

The Links Between Management Capabilities, Innovation And Firm Performance: Evidence From Pharmaceutical Sector Of Pakistan

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Abstract

Purpose - Current research paper intends to analyze the effect of capabilities of management on firm's innovation and its performance in pharmaceutical sector of Pakistan. Capabilities of management let them to set the strategic goals and design the strategies to achieve these goals which lead the organization towards innovation and higher.

Design /Methodology / Approach - The population of current study is composed of pharmaceutical industries operating in Pakistan. The data was collected in May 2016 using the self-Administered Survey Questionnaire. Simple Random Sampling and Snow Ball sampling techniques were used for data collection. Out of 400, 330 questioners were found valid for further analysis. SPSS (20.00) and AMOS (21.00) have been used for data analysis.

Findings - It was confirmed from result of analysis that innovation of product and process is affected by capabilities of management. In addition, a positive relationship has been found between management capabilities and firm performance (Financial Performance, Market Performance). A good relationship has been found between human capabilities and innovation.

Practical Implications - The study has very strong managerial implication for pharmaceutical sector of Pakistan. The study has deepened knowledge about management capabilities which enable the firm to bring the innovation in its product and performance through managing the diversity

Originality Value - The number of studies regarding the relationship between management capabilities, innovation and firm performance are limited. Present study magnifies the influence of management capabilities on innovation performance and firm performance and helps to understand that how can organizations improve their performance through maximizing the innovation after hiring competent and skilled employees.

Key Variables Management Capabilities, Product Innovation, Process Innovation, Financial Performance, Market Performance, Pharmaceutical Sector

Research Type Empirical Research Paper

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1.0. INTRODUCTION

Currently, the firms are operating in a global environment comprised high competition, changing customer demands, technological innovations and uncertainty as well. The management capabilities of an organization are very crucial to understand the uncertainties of a dynamic environment and competing within the changing scenario (Kor & Mesko, 2013). The management capabilities are composed of human capabilities, technical capabilities and intellectual capabilities (Peterson & Van Fleet, 2004). The management capabilities are greater resources of achieving organizational success and competitive advantage (Carmeli & Azeroual, 2009). Regarding the management capabilities of a firm, there are few studies which investigate the all dimensions of management capabilities in relation with firm performance (Adner & Helfat, 2003). Mostly studies investigate the cognitive capabilities, knowledge capabilities and dynamic capabilities separately with respect to firm performance (Ruiz-Jiménez & del Mar Fuentes-Fuentes, 2016). The Upper Echelons Theory deals with composition of top management teams, decisions of top management teams, personal experiences of teams, demographic characteristics and values of teams (Hambrick, 2007; Hambrick & Mason, 1984).

Based on the forgoing and existing knowledge, the current study is aimed to contribute the new evidences to explain the relationship between management capabilities and firm performance. This study is going to extend the literature through addition of *Firm Performance* as dependent variable and investigating its relationship with management capabilities. In current case, the pharmaceutical industry has chosen for several reasons. First, pharmaceutical industry is primarily knowledge-driven industry. Innovation is key determinant to measure competitiveness of each firm in industry. Second, it is only pharmaceutical industry which is most influenced by its internal capabilities as compare to external factors. The firm is highly dependent on its managerial capabilities and research & development. Third, patent data derived from pharmaceutical industry is more accurate and reliable due to enforceability of the patents and the lack of secrecy between firms (Bierly & Chakrabarti, 1996).

The theoretical support for current study is drawn from *Upper Echelon Theory* and *Human Capital Theory*. The central premise of Upper Echelon Theory is that the attributes managers, their norms, values and personality traits are strongly associated with interpretation of various situations which they face in their daily job activities (Hambrick, 2007). This theory demonstrates that management capabilities are reflection of their knowledge, values,

personality traits as well as demographic characteristics. So demographics of managers can be used as proxies for their models of knowledge (Ruiz-Jiménez & del Mar Fuentes-Fuentes, 2016). The current study is going to make two major contributions to existing body of knowledge regarding the relationship between management capabilities, firm performance and innovation. First, the study exhibits that management capabilities are an important source to innovation (product, process) and creativity within the pharmaceutical sector. Thus, the current study is going to extend the results drawn by Nesta & Saviotti, (2005) and Ruiz-Jiménez & del Mar Fuentes-Fuentes, (2016) which shows that the influence of management capabilities is positive to organizational innovation. In the same line, the study conducted by Kearney, Harrington, & Kelliher, (2014) in tourist sector also proposed a positive relationship between innovation and management capabilities.

The second contribution is about addition of “firm performance” as dependent variable and then investigating its relationship with management capabilities in pharmaceutical sector. The current study extends the results proposed by Yeoh & Roth, (1999) that pharmaceutical firms with excellent management capabilities are successful in domestic and international competition on the base of their productivity and performance. An empirically study conducted by SubbaNarasimha, Ahmad, & Mallya, (2003) also proposed that managerial capabilities and technological knowledge are best sources to build competitive advantage and to increase the firm performance.

