Information and Knowledge Management
ISSN 2224-5758 (Paper) ISSN 2224-896X (Online)
Vol.4, No.9, 2014

Examining the Role of Knowledge Sharing in Promoting Innovation in the Service Sector of Pakistan

Syed Harris Laeeque
Student, Department of Management Sciences, Bahria University, Islamabad
Email: harris970@live.com

Abstract
The present research paper aims to conduct an in-depth investigation to determine how knowledge sharing influences experimental innovation, exploitative innovation, and also their concurrent form, i.e. ambidextrous innovation. To achieve this aim successfully, the principles of causal research positivist paradigm is followed. Data is gathered from 192 lower and middle managers in different private organizations in the service sector of Pakistan and is analyzed through the techniques of inferential statistics, such as, regression, correlation and factor analysis. The main findings of the present study reveal that there is a significant positive influence of knowledge gathering on exploitative, experimental and ambidextrous innovation. While, there is a significant positive impact of knowledge contribution from inside the department on the ambidextrous and exploitative innovation. In contrast, there is no statistically significant impact of knowledge contribution from outside the department on any of the three strategies of innovation. The study hopes to draw the attention of the academicians and practitioners towards the significant role of knowledge sharing on the dimensions of innovation.
Keywords: knowledge, knowledge sharing, knowledge creation, exploitative innovation, experimental innovation, ambidexterity innovation

1. Introduction

In this age and time, the rivalry between businesses and other institutions is intensifying at an exponential rate, especially due to the increasing flexibility of production activities and declining costs of technology (Volberda, 1996; Schulze et al., 2008; Hanssen-Bauer & Snow, 1996). For realizing and keeping hold of the organizational effectiveness in the global market of today, the development of state-of-the-art products and services has turn out to be the most crucial aspect (Miron et al., 2004). For all those businesses that are in quest of making their stronghold in the contemporary markets and safeguarding their continued existence, innovation is indeed, exceptionally critical to them. An ever increasing number of academicians and practitioners are acknowledging innovation as a source of supremacy for the businesses and other institutions (Drach-Zahovy et al., 2004). The text on organizational development considers two factors as indispensable for ensuring continued success and survival in the long-run, and they are: knowledge and innovation. Knowledge is the primary and decisive asset for an organization (Grant, 1996; Conner & Prahalad, 1996; Nahapiet & Ghoshal, 1998) as it authorizes many unique organizational upshots, such as, the whole chain of innovation and development (Kogut & Zander, 1996; Smith et al., 2005). Moreover, there is compelling evidence which validates that for the process of innovation, and especially for the managing innovation, knowledge is the fundamental organizational element (Nonaka & Takeuchi, 1995; Darroch & McNaughton, 2002).

Besides, there are also two elements that are regarded as vital for ensuring continued existence of businesses, and they are, the capacity to attain experimental and exploitative innovation. When both these elements are realized at the same time, it is referred as attaining ambidexterity. Therefore, the purpose of the present study is to investigate the influence of knowledge sharing on the experimental and exploitative innovation, and also on their- concurrent form, i.e. ambidexterity. As this study intends to explore and clarify the association between innovation practices and knowledge sharing, it can be expected that the managements of different types of organizations will be able to refine their innovation management practices.

2. Literature review

2.1 Knowledge sharing

Knowledge has always been regarded as an indispensable resource for the success of any kind of business, but in the present age of information, it enjoys the same status as coal or oil had during the industrial revolution. The significance of knowledge for organizations was underlined by Voelpel et al. (2005) when they asserted that for upholding the competitive advantage, the aggregate of the knowledge obtained through internal and external means creates a sustainable economic asset. Nilakanta et al. (2006) put forward that besides improving the overall performance of an organization, organizational knowledge has also a considerable role in enhancing and maintaining the competitiveness of that firm. Furthermore, the studies of Nonaka and Takeuchi (1995) and Nonaka (1991) also proposed that organizational innovation is directly linked to the construct of “knowledge

creation". The process of creating knowledge was explicated very well by Nonaka et al. (2006) when they stated that it is an incessant course of learning through obtaining different perspectives, different outlooks of the world, and fresh insights by going beyond the individual limitations and controls inflicted by the prevailing boundaries of information.

