby elevated their importance in the organizations (Jarman & Chopra, 2008).

In confronting the challenge of innovation, KIBS do not merely rely on certain employees working in the research and development department. Instead, KIBS try to mobilize the creative potential of all the employees (Bessant, 2003). The likelihood of achieving successful innovation is much greater if attempts are made to force the existing positional units to become more innovative units (Nystrom, 1990). Thus, KIBS are solely dependent on the knowledge, the creativity and the innovative engagement of their knowledge workers and this is clearly evident in KIBS where the organizations do not have a separate R&D department (Bessant, 2003).

Since the work nature of KIBS organizations is made up of those of intellectual nature and of highly qualified workforce (Alvesson, 2000), the need to understand knowledge workers innovative work behavior among the Malaysian KIBS organizations is indeed crucial. Only with innovative worker, new ideas can be translated into reality (Schaffer & Paul-Chowdhury, 2002). However, the presence of KIBS in Malaysia is largely over-looked, under-theorized and under-documented (Jarman & Chopra, 2008). 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. Hence, by undertaking KIBS as a strategic and innovative service industry, it will help cement the formation of Malaysia's national innovation ecosystem, as well as the new realm of research in Malaysian higher education.

2. 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 (Cummings & Oldham, 1997). 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). 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.

2.1 Dimensions of Innovative Work Behavior

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 IWB because it specifically describes the work behaviors of an individual (in this context, knowledge worker as a unit of analysis in this paper) 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. 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.

2.1.1 Initiation stage

Many researchers have labeled the behavior of knowledge workers in the initiation stage as divergent innovative work behavior (De Jong, Den Hartog & Zoetermeer, 2003). This stage is basically about opportunities exploration for the purpose of idea generation. In this stage, all ideas should be treated as promising and present opportunities for results improvement (Amabile, 1988). In this study, initiation stage has been defined as a divergent innovative work behavior which consists of two intertwined behaviors; namely opportunity exploration and idea generation.

2.1.1 (a) Opportunity's exploration

During the opportunity exploration stage, the process of innovation occurs when knowledge workers start identifying new opportunities (Krueger, 2000). This stage is important should organizations intend to let go of the instituted routine and systems. Opportunities can be identified in several ways. It occurs when incongruities and discontinuities exist that led to the diversion of the existing patterns of things, development of problems with the existing work methods, failing in meeting the needs of the customers or even in the emergence of signs that a change in trends is taking place (Mumford, Baughman, Suppinski & Maher, 1996). In addition, opportunity exploration can also be thought of as a stage in which knowledge workers are finding ways on how the existing services or delivery processes can be improved; or it can be seen as how those workers are looking for problem solutions (Farr & Ford, 1990; Kanter, 1988). In this study, opportunity exploration is defined as identifying new opportunities, which usually lie in events that are nonlinear, tumultuous, and opportunistic. Thus, in the initiation stage, the role played by the knowledge workers can be vital in the process of developing better understanding about clients and opportunities. This is due to the fact that knowledge workers having close contact while developing long-term relationships with the customers will result in them being the source for idea generations (Atuahene-Gima, 1996).

2.1.1(b) Idea generation

In innovation, it is essential to have ideas; and the best source of new ideas will always be from individuals (Mumford, 2000). Kleysen and Street (2001) mentioned that idea generation occurs when knowledge workers were able to direct their behavior towards concept generations for improvement purpose. In this study, idea generation has been defined as a dynamic process of creation and association, generation of representations and categories of opportunities, and communication of ideas which can be in the form of abstract, concrete, or visual.

Meanwhile, the idea generation process is also said to contain generating ideas for new and renewed services, client interface or supporting technologies (Kanter, 1988; Van de Ven, 1988; Amabile, 1988), and may also mean an effort on how service delivery can get better while increasing its efficiency through the effective generation of problem solutions (Mumford, 2000). When information and existing concepts on how the problem can be solved or performance can be enhanced, being combined and reorganized, idea generations emerged (De Jong, Den Hartog & Zoetermeer, 2003). Therefore, it takes skills to combine and reorganize concepts in any creative achievement (Mumford, Baughman & Palmon, 1997). Often the initiation of innovation process happens when a performance gap (occurrence of divergence between desired and actual performance) has been discovered (Zaltman, Duncan, & Holbek, 1973). However, it is to be noted that both dimensions of innovative work behavior which refer to opportunity exploration and idea generation may not be necessarily sequential (De Jong, Den Hartog & Zoetermeer, 2003). In other words, they are more of a continuous process which contains exploring opportunities, idea generation and followed by evaluating the idea feasibility in terms of appropriateness and economic prospective.