1.1. RESEARCH OBJECTIVES

- To investigate the relationships between management capabilities, product and process innovation.
- To measure the impact of management capabilities on Firm performance
- To find the innovation in product and processes within the pharmaceutical sectors.
- To enhance the understanding of literature and concepts in Area of Innovation and Diversity Management

2.0. REVIEW OF LITERATURE & HYPOTHESIS DEVELOPMENT

2.1. Relationship between Management Capabilities and Innovation

Regarding the role of management, Kor, (2006) argued that it is management of any organization which takes the firm general decisions, formulate the objectives and also designs the channels to achieve these objectives. Management is group of people having managerial

qualities and they are responsible for construction as well as destruction of organization. The proposition made by Bañón & Sánchez, (2009) regarding the role of management team is consistence to the previous findings. With the changing business scenario, innovation has become an important tool to measure the firm performance (Prajogo & Sohal, 2006). That's why the current study has proposed innovation, as a measuring element to measure the firm performance. To measure the innovation performance, the current study has focused on two dimensions of innovation, the product innovation and process innovation as proposed by Prajogo & Ahmed, (2006) and Prajogo & Sohal, (2006).

Regarding the relationship between management capabilities and innovation, Eisenhardt & Martin, (2000) states that capabilities of management let them to set the strategic goals and design the strategies to achieve these goals which lead the organization towards innovation and higher performance. The arguments by Hoskisson, Hitt, & Hill, (1993) and Prajogo & Ahmed, (2006) are symmetrical with previous arguments and they said that management of any organization needs capabilities to innovate and proper assignment and distribution of resources to various organizational activities. Innovation comes when the management of an organization uses the organizational assets rationally and according to the value of various activities. As like the product innovation, the role of management is also crucial to the success of process innovation. The basic requirement of process innovation is efficient use of resources and development synergy among the various production processes going on within the organization (Tidd, 2000). The resources are located in different parts of organization in different forms. These resources could be in the form of organizational capital, the human capital, the production technology as well as the entrepreneurial and innovative culture of organization. The innovation comes when the management of organization creates a synergy among these resources and brings them on one platform (Yadav, Prabhu, & Chandy, 2007).

In case of SMEs, the management capabilities which cause innovation are human capabilities, technical capabilities and conceptual capabilities possessed by the talented employees of organization. In hence, talent management is compulsory for both product and process innovation (Penrose, 1959). As like the product innovation, the process innovation also needs the close relationships with employees and transformation of knowledge from managerial levels to non-managerial employees. Through their human abilities, the top management can access the level of exchange of information among employees, their level of participation in problem solving and other organizational activities as well as the creative which is basic for both

product and process innovation (Sheremata, 2000). Kearney, et al., (2014) worked on the role of conceptual capabilities in promotion of innovation performance both in product and services of organization. The conceptual abilities depict the understanding of managers about the functions of firm and performance of firms. How the firm is performing, which department is more creative and participant, which department is low in performance and which problems may occur in future are some primary questions related with intellectual/conceptual capabilities of managers.

Yukl, (2002) defined the conceptual capabilities as the abilities which enable the managers to understand the underlying organizational problems, designing their solutions, anticipating the future outcomes as well as future strategies, identifying the alternatives for future problems and formulating the strategies to cope with these problems. He argued that presence of these capabilities differentiate the leaders from managers. Martin, (2011) extended the literature of Yukl (2002) regarding the relationship between leadership and necessary capabilities for leadership. He investigated the relationship between innovation and leadership theories. He found that these are innovation and entrepreneurial capabilities which differentiates the leaders from managers. Through adapting the conceptual and entrepreneurial capabilities, managers can also become good leaders.

Apart from this, there are several other authors which stated that development of new products or services is highly dependent on innovative and managerial capabilities. Through managerial capabilities, a manager can identify new opportunities and can design the strategies to exploit these opportunities (Barbero, Casillas, & Feldman, 2011). In case of SMEs, the managers have good understanding of their internal as well as external environment as they have very close relationships with their employees, sub-ordinates, peers and coworkers due to small size of organization. It let them to exploit new opportunities and development of new products and services regarding these opportunities. That's why, SMEs are found more innovative as compared to large organization (Burt, 1992; Kearney, et al., 2014).

In light of forgoing arguments, it has been proposed that management capabilities have positive relationships with both product and process innovation. Out of various dimensions of management capabilities, the technical abilities and conceptual abilities are found more participatory to product and process innovation. We therefore propose the following hypothesis.

H1a: There is a positive relationship between Management capabilities and product innovation.

H1b: There is a positive relationship between Management capabilities and process innovation.

2.2. Relationship between Management Capabilities and Firm Performance

OP is a marker which measures how well a venture accomplishes their targets. Organizational performance is result of all managerial, technological and conceptual tools implemented within the organization. A deep relationship is found between knowledge management capabilities and firm performance of organization (Huselid, Jackson, & Schuler, 1997). Morgan, Vorhies, & Mason, (2009) defined OP as far as how well an association finishes its destinations. The achievement of objectives is major goals of organization as well as the employees working within the organization. However, how efficiently and effectively an organization achieve its goals is a scale to measure the performance of organization.