For learning and attaining fresh knowledge, it is essential for employees to act and work together, and communicate with each other various kinds of tacit and explicit knowledge. Through this manner, employees enhance their capability to recognize and describe a condition or problem, and put their acquired knowledge into operation so as to solve it (Nonaka et al., 2006). For this reason, scholars deem the course of knowledge sharing as a critical matter in firms (Sa´enz et al., 2009).

The conceptualization of knowledge sharing put forward by Van Den Hooff and De Ridder (2004) is used to achieve the objectives of this study. In their opinion, knowledge sharing is a process by means of which people come together and communicate their tacit (implied) and explicit (overt) knowledge regarding a particular matter so as to generate fresh knowledge. The most common categorization of knowledge is tacit and explicit knowledge. Knowledge that is labeled as explicit can be systemized and articulated in normal verbal, oral, or written communication. Whereas, knowledge that is labeled as tacit is difficult to articulate, symbolize, or share, is instinctive and unstated, and is hard to put into words (Li & Gao, 2003). As compared to explicit knowledge, tacit knowledge has received considerable attention from the academicians, particularly due its unconventional, personal and difficult to express nature. Owing to the difficulty faced in codifying and straightforwardly communicating tacit knowledge, imitation, observation, and sharing experiences are the only means through which it can be acquired effectively (Hall & Andriani, 2002; Kikoski & Kikoski, 2004; Seidler-de Alwis & Hartmann, 2008). Knowledge can never be created only through the combination of tacit or explicit knowledge; instead, both these forms of knowledge should be combined together to create knowledge successfully. Knowledge is created by means of a cyclical type of interface between tacit and explicit knowledge. This highlights the immense significance of sharing both these forms of knowledge for the successful generation of fresh knowledge. Knowledge sharing, in accordance with its definition presented by Van Den Hooff and De Ridder (2004), has two main features: gathering or obtaining, and spreading or contributing knowledge. Knowledge is contributed when a person, according to his/her own will, passes on the knowledge to others for the sake of benefiting them. Similarly, knowledge is gathered when people try to encourage others to communicate their privately held know-how. Though, distinct in nature, the ultimate objective of both these features is the same: sharing of knowledge (Van Den Hooff & De Ridder, 2004).

2.2 Innovation

The concept of innovation, as per the study of Thompson (1965), is described as the initiation, recognition, and execution of novel viewpoints, practices, goods, or services. In the opinion of Amabile et al. (1996), the effective application of resourceful notions by the organization is referred as innovation. In accordance with an all-embracing conceptualization offered by the duo of West and Farr (1990), innovation is a premeditated initiation and utilization of new-fangled products, courses, or concepts that are created to appreciably help people, groups, businesses or the larger society. Anderson et al. (2004) opined that this conceptualization is notable for the reason that it clearly makes a distinction between creativity and innovation by stating that innovation corresponds to the deliberate initiation and utilization of unique and enhanced means of getting something done. Barnett (1953), in simple terms, characterized innovation as launching anything that is original. The text on innovation labels and examines it as an amalgamation of original creation and utilization (Roberts, 1987; Kikoski & Kikoski, 2004). Innovation can be realized by means of two distinctive approaches: viz. exploitation and experimentation. Where, exploitation refers to taking advantage of accessible prospects; while, experimentation refers to searching and constructing something fresh (March, 1991; Tushman & O'Reilly, 1996; Schulze et al., 2008).