2.1.2 Implementation stage

Basically this stage occurs when a service firm has decided on an idea. This means the idea (new service) will be converted into an actual result with a prior test before launching (De Jong, Den Hartog & Zoetermeer, 2003). The innovative work behavior at this stage is also known as the convergent innovative work behavior by De Jong, Den Hartog and Zoetermeer (2003). Furthermore, in this stage, it is necessary for knowledge workers need to become more conversant with results in the process of idea development and implementation (Mumford, 2000). When new service has been taken up and established as a status quo among the knowledge workers, the innovation process is said to have come to a conclusion (Kanter, 1988). Thus, given new idea, it has to be developed, tested and commercialized by the knowledge workers. In this study, implementation stage is defined as a convergent innovative work behavior that comprised of two intertwined elements which are championing (idea promotion) and application (idea implementation) efforts.

2.1.2 (a) Championing (Idea promotion)

Often in many cases, ideas on innovation do not come from knowledge workers that have been specifically appointed by the entrepreneur but rather ideas came from people who were truly committed and believe that their ideas will be accepted by others as well (De Jong, Den Hartog & Zoetermeer, 2003).

These people were referred to as an idea champion which basically refers to someone who put in efforts to develop a creative idea (Kleysen & Street, 2001). It can also be referred to someone without a formal role who is able to move forward a new service by overcoming all the possible organizational barriers (Shane, 1994). In addition, the ability to persuade and influencing other knowledge workers is also an act of championing (Kanter, 1983; Kanter, 1988; Anderson & King, 1993) while it is also seen to contain elements of pushing and negotiating (Maute & Locander, 1994 and Anderson & King, 1993). Although in many successful manufacturing organizations, idea champions were usually used and kept but the same scenario does not exist in the service firm (Martin & Horne, 1993). In this study, championing or idea promotion will be defined as a social-political behaviors' that involved behavior of mobilizing resources, persuading and influencing, pushing and negotiating, challenging and risk-taking which are essential to realizing the potential of ideas, solutions and innovations.

2.1.2 (b) Application (Idea implementation)

When the knowledge workers have decided to develop, test and commercialize a new service, idea implementation or the application of an idea is taking place (De Jong, Den Hartog & Zoetermeer, 2003) and innovation is thus becoming part of the organization working process (Kleysen & Street, 2001). Besides, the application stage will also contain the process of developing new services as well as the working methods (West & Farr, 1989; Van der Ven, 1988) while Anderson and King (1993), and Kanter (1983) mentioned that it also included the process of idea modification. In view of the nature of the services which is instantaneous, it is important that the knowledge workers are able to play their role well in the implementation stage. This is essential for them to have the ability to identify the needs of the customers and various competitive offerings so that service can be customized and be user friendly (De Brentani, 2001). The important role plays by the knowledge workers become more apparent during new service launching. This is because adoption of new services by clients can only take place when the knowledge workers are able to educate and persuade them on the benefits of solving problems in a new manner (Atuahene-Gima, 1996). Based on the above narration, this study defines idea implementation as developing, modifying, commercializing and routinizing an innovative idea.

As stated earlier, the two dimensions of convergent innovative work behavior is not a sequential process (De Jong, Den Hartog & Zoetermeer, 2003) but rather more of a continuous trial and error process (De Jong & Kerste, 2002). The process is said to be so and can be seen in the implementation stage of the knowledge-intensive services in which constant adjustment is made to various of new service implementation ranging from the service offering designs, selling or offering to and soliciting feedback from customers, as well as front line workers and so on and so forth (De Jong & Kerste, 2002).

3. Knowledge Worker and Innovative Work Behavior

Eisenberg (1997) noted that the world had evolved from an industrial economy to an information economy, which is based on intellectual capital and the knowledge workers. This occurs due to the nature of knowledge work which requires greater mental activities and relies on cognitive ability rather than physical ability (Davis, 2002). In this era, knowledge workers are becoming an increasingly important segment of the workforce (Gordon, 1999; Drucker, 1995). In addition, the presence of the knowledge workers has encompassed various industries and professions such as law, accounting, academia, health care and information technology (Wickramasinghe, 2000). In this context, Malaysian outsourcing industry (subsector of KIBS) generated revenues of RM3.2 billion in 2010 and is projected to grow to RM6.1 billion over the next 10 years. By 2012, the industry is expected to employ 300,000 knowledge workers to drive the nation's transformation toward a high-income, innovation-led economy (MDeC & Outsourcing Malaysia, 2010). Additionally in an innovation-led economy, it requires knowledge workers to undertake an innovative work.