Chen, Paulraj, & Lado, (2004) bring up that execution alludes to the quality and amount of individual or gathering work accomplishment. According to them, the quality of achievement, time to achieve the organizational goals and level of accomplishment are primary elements to measure the organizational performance. The conceptual capabilities of employees are very important to both improve and measure the firm performance of company. Kotabe, Srinivasan, & Aulakh, (2002) propose two approaches to survey OP and business sector execution. They argued that financial and non-financial performances are two critical measures to access the overall organizational performance. Non-Financial performance can be measured in terms of market performance, supply chain performance or distribution performance of organization. Zott, (2003) propose OP measures on four dimensions: relative profitability, Meditation, learning, lowan OP, return on investment, customer retention, and total sales growth. Kor, (2006) points out that performance indicator of an organization quantitatively represent the various organization- and market-related aspects of its products, services, resources, and productivity. In this study, we focus on financial performance and market performance, and adopt these two factors for the OP dimension. In light of previous literature, current study deals with two dimension of Firm performance.

- The Financial Performance
- Market performance

An analytical study conducted by Wisner, (2003) collected 49 research articles between 1990 and 2001 from various academic databases and online sources. By conducting content analysis, empirical findings on the relationship between Management capabilities and firm-level financial performance are summarized and classified. Performance drivers are identified from the literature to guide future management practices. After development of patterns and empirical studies, a positive relation is found between management capabilities and firm level financial performance. in the same line Zhao, Dröge, & Stank, (2001) argued that Firm capabilities are the key determinants of financial performance across both industries and firms. These capabilities embody those collective insights, knowledge and activities that directly translate a firm's vision and mission into the concrete action steps that produce financial results. Collectively, capabilities convert desired goals into realized outputs, such as financial performance and competitive (Zott, 2003).

Zaheer & Bell, (2005) also investigated the relationship between management capabilities and firm performance. They found that Capacities speak to firm-specific resources that require constant venture to keep up a firm's aggressiveness. Deciding unequivocally how and what sorts of abilities effect financial performance have demonstrated difficult. It has been believed that large portions of the issues can be followed to a couple center causes. The findings of study conducted by F. Wu, Yenyurt, Kim, & Cavusgil, (2006) are consistent with previous studies. They argued that Basic capacities can't be the reason for various levels of performance, thus we should look to the distinctions among the abilities of Winners, Losers, Tumblers, or Climbers for a clarification. Distinguishing these distinctions is difficult or outlandish without the consideration of different firm sorts, as in the exploration outline utilized here.

Regarding the relationship between learning capabilities and firm performance, Kearney, et al., (2014) argued that the possibility of the practical presence of a positive connection between learning capacity and business performance frequently relates the potential impacts to the monetary and financial achievement and, truth be told, some sort of markers are utilized to assess this achievement. In any case, while financial markers are basic to assessing performance, business performance is a mind boggling idea, more broad than the financial proportions normally connected. According to Zaheer & Bell, (2005), business individuals see well that reported financial performance is influenced by numerous elements after some time, for example, bookkeeping rehearses, the monetary environment, new item and administration discharges, and so forth. Thus, utilizing financial performance measures as just ward variable

for evaluating the potential impacts of learning ability is excessively prohibitive and might be uncertain.

Chen, et al., (2004) found the relationship between supply chain capabilities and firm performance of company. Past studies have measured hierarchical performance depending upon both financial furthermore, non-financial criteria. Despite the fact that financial performance is a definitive point of any business association, different pointers, for example, development performance Huselid, et al., (1997) market offer and other non-financial performance pointers may likewise be similarly imperative in assessing the effect of SCM practices on SME performance (Martin, 2011). The arguments made by Zhao, et al., (2001) are consistent with previous studies. They argued that the bookkeeping based financial measures are immediate pointers of a firm's financial conditions from alternate points of view. For instance, return on resources (ROA), return on value (ROE), and rate of return (ROI) are generally used to look at a firm's resource and capital use, while profit edge, expense of products sold (COGS), and monetary worth included (EVA) are regular measures of a firm's ability to make profits.

Morgan, et al., (2009) investigated the relationship between innovation and firm performance. The findings of his study show that innovation might be classified utilizing diverse criteria. OECD recognizes four sorts of advancements: Product developments include significant changes in the capacities of merchandise or administrations, both totally new products and administrations and significant upgrades to existing items are incorporated. According to Barbero, et al., (2011), Process developments speak to significant changes underway and conveyance techniques. Hierarchical developments allude to the execution of new authoritative techniques; these can be changes in business practices, in working environment association or in the firm's outside relations. Firm performance is a central marvel in business ponders. Be that as it may, it is additionally a mind boggling and multidimensional marvel. Performance can be portrayed as the firm's capacity to make satisfactory results and activities. In light of above literature, we proposed following hypothesis.

H2a: There is a positive relationship between Management capabilities and financial performance.

H2b: There is a positive relationship between management capabilities and market performance.