The prior studies regarding the concept of innovation have validated the existence of a positive association between innovation and successful knowledge management (Cohen & Levinthal, 1990; Nonaka & Takeuchi, 1995; Hargadon & Sutton, 1997; Dougherty et al., 2002; Darroch & McNaughton, 2002; Smith et al., 2005). For instance, the study of Dougherty et al. (2002) debated that the collection of fresh knowledge is the cornerstone for innovation in organizations, which ultimately facilitates them to reach resourceful solutions. In the same way, Hargadon and Sutton (1997) postulated that communication of knowledge within the organization facilitates rapid and effective solutions of almost any kind of problem. Moreover, they also posited that through the inter-organizational communication of knowledge, the know-how of one individual or group is passed on to the other. The information already possessed by the second individual or group, combined with the know-how of the first one, can possibly lead to the development of innovative products, services, or processes. In the opinion of

various other researchers also, the most crucial building block of innovation is knowledge sharing (Drucker, 1985; Tsai, 2001; Lin, 2001; Bubner, 2001; Storey and Kelly, 2002; Afuah, 2003). A notable study performed by Storey and Kelly (2002) established that the leading barrier to innovation and creativity in the contemporary businesses is the lack of proper mechanisms for supporting knowledge sharing. Additionally, Tsai (2001) also voiced his opinion that for the development of new-fangled commodities or innovative ways of thinking, sharing of knowledge is vital.

The spreading of knowledge and receptiveness towards it, together called knowledge sharing, are increasingly being regarded as the two chief constituents influencing innovation, owing to their distinct and inimitable nature in an organization (Day, 1994; Grant, 1996; Teece, 1998). On the whole, the continuous collection and integration of fresh knowledge will possibly result in innovation in the workplace (Subramaniam & Youndt, 2005). For generating better understanding regarding the impact of knowledge sharing, it is better to consider both the aspects of innovation concurrently. Exploitative innovation makes use of the shared knowledge to enhance and expand the existing organizational products, services, and practices, while, the experimental innovation draws on the transferred knowledge to develop entirely new and unique technologies, products, and services (Bierly et al., 2009). Seidler-de Alwis and Hartmann (2008) asserted that for innovation to take place, the creativity mandatory for it originates from two sources: clear and discernible know-how, and also from the imperceptible collection of expertise. Each and every time, the employees come together to communicate their tangible and intangible incidents and savvies, innovation and creativity in the organization is improved. For that reason, it is rightly said that sharing of knowledge is central for the exploitative and experimental knowledge to transpire. All the above mentioned discussion leads to the development of the following hypotheses:

H_1: Knowledge sharing has a positive influence on experimental innovation
H_2: Knowledge sharing has a positive influence on exploitative innovation

2.3 Ambidexterity

The frequent fluctuations in the business environment, globalization, and augmented consumer expectations have compelled the modern organizations to incessantly develop new kinds of competitive advantages, which in due course, lay stress on the significance of experimenting new abilities and exploiting the already existing resources in the organization so as to achieve ambidexterity (March, 1991; Schulze et al., 2008). The concept of ambidexterity is difficult to put into words. The studies of March (1991) and He and Wong (2004) have attempted to define this concept as keeping an equilibrium between exploitation and experimentation; where, experimentation is referred as exploration, encounter, investigation, tractability, discrepancy and derring-do, while, exploitation is characterized by terms like enhancement, application, effectiveness, creation and assortment. There is a difference between these two strategies (exploitation and experimentation) with respect to the realization of earnings for a firm within a specific period of time. Exploitative innovation results in the achievement of earnings with greater certainty and in a comparatively lesser period of time, while, experimental innovation produces varying returns in a longer period of time (He & Wong, 2004). Putting it differently, an organization that carries out experimental innovation puts itself to jeopardy because its functioning can differ to a large extent owing to the indeterminate disposition of experiencing new prospects. In contrast, organizations that are exploiting the already existing assets and prospects are expected to show a relatively steady rate of functioning (He & Wong, 2004).

The significant role of ambidexterity for achieving sustainable organizational success was highlighted in the study of Tushman and O'Reilly (1996) when they drew attention to the point that all kinds of successful organizations have evolved by passing through long phases of progressive transformation, in conjunction with periods of radical change caused by shifts in the environment. The variations in the business environment of today, triggered by the economic conditions and technological advancements, have made it apparent to implement progressive changes along with the radical ones. Tushman and O'Reilly (1996) asserted on the necessity for maintaining equilibrium between experimental and exploitative innovation by explaining that ambidextrous organizations have the ability to match the requirements of developed markets and cater to the needs of developing markets. A fully developed market requires incremental, efficiency and cost innovation; while, a developing market necessitates innovation in flexibility, speed and experimentation. Hence, ambidextrous organizations, that are able to achieve both, exploitative and experimental innovation, can be expected to accomplish higher levels of performance as compared to those organizations that give emphasis to only one sort of innovation (Tushman & O'Reilly, 1996; He & Wong, 2004). Taking into account the stress laid on the significance of ambidexterity, it has become imperative to determine measures through which it can be fostered in the organization. The interface between experimental and exploitative innovation gives rise to ambidexterity; therefore, the factors responsible for these two types of innovational approaches are often