In other words, in order for organizations to be successful, knowledge workers are needed while at the same time, the importance of managing knowledge workers will be as parallel as managing physical assets (Mills & Frisen, 1992). Though the need to manage knowledge workers is seen as an important task, there seems to be of little insight on how this group of workers should be managed (Drucker, 1995, 1992 & 1987). In addition to this, the managing task is even more difficult should one failed to understand that there is a difference between an innovative work and an innovative job (Madjar, Oldham & Pratt, 2002). This means that innovative work that benefits the organization may be generated by employees in any position or job and at any level of the organization (Frangos, 1993), not just in jobs that are traditionally viewed as necessitating innovative, such as R&D positions (Pelz & Andrews, 1966).

Knowledge workers in a non R&D position may have innovative ideas related to their immediate task, the working process, or the organization in general (Axtell et al., 2000). In this paper, the author adopts the concept of innovative work and associates it with the knowledge workers working in KIBS.

Many literatures viewed knowledge work as challenging and non-routine, and it can be further described as being related to the solving of an unstructured task (Delbridge, 2003). Hislop (2005) defined knowledge workers as: “people whose work is primarily intellectual and non-routine in nature, and which involves the utilizations and creation of knowledge”. Based on this definition, a large range of occupations may be classified as knowledge-intensive, including lawyers, consultants, IT/software designers, advertising executives, accountants, scientists/engineers, and architects (Hislop, 2005). One of the characteristics of knowledge workers can be seen in their ability to spot the value of knowledge which can then be used to improve productivity (Nonaka, Toyama & Konno, 2000). The nature of knowledge is unique as described by Smith and Rupp (2004) in which they claimed that “ a knowledge worker is a different kind of employee, characterized by being paid not to create, produce or manage a tangible product and/or service, but rather to gather, develop, process and apply information that generates profitability to the enterprise” (p.146). The characteristics of knowledge worker were also explained by Amar (2002) as cited by Smith and Rupp (2004) in which knowledge workers are referred to as a group of workers who has the abilities to pass on the distinctive skills, intelligence as well as their work methods to the place of work.

Knowledge worker was also defined as those workers who are doing non-repetitive, non-routine work, which entails substantial levels of cognitive activity. At the same time, those workers also possessed specialized skills and training, which have been acquired through education reflecting a significant resource investment such as in terms of time and money (Helton, 1988; Kelly, 1990). The idea of knowledge workers was also seen from the perspective of empowerment and autonomy. As noted by Wickramasinghe and Ginzberg (2001), the ability of the knowledge worker was well recognized to the extent that they are empowered and given autonomy to make impactful decisions. Further, in view of the effects that knowledge workers can have on the overall organization performance, managing them becomes imperative (Wickramasinghe & Ginzberg, 2001). Thus, given such importance of the knowledge workers in organizations, the author’s motivation to carry out a study on the determinants of the innovative work behavior among the knowledge workers in KIBS was further justified.

However, knowledge workers (KW) as defined by the Malaysian Government differs from other countries such as the US, UK and Germany. The definition provided by the Multimedia Development Corporation (MDC) in Malaysia (1999) as “An individual who possesses one of these qualifications such as five or more years’ professional experience in multimedia/information and communication technology (ICT) business or in a field that is a heavy user of multimedia; a university degree (in any discipline) or a graduate diploma (multimedia/ICT) from a professional experience in multimedia; and a master degree or higher in any discipline”. In this paper, the author will adopt the definition provided by MDC (1999). This implies that all University Graduates or Diploma Holders can become KW even though they will not continue working in their field and this is different from the context of US, UK and Germany.

The knowledge workers of a service firm are at the heart of the new service development process. The task of knowledge workers involved innovation, creativity and problem solving, and so, their commitment and contribution have a serious impact to the long-term development of a firm (Tan, 2008). Therefore, it is not uncommon to see that many theorists have suggested that successful innovation in the organization was contributed by the effort of these knowledge workers that may have involved in the idea generation, conceptual formulation as well as final specifications (Van de Ven, 1986; De Brentani, 2001 and West & Farr, 1989). Thus, in order to have an incremental bottom-up innovation to occur, knowledge workers should possess an innovative work behavior (Amabile, 1988 and Imai, 1990) and those organizations that comprised of knowledge workers that depends heavily on a pre-planned prescribed behavior would lead to a vulnerable social system (Katz, 1964). The importance of innovative work behavior among knowledge workers for the effective functioning and organization perpetuality was further echoed by Janssen (2000).