3.0. THEORETICAL FRAMEWORK

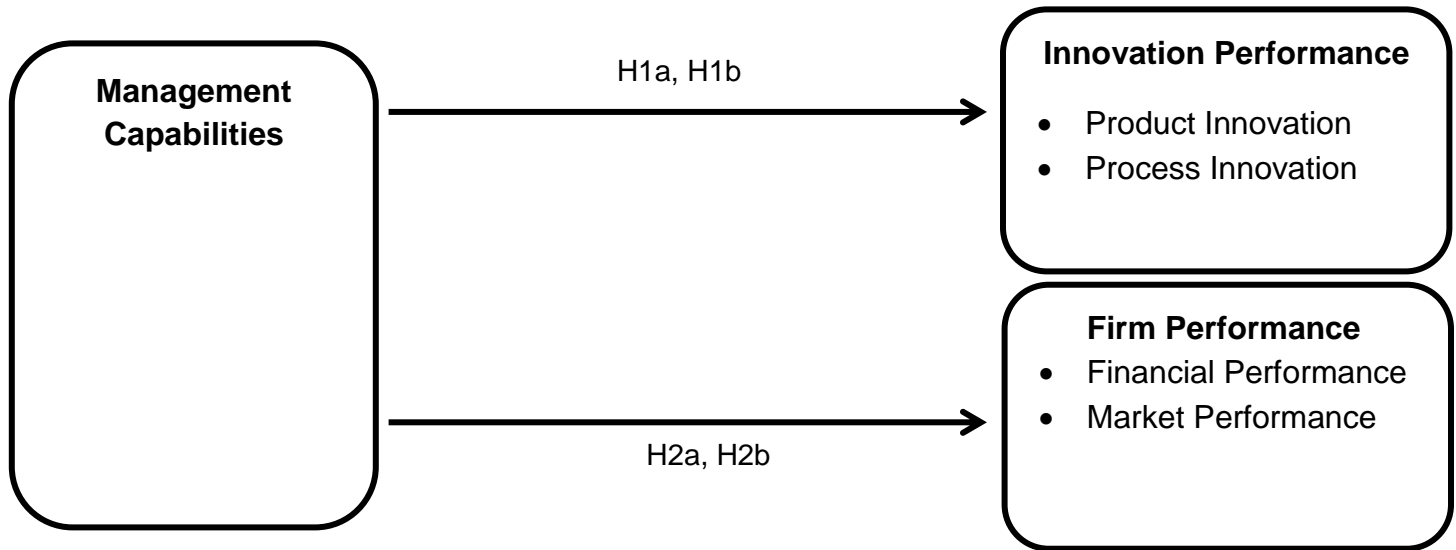


Fig. 01: Theoretical Framework

As evident from the model, the following four hypothesis statements can be suggested:

H1a: There is a positive relationship between Management capabilities and product innovation.

H1b: There is a positive relationship between Management capabilities and process innovation.

H2a: There is a positive relationship between Management capabilities and financial performance.

H2b: There is a positive relationship between management capabilities and market performance.

4.0. RESEARCH METHODOLOGY

4.1. Sample of Study

The population of current study is composed of pharmaceutical industries operating in Pakistan. The Pharmaceutical sector has been selected for current study as it is most innovative sector and very crucial to the economic performance of country. These pharmaceutical industries are operating in highly technological sector where management capabilities and innovation are very important for the improvement of firm performance. The data about pharmaceutical industries was taken from database of PPMA Pakistan Pharmaceutical

Manufacturers Association for May 2016. According to PPMA database, 600 pharmaceutical manufacturing units are operating in the country which are highly technological intensive and innovation oriented.

The data was collected in May 2016 using the self-Administered Survey Questionnaire. Simple Random Sampling and Snow Ball sampling technique was used for data collection. Total 400 Questionnaires were distributed randomly among the managers of pharmaceutical industries as the managers have holistic knowledge of their organization. Total 341 Questionnaires were returned. There were 11 questionnaires which were not properly answered by the managers. These questionnaires were discarded. Finally, we got 330 valid questionnaires to run the analysis. Total response rate was 82.5% which was good enough to obtain excellent results.

4.2. Descriptive Statistics

Regarding the descriptive statistics, it was found that age of mostly firms were lying between 11 to 15 years old (35%). Only 22.7% firms were more than 15 years old, 25.2% were 05 to 10 years old, while only 12% were under 05 years old. Regarding the firm size, mostly firms (42.4%) were containing employees from 101-200. Only 14.2% were having employees under 100, 25.2% were having employees from 201 to 300 and only 16.7% firms were having employees more than 300. Regarding the gender diversity, male managers were more in numbers (172, 52.1%) as compared to female managers (158, 47.9%). In case of age, majority of managers (51.25) were lying in age group of 30 to 39 years old. 50.6% managers were having a qualification of BA/MA/MSc. 51.1% managers were having the experience of 01 to 05 years while 58.5% managers were having the experience of 01 years on their current position.

4.3. Variable Measurements

Management Capabilities is independent variable in current study and it was measured through adapting the 12 items scale from Carmeli and Tishler, (2009). This item measures the degree to which an organization attracts, trains and retains the competent managers for organization. To record the response, Five-Point Likert Scale was used where 05 were denoting Strongly Agree and 01 was denoting Strongly Disagree.