regarded as the predecessors of ambidexterity (He & Wong, 2004; Schulze et al., 2008). Thus, it can be inferred that knowledge sharing is also responsible for bringing about ambidexterity. All the above mentioned discussion leads to the development of the following hypothesis:

H_3: Knowledge sharing has a positive influence on ambidexterity

The comprehensive conceptual model of the present study is exhibited in figure 1.

3. Methodology

A total of 450 questionnaires were disseminated to the lower and middle management of different private organizations in the service sector of Pakistan. A decent number of useable questionnaires, i.e. 192, were returned by the respondents which generated a response rate of 43%.

To quantify the two types of innovation discussed in the literature review, Jansen et al.'s (2006) scale, derived from the research conducted by Uzzi and Lancaster (2003), Benner and Tushman (2003) and Abernathy and Clark (1985), is selected for the present study. Similarly, Van Den Hooff and De Ridder' (2004) scale for measuring knowledge sharing is adopted for the study after making some amendments to it. This scale is designed in a manner that both the dimensions of knowledge sharing, i.e. knowledge contribution and knowledge gathering, can be measured. All questions in the original scales were retained in the instrument, while, only one new question was incorporated in it. The new question is as follows: the organization makes use of groupware and shareware to facilitate the collection and dissemination of knowledge and information. The multiplicative interface between the variables of exploitative and experimental innovation is used to determine the ambidextrous type of innovation. The replies obtained were documented on a five-point Likert scale, where, ❶ corresponds to "strongly agree" and ❺ corresponds to "strongly disagree".

4. Results

All the three scales used in the present study to quantify and measure the variables of interest are highly reliable as the values of their Cronbach's Alpha coefficient and Guttman split-half coefficient are fairly high. The Cronbach's Alpha coefficient for the scales of knowledge sharing, exploitative innovation, experimental innovation and ambidextrous innovation are 0.886, 0.823, 0.815 and 0.762 respectively; while, the Guttman split-half coefficients for these three scale are 0.835, 0.789, 0.775 and 0.837 respectively. The findings of the reliability analysis are exhibited in table 1.

The results of the exploratory factor analysis carried out on the scale of innovation revealed that the two factors (exploitation and experimentation) account for 64% of the overall variation (see table 2).

The results of the exploratory factor analysis carried out on the scale of knowledge sharing revealed that the three factors (knowledge gathering, knowledge contribution inside and knowledge contribution outside) account for 80% of the overall variation (see table 3).

The findings of the Pearson correlation analysis, along with the means and standard deviations, are exhibited in table 4. They reveal that the variables of the study are moderately associated with each other.

4.1 Regression analyses

Multiple regression analysis was carried out on the gathered data in the following three steps

In the first step, experimental innovation was regressed by the three elements of knowledge sharing (see table 5). The results disclosed that only one element of knowledge sharing, i.e. knowledge gathering (β=0.326, p=0.000), has a statistically significant influence on experimental innovation. Whereas, the other two elements i.e. knowledge contribution inside (β=0.098, p=0.655) and knowledge contribution outside (β=0.258, p=0.131), do not have any statistically significant influence on experimental innovation. This leads to the partial acceptance of the first hypothesis (H_1).

In the second step, exploitative innovation was regressed by the three elements of knowledge sharing (see table 6). The results disclosed that two elements of knowledge sharing, i.e. knowledge gathering (β=0.281, p=0.000) and knowledge contribution inside (β=0.549, p=0.000), have a statistically significant influence on experimental innovation. Whereas, the other element i.e. knowledge contribution outside (β=0.413, p=0.162) does not have any statistically significant influence on experimental innovation. This leads to the partial acceptance of the second hypothesis (H_2).