4. Conclusions

The focus of this paper is on explaining the innovative behavior of knowledge workers. Innovative behavior can be defined as “all individual actions directed at the generation, introduction and application of beneficial novelty at any organizational level” (West & Farr, 1989).

It is a necessary condition for incremental innovations to come into being. In academic research, radical innovation often captures the imagination, but the focus of the paper is on smaller-scale, but much more common, innovations related to incremental and often non-technological improvements in service concepts and work processes. For knowledge-intensive business services, such improvements are of major importance. Its nature implies that incremental adjustments must be made continuously to meet client needs. In knowledge-intensive service organizations, it is customary that all knowledge workers can contribute to the innovation process.

References

- Alvesson, M. (2000). Social identity and the problem of loyalty in knowledge-intensive companies. *Journal of Management Studies*, 37(8), 1101-23.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. In B. M. Staw & L.L. Cummings (Eds.), *Research in organizational behavior* (Volume 10, pp.123-167). Greenwich, CT: JAI Press.
- Amabile, T. M. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, 40(1), 39-58.
- Amar, A.D. (2002). *Managing knowledge workers*. New York: Quorum.
- Anderson, N.R., & King, N. (1993). Innovation in organizations. *International Review of Industrial and Organizational Psychology*, 8, 1-34.
- Atuahene-Gima, K. (1996). Differential potency of factors affecting innovation performance in manufacturing and services organizations in Australia. *Journal of Product Innovation Management*, 13, 35-52.
- Axtell, C.M., Holman, D.J., Unsworth K.L., Wall, T.D., Waterson, P.E., & Harrington, E. (2000). Shop floor innovation: Facilitating the suggestion and implementation of ideas. *Journal of Occupational and Organizational Psychology*, 73, 265-285.
- Bessant, J. (2003). Challenges in innovation management. In: L. V. Shavinina (ed.): *The international handbook on innovation*. Oxford, UK: Elsevier, 761-774.
- Cummings, A., & Oldham, G.R. (1997). Enhancing creativity: managing work contexts for the high potential employee. *California Management Review*, 40(1), 22-38.
- Davis, G.B. (2002). Anytime/anyplace computing and the future of knowledge work. *Communications of the ACM*, 45(12), 67-73.
- De Brentani, U. (2001). Innovative versus incremental new business services: Different keys for achieving success. *Journal of Product Innovation Management*, 18(3), 169-187.
- De Jong, J.P.J., & Kerste, R.A.J. (2002), *De kracht van het idee: betere resultaten door innovatief gedrag van medewerkers*. Academic Service: Schoonhoven.
- De Jong, J., Den Hartog, D., & Zoetermeer. (2003). Leadership as determinant of innovative behavior: A conceptual framework. Research Report H200303, 1-95.
- Delbridge, R. (2003). Knowledge, innovation and institutional change. *Work, Employment and Society*, 17(1), 187-96.
- Den Hertog, P. (2000). Knowledge-intensive business services as co-producers of innovation. *International Journal of Innovation Management*, 4 (4), 491-528.
- Drucker, P.F. (1987). Management, the problem of success. *Academy of Management Executive*, 1(1), 13-19.
- Drucker, P.F. (1989). *The New Realities*. New York: Harper and Row.
- Drucker, P.F. (1992). The new society of organization. *Harvard Business Review*, Sept- Oct, 95- 104.
- Drucker, P.F. (1995). *Managing in Time of Great Change*. New York: Truman Talley Books.
- Eisenberg, H. (1997). Reengineering and downsizing: mismanagement of the knowledge resource. *Quality Progress*, 30(5), 57-64.
- Farr, J., & Ford, C. (1990). Individual innovation. In West, M. & Farr, J. (Ed.), *Innovation and creativity at work: Psychological and Organizational Strategies* (pp. 63-80). Wiley: Chichester.
- Frangos, S.J. (1993). *Team zebra*. Essex Junction: Oliver Wight.
- Gordon, J. (1999). Intellectual capital and you. *Training*, 36(9), 30-8.
- Helton, B. (1988). The 'best work' method of knowledge workers assessment. *Industrial Management*, 30(5), 19-21.