Innovation Performance is first dependent variable in current study and it was measured through adapting Eight Items from Prajogo and Sohal (2006), where first four items were

measuring the product innovation while second four items were measuring the process innovation. These two dimensions of Innovation performance were selected as they mostly occur in pharmaceutical and medical industries all over the world. The current scale measure the innovation performance of organization in relative to its competitor organization. Five-Point Likert scale was used to respond where 05 was used for “Much Greater Relative to Your Main Competitor” and 01 was used for “Less Greater Relative to Your Main Competitor”

Firm Performance is second independent variable in current study and it has been measured through adapting the 12 items from Morgan and Piercy (1998), where first six items measure the financial performance of company and next six items measure the market performance of company. It was subjective measurement of firm performance and responses were recorded on Five-Point Likert Scale where 05 were used for Excellent and 02 were used for Poor.

4.4. Control Variables

In current study, Size of the firm, age of the firm, gender, age, years in position, education of firm's manager and experience of managers has used as the controlled variables. There are several prior studies which have used the firm age and firm size as controlled variable as they can affect both firm performance and innovation performance of the company. In the same line, the Manger's gender, age, education level and years of experience are also used as controlled variable in previous studies as they have impact on the firm performance. For managers' gender, female category was coded as 0 while male category was coded as 01.

5.0. ANALYSIS AND DISCUSSION

The measurement scales for all variables have been validated in prior studies. However for the psychological validity of instruments, we run the CFA analysis using AMOS (version 21) was used. The data sheet was created through the help of SPSS (version 20). The normality of data was checked through SPSS and data was found normal in appropriate ranges as shown in the table. For the analysis of model, the AMOS has been used as shown in the Table 03 in appendix. The factors loading table shows the cofactor value for each item. There are total 32 items in whole questionnaire.

For the analysis of the model, Amos (version 21) was used. It is shown in Fig. 02. From figure, it is clear that there is one independent variable (Management Capabilities) and two

dependent variable (Innovation performance, firm performance). There are further two dimensions of innovation translated as product innovation and process innovation. In the same line, there are further two dimensions of firm performance translated as financial performance and market performance. Every dimension is measured separately and a co-relation analysis was made to measure the relationship between dependent and independent variable.

For Management capabilities, factor loading of each item ranges from 0.20 – 0.60 which comes under good range. In case of Product innovation, factor loading ranges from 0.4 – 0.5. For Process innovation, this range is from 0.1 to 0.5. In case of financial performance, this range is lying between 0.1-0.5. Finally, the range of factor loading for market performance is ranging from 0.2 to 0.4. All values are lying between effective and valid range. The table for cofactor analysis of all items is nominated as Table 03 in Appendix.

For the model fitness, few values were observed which are mentioned in Table 01. It describes that CMIN/DF is 4.130 which shows that model is fit because it is lower than 5.00. Other values are P=0.000; GFI (Goodness of fit index) =0.930; AGFI=0.923; NFI=0.935; IFI=0.943; CFI (Comparative fit index) =0.970; TLI=0.962; and RMSEA (Root mean square error of approximation) =0.05. All values are in range which supports the model fitness.

Table 01: Values for Model Fitness

CMIN/DF	P	GFI	AGFI	NFI	IFI	CFI	TLI	RMSEA
4.130	0.000	0.930	0.923	0.935	0.943	0.970	0.962	0.05

The results in Figure 02 show that Management capabilities have positive impact on product innovation with a value of 0.413. In the same line, the Management capabilities also have positive impact on process innovation with a significant value of 0.006. A positive relationship has been found between financial performance of organization and management capabilities with value of 0.124. Very similarly, a positive relationship has been found between market performance and management capabilities with a positive value of 0.067. All values are positive and they result in acceptance of all hypothesis. These results can be understood from Figure 02 in appendix.

The path between Management capabilities and Product innovation is found significant positive ($\beta=0.413$, $P = ***$). It results in acceptance of H1a. Regarding the values and paths analysis, H1b is also accepted. Like innovation, the path between management capabilities, financial performance and firm performance are also found positively significant. It results in acceptance of H2a and H2b. The detail of all significant paths along with the detail that whether hypothesis relating to them are accepted or not are given in Table 02.

Table 02: Details Of Significant And Insignificant Paths

Paths	Standard Reg.	P	Significance Level	Hypothesis Status
PDI – MC	0.413	***	Significant	H1a (Accepted)
PSI– MC	0.006	***	Significant	H1b (Accepted)
FNP – MC	0.124	***	Significant	H2a (Accepted)
MTP – MC	0.067	***	Significant	H2b (Accepted)

Note: MC = Management Capabilities; PDI = Product Innovation; PSI = Process Innovation; FNP = Financial Performance; MTP= Market Performance; . ** $P < .001$ and * $P < .05$

6.0. CONCLUSION AND RECOMMENDATIONS

The current study has deepened my knowledge about management capabilities which enable the firm to bring the innovation in its product and performance through managing the diversity. The overall effect of all these variables result in improvement of organizational performance. The current study has focused on management capabilities as the academic literature argues that a firm with talented and innovative managers has improved performance, create the competitive advantage and have greater other benefits. After analysis of literature, it has been found that management capabilities have positive relationship with both product and process innovation. In hence, it is true that a firm with capable managers has more tendencies to innovate both in case of product and process innovation. Empirically, all hypothesis are accepted regarding the positive relationship between management capabilities and innovation performance.