In the last step, ambidexterity was regressed by the three elements of knowledge sharing (see table 7). The results disclosed that two elements of knowledge sharing, i.e. knowledge gathering (β=0.420, p=0.002) and knowledge contribution inside (β=0.105, p=0.023) have a statistically significant influence on ambidexterity. Whereas, the other element i.e. knowledge contribution outside (β=0.245, p=0.071) does not have any

statistically significant influence on ambidexterity. This leads to the partial acceptance of the third hypothesis (H_3).

5. Discussion and Conclusion

The main findings of the present study reveal that there is a significant positive influence of knowledge gathering on exploitative, experimental and ambidextrous innovation. While, there is a significant positive impact of knowledge contribution from inside the department on the ambidextrous and exploitative innovation. In contrast, there is no statistically significant impact of knowledge contribution from outside the department on any of the three strategies of innovation.

It has been noted that knowledge gathering has significant positive consequences on all the three strategies of innovation. Knowledge gathering is a dimension of knowledge sharing that entails effective consultation with co-workers, subordinates and management in order to take advantage of the knowledge possessed by them. This practice brings about a change in the conventional views regarding the job design and procedures by offering unique opinions, methods, controls and philosophies; thus, giving rise to innovation in the workplace (Darroch & McNaughton, 2002).

To foster exploratory innovation in an organization, the management is required to encourage the workers to go beyond their individual limitations and the restrictions inflicted by their prior learning experiences. This will help the workers to attain a new perspectives, new outlooks about the world, and enhance their overall knowledge (Nonaka et al., 2006). When employees are forced to acquire only the knowledge regarding an existing situation, the need for going beyond their traditional understandings and principles gradually diminishes. The present study noted that knowledge contribution inside only accounts for the variation in exploitative innovation and ambidextrous innovation; while, knowledge gathering also accounted for the variation in experimental innovation. The concept of knowledge generation is contingent on the validation and integration of the acquired knowledge, which makes it obvious that knowledge gathering has a more profound impact. However, as the already prevalent views and ideas are enhanced in exploitative innovation, the knowledge contribution may perhaps not be compulsory (Smith and Tushman, 2005; March, 1991).

The last finding of this study exhibited that the contribution of knowledge from outside the department does not have any major influence on ambidexterity and the two aspects of innovation. A key reason for this finding can be the lack of willingness among employees to receive the knowledge contributed by outsiders. To adequately receive other's knowledge, the recipients are required to develop a certain level of curiosity and awareness. If the recipients are not interested, it is hard for them to absorb the contributed knowledge. Employees within the same organizational level usually possess shared understandings; therefore, the knowledge contributed from within the department is more likely to be absorbed by them as it can be easily integrated with their existing problems and needs. Another reason explaining this finding is that employees often deliberately pay attention to only those forms of knowledge which are of interest to them. This leads to the integration of knowledge which ultimately influences all sorts of innovation. Furthermore, research on new philosophies will emerge by virtue of innovation, and this will be accompanied by conflicting viewpoints and adaptability (Smith & Tushman, 2005; March, 1991). In the due course of all this process, new knowledge is generated. In their study, Nonaka and Takeuchi (1995) posited that the knowledge shared by the employees is highly subjective since it is based on their personal experiences, values and beliefs. This makes it mandatory to first authenticate that private knowledge and then relate and integrate it with the knowledge of others. In reality, as it is rare that any two people share similar kind of attitudes, observations, philosophies and values, the knowledge that arises from personal views and know-how, and manifests individual interests, is hard to be integrated with the knowledge of others (Nonaka et al., 2006). Hence, as individuals cannot take much advantage of the knowledge contributed by a random person, it is difficult to achieve knowledge creation (Von Krogh, 2002; Nonaka et al., 2006). Employees that work within a particular department share almost similar problems, comprehensions and values, and therefore, it is more likely that the knowledge contributed by those within the department is integrated easily. This entire discussion points out that knowledge contribution from outside the department does not influences exploitative and ambidextrous innovation; while, knowledge contribution from within the department does influences.