- Hislop, D. (2005). *Knowledge management in organizations: A critical introduction*. Oxford: Oxford University Press.
- Imai, M. (1990). *Kaizen*. Deventer-Antwerpen: Kluwer.
- Jain, R. (2010). Innovation in organizations: A comprehensive conceptual framework for future research. *South Asian Journal of Management*, 17 (2), 81-111.
- Jarman, J., & Chopra, P.S. (2008). Business services and the knowledge economy in Malaysia. *International Journal of Sociology and Social Policy*, 28(5/6), 93-203.
- Kanter, R. M. (1983). *The change masters: Innovations for productivity in the American corporation*. New York: Simon and Schuster.
- Kanter, R.M. (1988). When a thousand flowers bloom: structural, collective and social conditions for innovation in organizations. *Research in Organizational Behavior*, 10, 169-211.
- Kassim, H. (2009). Innovation, R&D and technology. NEAC Paper, 3/2, 1-20. Retrieved 30 March from http://www.neac.gov.my/files/Innovation_R&D_and_Technology.pdf.
- Katz, D. (1964). The motivational basis of organizational behavior. *Behavioral Science* 9, 13- 146.
- Kelly, R. (1990). Managing the workforce. *Machine Design*, 62(9), 109-113.
- Kleysen, R.F., & Street, C.T. (2001). Towards a multi-dimensional measure of individual innovative work behavior. *Journal of Intellectual Capital*, 2(3), 284-296.
- Krueger, N.F.(2000). The cognitive infrastructure of opportunity emergence. *Entrepreneurship Theory and Practice*, Spring, 5-23.
- Madjar, N., Oldham, G.R., & Pratt, M.G. (2002). There's no place like home? The contributions of work and non-work creativity support to employees' creative performance. *Academy of Management Journal*, 45, 757-767.
- Martin, C.R., & Horne, D.A. (1993). Services innovation: successful versus unsuccessful organizations. *International Journal of Service Industry Management*, 4, 48-64.
- Mas-Verdu, F. (2007). Services and innovation systems: European models of technological centers service business. *An International Journal*, 1, 7-23.
- Maute, M., & Locander, W.(1994). Innovations as a socio-political process: an empirical analysis of influence behavior among new product managers. *Journal of Business Research*, 30, 161-74.
- Miles, I., Kastrinos, N., Bilderbeek, R., den Hertog, P., Flanagan, K. & Huntink, W. (1995). *Knowledge-intensive business services: their role as users, carriers and sources of innovation*, Report to the EC DG XIII, Luxembourg: Sprint EIMS Programme.
- Miller, D. & Friesen, P. H. (1982). Innovation in conservative and entrepreneurial organizations: Two models of strategic momentum. *Strategic Management Journal*, 3(1), 1-25.
- Ministry of Science, Technology and Innovation, Malaysia (MOSTI) (2006). *National survey of Innovation 2002-2004*. Putrajaya: Malaysian Science and Technology Information Centre.
- Ministry of Science, Technology and Innovation, Malaysia (MOSTI) (2011). National Innovation Model 2007. Retrieved 29 January 2011 from <http://www.mosti.gov.my/mosti/images/pdf/innovation%20model%20jtpin.pdf>.
- Multimedia Development Corporation (MDeC), Malaysia. (1999). Retrieved 11 February 2011 from <http://www.msc.com.my>.
- Multimedia Development Corporation (MDeC), Malaysia. (2010). Retrieved 18 May 2011 from <http://www.msc.com.my>.
- Muller, E., & Zenker, A. (2001). Business services as actors of knowledge transformation: The role of KIBS in regional and national innovation systems. *Research Policy*, 30, 1501- 1516.
- Mumford, M.D. (2000). Managing creative people: strategies and tactics for innovation. *Human Resources Management Review*, 10(3), 313-51.
- Mumford, M.D., Baughman, W.A., Suppinski, E.P., & Maher, M.A. (1996). Process based measures of creative problem-solving skills: Information encoding. *Creativity Research Journal*, 9, 77-88.
- Mumford, M.D., Baughman, W.A., & Palmon, R. R. (1997). Thinking creativity at work: organizational influence on creative problem solving. *Journal of Creative Behavior*, 31, 7-17.