Second contribution of current study is about the relationship between management capabilities and firm performance. After the in-depth analysis of available academic literature, it

has been found that a firm having talented, committed and capable employees has improved performance and sustainable competitive advantage. The empirical analysis shows that both hypothesis about the relationship between management capabilities and firm performances are accepted. The study takes supports from two theories, *the Upper Echelon theory, and human capital theory*. The results of current study are consistent with studies conducted by Nielsen & Nielsen, (2013), Kor & Mesko, (2013) and Ruiz-Jiménez & del Mar Fuentes-Fuentes, (2016). In hence, the current study also validates the findings of these studies and makes them more valid and reliable.

7.0. FUTURE RESEARCH DIRECTIONS

For future research directions, the relationship between dependent and independent variables of current study can be investigated through adding the organizational culture or organizational structure as moderating or mediating variable. Furthermore, the implications of current study are limited to only pharmaceutical sector. This study can be conducted for any others sector including banking, telecom or manufacturing sectors.

REFERENCES

1. Adner, R., & Helfat, C. E. (2003). Corporate effects and dynamic managerial capabilities. *Strategic Management Journal*, 24(10), 1011-1025.
2. Allen, R. S., Dawson, G., Wheatley, K., & White, C. S. (2007). Perceived diversity and organizational performance. *Employee Relations*, 30(1), 20-33.
3. Bandura, A., & Bussey, K. (2004). On broadening the cognitive, motivational, and sociostructural scope of theorizing about gender development and functioning: comment on Martin, Ruble, and Szkrybalo (2002).
4. Bañón, A. R., & Sánchez, A. A. (2009). Recursos Críticos y Estrategia en la Pyme industrial. *Información Comercial Española, ICE: Revista de economía*(846), 193-212.
5. Barbero, J. L., Casillas, J. C., & Feldman, H. D. (2011). Managerial capabilities and paths to growth as determinants of high-growth small and medium-sized enterprises. *International Small Business Journal*, 29(6), 671-694.
6. Becker, G. S. (1993). *A Theoretical and Empirical Analysis, with Special Reference to Education*; 3rd edition: Chicago University Press.
7. Becker, G. S. (2009). *Human capital: A theoretical and empirical analysis, with special reference to education*: University of Chicago Press.

8. Bierly, P., & Chakrabarti, A. (1996). Generic knowledge strategies in the US pharmaceutical industry. *Strategic Management Journal*, 17(S2), 123-135.
9. Burt, R. (1992). *Structural Holes: The Social Structure of Competition*, Harvard Univ. Press, Cambridge.
10. Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of business ethics*, 83(3), 435-451.
11. Capaldo, G., & Fontes, M. (2001). Support for graduate entrepreneurs in new technology-based firms: An exploratory study from Southern Europe. *Enterprise and Innovation Management Studies*, 2(1), 65-78.
12. Cardinal, L. B. (2001). Technological innovation in the pharmaceutical industry: The use of organizational control in managing research and development. *Organization science*, 12(1), 19-36.
13. Carmeli, A., & Azeroual, B. (2009). How relational capital and knowledge combination capability enhance the performance of work units in a high technology industry. *Strategic Entrepreneurship Journal*, 3(1), 85-103.
14. Carmeli, A., & Tishler, A. (2004). The relationships between intangible organizational elements and organizational performance. *Strategic Management Journal*, 25(13), 1257-1278.
15. Chen, I. J., Paulraj, A., & Lado, A. A. (2004). Strategic purchasing, supply management, and firm performance. *Journal of operations management*, 22(5), 505-523.
16. Díaz-García, C., González-Moreno, A., & Jose Sáez-Martínez, F. (2013). Gender diversity within R&D teams: Its impact on radicalness of innovation. *Innovation*, 15(2), 149-160.
17. Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, 21(10-11), 1105-1121.
18. Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic leadership: Theory and research on executives, top management teams, and boards*: Oxford University Press, USA.
19. Gharakhani, D., & Mousakhani, M. (2012). Knowledge management capabilities and SMEs' organizational performance. *Journal of Chinese Entrepreneurship*, 4(1), 35-49.
20. Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, 9(2), 193-206.
21. Hoonsoon, D., & Ruenrom, G. (2012). The impact of organizational capabilities on the development of radical and incremental product innovation and product innovation performance. *Journal of Managerial Issues*, 250-276.
22. Hoskisson, R. E., Hitt, M. A., & Hill, C. W. (1993). Managerial incentives and investment in R&D in large multiproduct firms. *Organization science*, 4(2), 325-341.
23. Huselid, M. A., Jackson, S. E., & Schuler, R. S. (1997). Technical and strategic human resources management effectiveness as determinants of firm performance. *Academy of management journal*, 40(1), 171-188.