A major contribution of the present study is that it draws the attention of the academicians and practitioners towards the significant role of knowledge sharing on the dimensions of innovation. Even though a lot of researchers have focused on this subject, not much empirical evidence is available that explains how ambidextrous innovation is influenced by knowledge sharing. This study is one of the pioneering works, especially in the context of Pakistan, which takes knowledge gathering and contribution as two dimensions of

knowledge sharing, and investigates their influence on innovation.

References

1. Abernathy, W. J., & Clark, K. (1985). Mapping the winds of creative destruction. *Research Policy, 14*(3), 3-22.
2. Afuah, A. (2003). *Innovation Management*. New York, NY: Oxford University Press.
3. Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal, 39*, 54-84.
4. Anderson, N., De Dreu, C. K. W., & Nijstad, B. A. (2004). The routinization of innovation research: A constructively critical review of the state-of-the-science. *Journal of Organizational Behavior, 25*(2), 147-73.
5. Barnett, H. G. (1953). *Innovation: The basis of cultural change*. New York, NY: McGraw-Hill.
6. Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review, 28*(2), 238-56.
7. Bierly, P. E., Damanpour, F., & Santoro, M. D. (2009). The application of external knowledge: Organizational conditions for exploration and exploitation. *Journal of Management Studies, 46*(3), 481-509.
8. Bubner, D. (2001). *An innovative approach to measuring how well innovation is managed*. Available at: www.waveglobal.com (accessed 21 August 2014).
9. Capon, N., Farley, J. U., Lehmann, D. R., & Hulbert, J. M. (1992). Profiles of product innovators among large US manufacturers. *Management Science, 38*(2), 157-69.
10. Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective in learning and innovation. *Administrative Science Quarterly, 17*(1), 178-84.
11. Conner, K.R., & Prahalad, C. K. (1996). A resource based theory of the firm: Knowledge versus opportunism. *Organization Science, 7*(5), 477-501.
12. Darroch, J., & McNaughton, R. (2002). Examining the link between knowledge management practices and types of innovation. *Journal of Intellectual Capital, 3*(3), 210-22.
13. Day, G. (1994). The capabilities of market driven organizations. *Journal of Marketing, 58*(4), 37-52.
14. Dougherty, D., Munir, K., & Subramaniam, M. (2002). Managing technology flows in practice: A grounded theory of sustainable innovation. Academy *of Management Proceedings, Technology & Innovation Management Division*, E1-E6.
15. Drach-Zahovy, A., Somech, A., Granot, M., & Spitzer, A. (2004). Can we win them all? Benefits and costs of structured and flexible innovation – implementations. *Journal of Organizational Behavior, 25*, 217-34.
16. Drucker, P. F. (1985). The discipline of innovation. *Harvard Business Review*, *May/June*, 111-27.
17. Grant, R. M. (1996). Toward a knowledge based view of the firm. *Strategic Management Journal, 17*(1/2), 109-22.
18. Hall, R., & Andriani, P. (2002). Managing knowledge for innovation. *Long Range Planning, 35*(1), 29-48.
19. Hanssen-Bauer, J., & Snow, C. (1996). Responding to hyper competition: The structure and processes of a regional learning network organization. *Organization Science, 7*(4), 413-27.
20. Hargadon, A., & Sutton, R. (1997). Technology brokering and innovation in a product development firm. *Administrative Science Quarterly, 42*(4), 716-49.
21. He, Z., & Wong, P. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science, 15*(4), 481-98.
22. Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory ınnovation, exploitative ınnovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, *52*(11), 1661-74.
23. Kikoski, C. K., & Kikoski, J. F. (2004). *The inquiring organization: Tacit knowledge, conversation, and knowledge creation skills for 21st-century organizations*, Westport, CT: Praeger.
24. Kogut, B., & Zander, U. (1996). What firms do? Coordination, identity and learning. *Organization Science, 7I*(5), 502-18.
25. Li, M., & Gao, F. (2003). Why Nonaka highlights tacit knowledge: A critical review. *Journal of Knowledge Management, 7*(4), 6-14.
26. Lin, I. (2001). Innovation in the networked world. In Hamilton, B. (Ed.), *Innovation and imagination at work* (pp.1-16). Sydney: McGraw-Hill.
27. March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science, 2*(1), 71-87.
28. Miron, E., Erez, M., & Naveh, E. (2004). Do personal characteristics and cultural values that promote innovation, quality, and efficiency compete or complement each other?. *Journal of Organizational Behavior, 25*(2), 175-99.
29. Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review, 40*(2), 242-66.
30. Nilakanta, S., Miller, L. L., & Zhu, D. (2006). Organizational memory management: Technological and