- Nonaka, I., Toyoma, R., & Konno, N. (2000). SECI and leadership: A unified model of dynamic knowledge creation. *Long Range Planning*, 33, 5-34.
- Nystrom, H. (1990). Organizational innovation. In Michael A West & James L. Farr (Eds), *Innovation and creativity at work: Psychological and organizational strategies*, (pp.143- 161). Chichester: John Wiley & Sons Ltd.
- Pelz, D.C., & Andrews, F.M. (1966). Autonomy, coordination, and stimulation in relation to scientific achievement. *Behavioral Science*, 11, 89-97.
- Peters, T. J. & Waterman, R. H. (1982). *In search of excellence: Lessons from America's best-run companies (1st Ed.)*. New York: Harper & Row.
- Rogers, E.M. (2003). *Diffusion of Innovations*. New York: Simon and Schuster.
- Romer, P.M. (1990). Endogenous technological change. *The Journal of Political Economy*, 98 (5), S70-S102.
- Ruttan, V.W. (1959). Usher and Schumpeter on invention, innovation, and technological change. *The Quarterly Journal of Economics*, 73(4), 596-606.
- Schaffer, R.H., & Paul-Chowdhury, C.M. (2002). Implementation: There's more to innovation than great ideas. *Ivey Business Journal*, 67(2), 1-6.
- Scott, S.G., & Bruce, R.A. (1994). Determinants of innovative work behavior: a path model of individual innovation in the workplace. *Academy of Management Journal*, 38, 1442-65.
- Shane, S.A. (1994). Are champions different from non-champions? *Journal of Business Venturing*, 9(5), 397-421.
- Smith, A.D., & Rupp, W.T. (2004). Knowledge workers' perceptions of performance ratings. *Journal of Workplace Learning*, 16(3), 146-166.
- Smith, G.P. (2002). *The new leader: bringing creativity and innovation to the workplace*. Conyers: Chart Your Course.
- Strambach, S. (2001). Innovation process and the role of knowledge-intensive business services. In K. Koschatzky, M. Kulicke, & A. Zenker (Eds.), *Innovation networks— concepts and challenges in the european perspective* (pp. 53-68). Heidelberg, New York: Physica-Verlag.
- Tan, C.L. & Nasurdin, A.M. (2010). The influence of knowledge management effectiveness on administration innovation among Malaysian manufacturing organizations. *Asian Academy of Management Journal*, 15(1), 63-77.
- Tan, F., M. (2008). Organizational support as the mediator of career-related HRM practices and affective commitment: Evidence from knowledge workers in Malaysia. *Research and Practice in Human Resource Management*, 16(2), 8-24.
- Van de Ven, A.H. (1988). Innovations and Organizations: Critical Perspectives *Communication Research* October, 15, 632-651.
- West, M.A., & Farr, J.L. (1989). Innovation at work: Psychological perspectives. *Social Behavior*, 4, 15-30.
- West, M.A. & Farr, J.L. (1990). Innovation at work. In West, M.A. and Farr, J.L. (Eds), *Innovation and Creativity at Work: Psychological and Organizational Strategies* (pp.3- 13). Chichester : Wiley.
- Wheelwright, S. C., & Clark, K. B. (1995). *Leading product development: the senior manager's guide to creating and shaping the enterprise*. New York: Free Press.
- Wickramasinghe, N., & Ginzberg, M. J. (2001). Integrating knowledge workers and the organization: the role of IT. *International Journal of Health Care Quality Assurance*, 14(6), 245-253.
- Zaltman, G., Duncan, R., & Holbek, J. (1973). *Innovations and Organizations*, New York: Wiley.

The determinants of innovative work behavior in the knowledge intensive business services sector in Malaysia. *Asian Social Science*, 9(15), 47-59. <https://doi.org/10.5539/ass.v9n15p47>. Kim, H. L., Rhou, Y., Uysal, M., & Kwon, N. (2017). An evaluation of conceptual weaknesses in transformational and charismatic leadership theories. *The Leadership Quarterly*, 10(2), 285-305. [https://doi.org/10.1016/S1048-9843\(99\)00013-2](https://doi.org/10.1016/S1048-9843(99)00013-2). Zhang, Y., Huai, M., & Xie, Y. (2015). 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). *Asian Social Science*, 2013. [156]. 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. NULL 2013. [157]. There are an increasing number of knowledge intensive organizations allocating external employees. This study conducted a survey to present a concept of innovative behavior by investigating organizational motivation, personal creative characteristics, and climate for innovation in both internal and external employees for universities in Taiwan. Employment Modes and Innovative Behavior. From a social exchange perspective, we could expect that external employees will adopt a more transactional view of worker-organization relations in contexts with severe labor shortages, where status tends to be voluntary (Dyne and Ang, 1998). Social exchange is a pattern of mutually contingent tangible and intangible exchanges (Blau, 1964).