24. Jack, C., Anderson, D., & Connolly, N. (2014). Innovation and skills: implications for the agri-food sector. *Education+ Training*, 56(4), 271-286.
25. Jerez-Gomez, P., Céspedes-Lorente, J., & Valle-Cabrera, R. (2005). Organizational learning capability: a proposal of measurement. *Journal of business research*, 58(6), 715-725.
26. Kearney, A., Harrington, D., & Kelliher, F. (2014). Exploiting managerial capability for innovation in a micro-firm context: New and emerging perspectives within the Irish hotel industry. *European Journal of Training and Development*, 38(1-2), 95-117.
27. Kor, Y. Y., & Mesko, A. (2013). Dynamic managerial capabilities: Configuration and orchestration of top executives' capabilities and the firm's dominant logic. *Strategic Management Journal*, 34(2), 233-244.
28. Kotabe, M., Srinivasan, S. S., & Aulakh, P. S. (2002). Multinationality and firm performance: The moderating role of R&D and marketing capabilities. *Journal of International Business Studies*, 33(1), 79-97.
29. Laible, M.-C. (2013). *Gender diversity in top management and firm performance: An analysis with the IAB-Establishment panel*. Paper presented at the CAED Conference Paper, Atlanta: Institute for Employment Research.
30. Lu, C.-M., Chen, S.-J., Huang, P.-C., & Chien, J.-C. (2015). Effect of diversity on human resource management and organizational performance. *Journal of Business Research*, 68(4), 857-861.
31. Markides, C. C., & Williamson, P. J. (1996). Corporate diversification and organizational structure: A resource-based view. *Academy of management journal*, 39(2), 340-367.
32. Martin, J. A. (2011). Dynamic managerial capabilities and the multibusiness team: The role of episodic teams in executive leadership groups. *Organization Science*, 22(1), 118-140.
33. Morgan, N. A., Vorhies, D. W., & Mason, C. H. (2009). Market orientation, marketing capabilities, and firm performance. *Strategic Management Journal*, 30(8), 909-920.
34. Munos, B. (2009). Lessons from 60 years of pharmaceutical innovation. *Nature Reviews Drug Discovery*, 8(12), 959-968.
35. Nesta, L., & Saviotti, P. P. (2005). Coherence of the knowledge base and the firm's innovative performance: evidence from the us pharmaceutical industry*. *The Journal of Industrial Economics*, 53(1), 123-142.
36. Nielsen, B. B., & Nielsen, S. (2013). Top management team nationality diversity and firm performance: A multilevel study. *Strategic Management Journal*, 34(3), 373-382.
37. Prajogo, D. I., & Ahmed, P. K. (2006). Relationships between innovation stimulus, innovation capacity, and innovation performance. *R&D Management*, 36(5), 499-515.
38. Prajogo, D. I., & Sohal, A. S. (2006). The integration of TQM and technology/R&D management in determining quality and innovation performance. *Omega*, 34(3), 296-312.
39. Penrose, E. T. (1959). The theory of the growth of the firm. *New York: Sharpe*.

40. Peterson, T. O., & Van Fleet, D. D. (2004). The ongoing legacy of RL Katz: An updated typology of management skills. *Management decision*, 42(10), 1297-1308.
41. Rai, A., Patnayakuni, R., & Seth, N. (2006). Firm performance impacts of digitally enabled supply chain integration capabilities. *MIS quarterly*, 225-246.
42. Ruiz-Jiménez, J. M., & del Mar Fuentes-Fuentes, M. (2015). Management capabilities, innovation, and gender diversity in the top management team: An empirical analysis in technology-based SMEs. *BRQ Business Research Quarterly*.
43. Stevens, M. (1994). A theoretical model of on-the-job training with imperfect competition. *Oxford economic papers*, 537-562.
44. SubbaNarasimha, P., Ahmad, S., & Mallya, S. N. (2003). Technological knowledge and firm performance of pharmaceutical firms. *Journal of Intellectual Capital*, 4(1), 20-33.
45. Sheremata, W. A. (2000). Centrifugal and centripetal forces in radical new product development under time pressure. *Academy of management review*, 25(2), 389-408.
46. Teixeira, A. (2002). On the link between human capital and firm performance. *A theoretical and*.
47. Tidd, J. (2000). From Knowledge Management to Strategic Competencies, Series on Technology Management, Vol. 3: Imperial College Press, London.
48. Wisner, J. D. (2003). A structural equation model of supply chain management strategies and firm performance. *Journal of Business Logistics*, 24(1), 1-26.
49. Wu, F., Yenyurt, S., Kim, D., & Cavusgil, S. T. (2006). The impact of information technology on supply chain capabilities and firm performance: A resource-based view. *Industrial Marketing Management*, 35(4), 493-504.
50. Wu, S.-H., Lin, L.-Y., & Hsu, M.-Y. (2007). Intellectual capital, dynamic capabilities and innovative performance of organisations. *International Journal of Technology Management*, 39(3-4), 279-296.
51. Yadav, M. S., Prabhu, J. C., & Chandy, R. K. (2007). Managing the future: CEO attention and innovation outcomes. *Journal of Marketing*, 71(4), 84-101.
52. Yeoh, P.-L., & Roth, K. (1999). An empirical analysis of sustained advantage in the US pharmaceutical industry: Impact of firm resources and capabilities. *Strategic Management Journal*, 637-653.
53. Yukl, G. A. (2002). Leadership in organizations.
54. Zaheer, A., & Bell, G. G. (2005). Benefiting from network position: firm capabilities, structural holes, and performance. *Strategic Management Journal*, 26(9), 809-825.
55. Zhao, M., Dröge, C., & Stank, T. P. (2001). The effects of logistics capabilities on firm performance: customer-focused versus information-focused capabilities. *Journal of Business Logistics*, 22(2), 91-107.

56. Zott, C. (2003). Dynamic capabilities and the emergence of intraindustry differential firm performance: insights from a simulation study. *Strategic Management Journal*, 24(2), 97-125.

APPENDICES

Table 03: Factor Loading Of Each Variable Item Wise (Source: AMOS 21.00 Worksheets)

Variable	Item Name	Factor Loading	Variable	Item Name	Factor Loading
Management Capabilities	MC1	0.688	Process Innovation	PSI1	0.526
	MC2	0.747		PSI2	0.463
	MC3	0.542		PSI3	0.400
	MC4	0.378		PSI4	0.109
	MC5	0.410	Financial Performance	FNP1	0.593
	MC6	0.532		FNP2	0.575
	MC7	0.445		FNP3	0.394
	MC8	0.360		FNP4	0.185
	MC9	0.217		FNP5	0.195
	MC10	0.293		FNP6	0.471
	MC11	0.314	Market Performance	MTP1	0.489
	MC12	0.392		MTP2	0.427
Product Innovation	PDI1	0.548		MTP3	0.349
	PDI2	0.529		MTP4	0.226
	PDI3	0.552		MTP5	0.243
	PDI4	0.411		MTP6	0.304

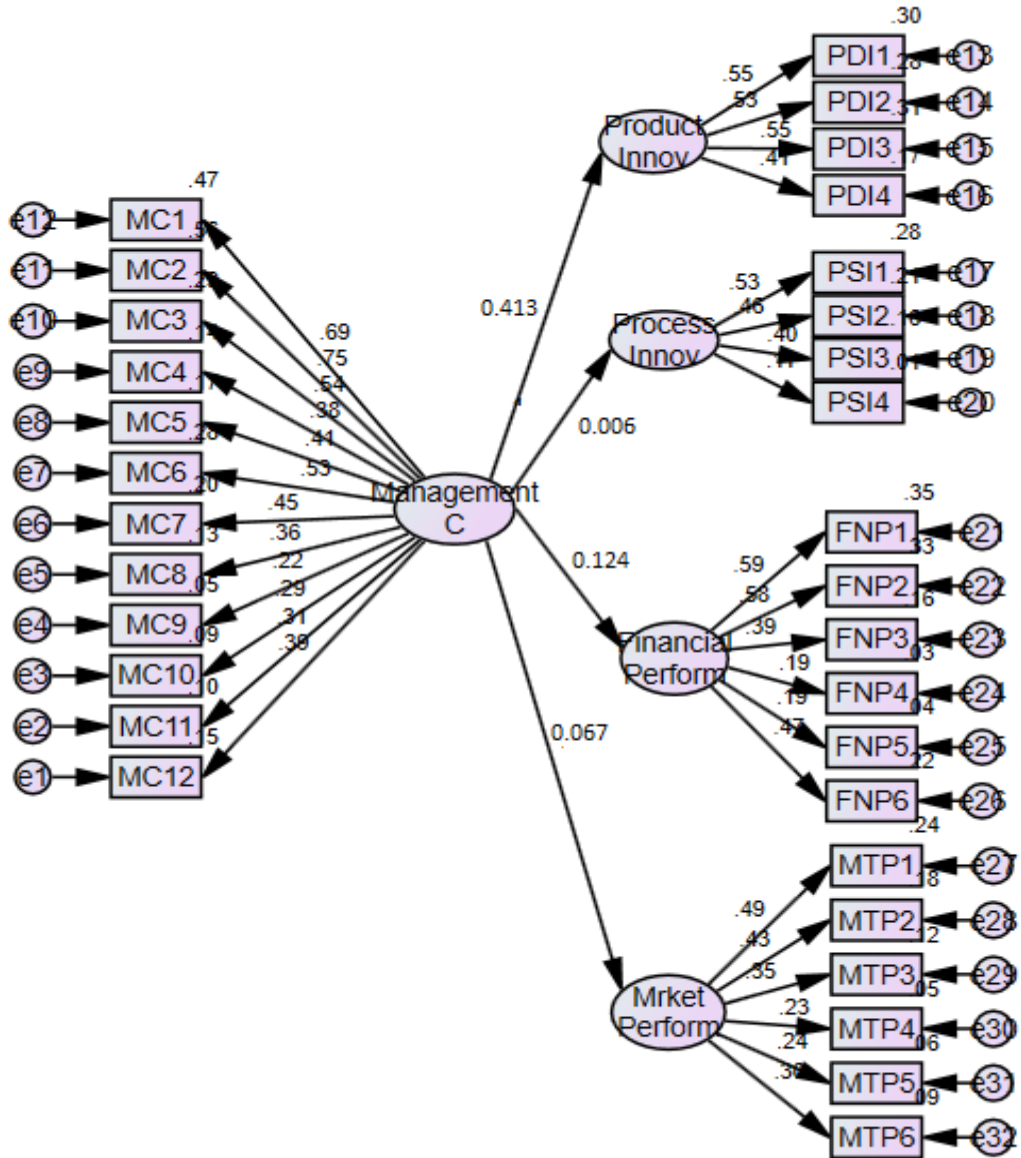


Figure 02: AMOS Co-Relational Analysis (Source: AMOS 21.00 Worksheets)