research issues. *Journal of Database Management, 17*(1), 85-95.
31. Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review, 69*(6), 96-104.
32. Smith, K. G., Collins, C. J., & Clark, K. D. (2005). Existing knowledge, knowledge creation capability, and the rate of new product introduction in high-technology firms. *Academy of Management Journal, 48*(2), 346-357.
33. Nonaka, I., Von Krogh, G., & Voelpel, S. (2006). Organizational knowledge creation theory: Evolutionary paths and future advances. *Organization Studies, 27*(8), 1179-208.
34. Roberts, E. B. (1987). Introduction: Managing technological innovation technology-based organization. *Sloan Management Review, 22*(3), 19-34.
35. Saenz, J., Aramburu, N., & Rivera, O. (2009). Knowledge sharing and innovation performance: A comparison between high-tech and low-tech companies. *Journal of Intellectual Capital, 10*(1), 22-36.
36. Schulze, P., Heinemann, F., & Abedin, A. (2008). Balancing exploitation and exploration organizational antecedents and performance effects of ambidexterity. *Best Paper Proceedings – Academy of Management (AOM) Annual Meeting,* pp. 1-6.
37. Seidler-de Alwis, R., & Hartmann, E. (2008). The use of tacit knowledge within innovative companies: Knowledge management in innovative enterprises. *Journal of Knowledge Management, 12*(1), 133-47.
38. Smith, K. G., Collins, C. J., & Clark, K. D. (2005). Existing knowledge, knowledge creation, capability, and the rate of new product introduction in high-technology firms. *Academy of Management Journal, 48*(2), 346-57.
39. Smith, W.K., & Tushman, M. (2005). Senior teams and managing contradictions: on the team dynamics of managing exploitation and exploration. *Organization Science, 16*(5), 522-36.
40. Storey, C., & Kelly, D. (2002). Innovation in services: The need for knowledge management. *Australasian Marketing Journal, 10*(1), 59-70.
41. Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal, 48*(3), 450-63.
42. Teece, D. J. (1998). Capturing value from knowledge assets: new economy, market for know-how and intangible assets. *California Management Review, 40*(3), 55-79.
43. Thompson, V. A. (1965). Bureaucracy and innovation. *Administration Science Quarterly, 5*(1), 20-34.
44. Tsai, W. (2001). Knowledge transfer in intra-organizational networks: effects of network position and absorptive capacity on business innovation and performance. *Academy of Management Journal, 44*(5), 996-1004.
45. Tushman, M. L., & O'Reilly, C. A. (1996). Ambidextrous organizations: managing evolutionary and revolutionary change. *California Management Review, 38*(4), 8-30.
46. Uzzi, B., & Lancaster, R. (2003). Relational embeddedness and learning: The case of bank loan managers and their clients. *Management Science, 49*(4), 383-99.
47. Van Den Hooff, B., & De Ridder, J. A. (2004). Knowledge sharing in context: The influence of organizational commitment, communication climate and CMC usage on knowledge sharing. *Journal of Knowledge Management, 8*(6), 117-30.
48. Voelpel, S. C., Eckhoff, R. A., & Forster, J. (2005). David against Goliath? Group size and bystander effects in virtual knowledge sharing. *Human Relations, 61*(2), 271-95.
49. Volberda, H. W. (1996). Toward the flexible form: How to remain vital in hypercompetitive environments. *Organization Science, 7*(4), 359-74.
50. Von Krogh, G. (2002). The communal resource and information systems. *Journal of Strategic Information Systems, 11*(2), 85-107.
51. West, M. A., & Altink, W. M. (1996). Innovation at work: Individual, group, organizational, and socio-historical perspectives. *European Journal of Work and Organizational Psychology 5*(1), 3-11.
52. Zhang, D. J., & Zhao, L. (2006). Knowledge management in organizations. *Journal of Database Management, 17*(1), 1-9.

Figure 1: Conceptual model

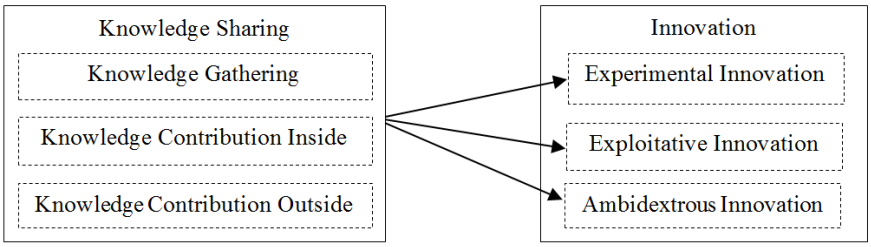

Table 1: Scale reliability test

Scale	Cronbach's Alpha Coefficient	Guttman Split-half Coefficient
Knowledge sharing	0.886	0.835
Exploitative innovation	0.823	0.789
Experimental innovation	0.815	0.775
Ambidextrous innovation	0.762	0.837

Table 2: Exploratory factor analysis of innovation scale

	Component	
Statement number of the scale	Experimental innovation	Exploitative innovation
Statement # 3	0.873	
Statement # 4	0.824	
Statement # 2	0.793	
Statement # 5	0.715	
Statement # 1	0.674	
Statement # 6		0.866
Statement # 4		0.814
Statement # 5		0.762
Statement # 2		0.717
Statement # 1		0.659
Statement # 3		0.565

Note: KMO=0.875, X^2=1324.22, df=55, p<0.01

Table 3: Exploratory factor analysis of knowledge sharing scale

	Component		
Statement number of the scale	Knowledge gathering	Knowledge con. inside	Knowledge con. outside
Statement # 3	0.841		
Statement # 4	0.806		
Statement # 1	0.788		
Statement # 2	0.684		
Statement # 5	0.624		
Statement # 5		0.833	
Statement # 4		0.817	
Statement # 6		0.765	
Statement # 2			0.796
Statement # 1			0.725
Statement # 3			0.701

Note: KMO=0.814, X^2=2428.34, df=55, p<0.01

Table 4: Correlation analysis

Variable	X	SD	1	2	3	4	5
1. E xploitative innovation	4.545	1.562	-				
2. E xperimental innovation	4.328	1.257	0.553**	-			
3. K nowledge gathering	5.324	1.753	0.513**	0.551**	-		
4. K nowledge contribution inside	4.158	1.210	0.431**	0.427**	0.223**	-	
5. K nowledge contribution outside	4.958	1.653	0.523**	0.215**	0.305**	0.452**	-

Note: **p<0.01

Table 5: Regressing Knowledge sharing on experimental innovation

Variable	β	*P*	R^2	F
Knowledge gathering	0.326	0.000		
Knowledge contribution inside	0.098	0.655		
Knowledge contribution outside	0.258	0.131		
Model			0.241	75.035**

Note: DV: experimental innovation, **p<0.01

Table 6: Regressing Knowledge sharing on exploitative innovation

Variable	β	*P*	R^2	F
Knowledge gathering	0.281	0.000		
Knowledge contribution inside	0.549	0.000		
Knowledge contribution outside	0.413	0.162		
Model			0.429	12.325**

Note: DV: exploitative innovation, **p<0.01

Table 7: Regressing Knowledge sharing on ambidextrous innovation

Variable	β	*P*	R^2	F
Knowledge gathering	0.420	0.002		
Knowledge contribution inside	0.105	0.023		
Knowledge contribution outside	0.245	0.071		
Model			0.327	35.055**

Note: DV: ambidextrous innovation, **p<0.01

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar