Journal of Social Sciences (COES&RJ-JSS) ISSN (E): 2305-9249 ISSN (P): 2305-9494

Publisher: Centre of Excellence for Scientific & Research Journalism, COES&RJ LLC

Online Publication Date: 1st October 2019
Online Issue: Volume 8, Number 4, October 2019
https://doi.org/10.25255/jss.2019.8.4.641.655



The Influence of Strategic Innovation Management (SIM) Practices on the Industrial Sector Financial Performance Muna Gharibeh

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Abstract:

The present study sought to examine the impact of the strategic innovation management (SIM) practices on the organizational financial performance among the industrial sector in Jordan. However, the study sample is (92) respondent from management of four Jordanian industrial firms, which is listed in Amman stock Exchange. The determinants of SIM practices are HR innovation, product innovation, firm structure innovation and research and development innovation. However, the financial performance includes net assets, return on assets (ROA), leverage and profits. The statistical package for social sciences (SPSS) is used for data analysis. The study found that SIM practices have positive impact on enhancing the firm's financial performance; increasing the return on assets (ROA) and the profits, and decrease the leverage. This result presented by coefficient of correlation (0.78) which refers to a positive relationship between SIM and financial performance. The research recommends further research on products innovation; due its effectiveness in generating new products and enhances the firm's competitive advantage and performance.

Keywords:

Return on Assets (ROA), Financial Performance, Strategic Innovation Management (SIM) Practices

Citation:

Gharibeh, Muna (2019); The Influence of Strategic Innovation Management (SIM) Practices on the Industrial Sector Financial Performance; Journal of Social

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Sciences (COES&RJ-JSS), Vol.8, No.4, pp:641-655; https://doi.org/10.25255/jss.2019.8.4.641.655.

Introduction

The concept Innovation refers to the new and creative policy, plan or program, products, management process, production process or a new services produced in a specific firm. On the other hand, (Bessant; Tidd, 2007) defines the concept of innovation as creating or developing a new products, design, management and commercial practices; to be invested in a process or equipment for the first time. However, innovation is the main driver for developing framework, and one of the core competencies of any organization in the present competitive market. However, for creating innovative strategies that result in growth, new products and services, and new business models the firm need to focus on value creation for its customers in addition to the stakeholders (Kaplan, 2007). Moreover, the innovation strategy is a plan adopted by a company; in order to enhance the advancements in products or services, and most of the times it is done through investing part of the revenue in conducting researches to enhance the products and services and development activities (Al-Battaineh, 2018). Furthermore, strategic innovation is the essential key to gain a prominent position for the firm among the competitive environment, which lead to gaining higher performance and profits. Therefore, it is very important to understand the concerned strategic innovation practices (Kalay; Lynn, 2015). The strategic innovation is an important part of management for the companies, which search for the competitive advantage. However, SIM practices play a vital role in developing the products and services. Hence, for the strategic innovation it is required to develop a business environment, which supports the required strategic innovation; needs to make changes in organizational culture and systems (Harold Schroeder, 2013), also provide firms a strategic orientation to overcome the problems they encounter to achieve the competitive advantage sustainable (Kuratko et al., 2015).On the other hand, to formulate an effective innovation strategy, a company must know all its customers' needs, which needs are unmet, and what segments of customers exist with varied unmet needs. Moreover, the effective innovation strategy should be inspiring and add something unique to the product or service being developed (Al-Battaineh, 2018). In the study of (Wheelen, 2006) the researchers consider the strategic management as a set of managerial decisions and actions, which determines the firm's performance. However, as stated by Teece (2007), the strategic innovations include the emergent of initiative taken by senior management in order to utilize the organizational resources leading to enhance performance, while mitigating the pressures of the external environment. However, in the study of (Kalay; Lynn, 2015) entitled "The impact of SIM practices on firm innovation performance" the researchers found that the strategic innovation, organizational structure and innovation culture

increase significantly the performance. In the study of (Schmenner, 1995), the study suggested that among the industrial sectors; whereby there is a high level of competition, there is a continuous need to think and act strategically about the management practices , and this what is represented precisely among the industrial sector in recent years.

All over the world, the industrial sectors have developed their strategies; to promote innovation in delivering the products and service, enhance the capability of the provided services, policy development, regulatory approaches, and use of technology. However, the industrial sector innovation is looking to find new instruments to gain the required goals; by helping the governments to create the policies and strategies, which are more broadly based, inclusive and meet the citizens' needs. (OECD, 2017). The present study aims at investigating the influence of the SIM practices on the performance of the industrial sector in Jordanian.

1. Theoretical Background

2.1 Strategic Innovation Management (SIM) Practices

In the management science, the term strategy refers to a comprehensive and integrated plan, which designed in order to ensure the achievement of the basic objectives of the organization. However, strategic innovation refers to the radical innovation which results a vital change among the business activities; which represents important factors for the organization performance (Yang, 2014). The strategic innovation overcomes the classical view of innovation management; it is providing superior services and products to the customers; by the firms' business processes (Seybold, 2014), as well refers to the gaining of a competitive advantage through employing varied strategies more innovative that their competence (Afuah, 2009). Walker (2004) stated that the strategic innovations has a vital role in the organization growth and profitability, and develop the marketplace that reflexes the competitive advantage and the outstanding performance (Schlegelmilch; Kraus (2003). Strategic innovation has a vital role in enhancing the organization performance, and this role represented in the profitability and market share (Palmer and Kaplan, 2007). Moreover, researchers had studied and measured the innovation from various perspectives and dimensions. However, they have measured the innovation based on efficacy & efficiency. Hence, efficiency means to the effort occurred to achieve the level of success. Furthermore, the strategic innovation embedded in their corporate strategy. Furthermore, strategic innovation requires changing or bringing new ideas, services and production processes (Lundvall, 2007).

In one hand, SIM refers to building the requirements among the organization; to motivate the employees' creativity. However, SIM indicate the business

processes, management technology, and the relationships between the organization employees. However, SIM encourages the innovations depending on the available resources (human resources, technology and equipment) and the organization ability to manage the available resources (Kalay; Lynn, 2015). On the other hand, the human resources (HR) innovation, training and development (TD), organization structure (OS) and the products innovation are the determinant of SIM (Terziovski, 2010). The spent amount on the research and development (R&D) has a significant role in enhancing the organization innovation level; leading to the products innovation and improved performance (Frankelius, 2009).

However, (Chijioke *et al.*, 2018) conducted a study to identify the relation between the strategic innovation and performance, and found that SIM practices are necessary to improve the organization performance. On other hand, in the study of (Odhiambo, 2008) about the strategic innovation management, the research declared that with the showing up of globalization, the firms obliged to improve their ways of doing business in order to maintain or improve its performance. In the study of (Kalay; Lynn, 2015), the researchers investigated the SIM impact on the organizational performance of industrial sector and public universities sequentially, these studies concluded to a positive connection between SIM practices and the performance. Furthermore, the study declared that the SIM practices among the industrial sectors are measured based on two main dimensions: product innovation and administrative innovation.

2.2. Performance

The Firms' performance refers to the ability to create new resources daily over a specific duration. Hence, among the corporate performance, the performance could be measured based on the financial achievements. On the other hand, profitability is the ideal measure to identify the performance of the firms; because profitability is the indicator and sign for the firms' operations efficiency and effectiveness (Bora, 2008). On the other hand, the firms' performance could be measured by both measures; financial and non-financial. However, the financial refers to the net assets, return on assets (ROA), leverage and profits. Hence, the non-financial measures include the number of employees, customer's satisfaction and the market shares (Zahra, 1993). In the study of (Matar; Eneizan, 2018) which was designed to identify the detriments of the financial performance, the research revealed that the financial performance could be measured through the firm size, return on assets (ROA), leverage, profitability and revenues. Richard et al. (2008) stated that the organization performance is divided into three main areas: Financial performance (Profits, ROA, Net assets and Leverage), Market performance (market shares and sales) and Shareholders income (distribution of the profits). However, leverage refers to the amount of

firm's debt, which used to finance its assets. However, ROA= Return/Assets and Leverage= Assets/ Capital (Hampus; Martin, 2017).

Research Problem

It was necessary to study and proceed in this regard to establish effective rules, principles and procedures related to management policy and planning, which leads to clarity of vision in determining the financial performance and requirements that the Jordanian industrial companies must adhere to; in order to develop the SIM practices, which come back positively to the economy. The identification of means of developing and organizing the SIM practices leads to the disclosure of the volume of returns generated by the activities, as well as increasing the company performance. The researcher focused on the problem by studying the industrial sector over the world such as the study which conducted in Kenya, by (Moramati Foundation, 2011) in a study entitled "the Kenya construction industry", the study found many problems among the management practices and concluded to applying the SIM practices in order to enhance the company performance. On the other hand, (Battaineh, 2018) studied the management practices in the industrial sector in Jordan. The researcher relies upon the previous and official researchers in order to examine the development in the management practices and the relationship of this development with the performance. The researcher found a gap in the access of these strategies to the quality and methodology of applying the designed strategies. In this sense, the purpose of the study is to identify the impact of applying the strategic innovation practices, which generate new policies and planning on the development of the performance of the industrial sector in Jordan.

2. Research Questions

The purpose of this study can be achieved by answering the following questions:

- ➤ Main question: What is the impact of applying the SIM practices on the development of the performance in the industrial sector in Jordan?
- A number of the following sub-questions arise from this question:
- A. What is the relationship between SIM practices and the profits of the industrial sector in Jordan?
- B. What is the relationship between SIM practices and the leverage of the industrial sector in Jordan?
- C. What is the relationship between SIM practices and the net assets of the industrial sector in Jordan?
- D. What is the relationship between SIM practices and the ROA of the industrial sector in Jordan?

3. Research Hypothesis The main hypothesis:

H0: There is no statistically significant effect at the level of $(0.05 = \alpha)$ for SIM practices (Process innovation, products innovation and administrative innovation) to maximize the performance (Net assets, return on assets (ROA), leverage and profits).

A number of the following hypotheses emerge from this main hypothesis:

- H1. There is no statistically significant effect at the = 0.05 level of SIM practices to maximize the industrial companies Leverage.
- H2. There is no statistically significant effect at the = 0.05 level of SIM practices to maximize the industrial companies net assets.
- H3. There is no statistically significant effect at the = 0.05 level of SIM practices to maximize the industrial companies profits.
- H4. There is no statistically significant effect at the = 0.05 level of SIM practices to maximize the industrial companies ROA.

4. Research Methodology

5.1. Research Model

To achieve the purpose of this study and to reach its specific objectives in determining the effect of the independent variable on the dependent variable, the researcher developed a study model. Figure (1) shows the model of the study and its dimensions, and the relation of these variables.

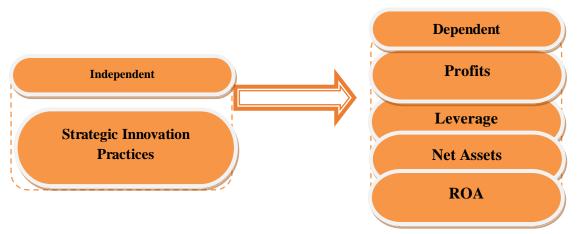


Figure (1) The Study Model: the dependent and independent variables

5.2. Data Collection

The researcher uses the descriptive cross-sectional method in conducting the study of the implementation of the SIM practice and its impact on the financial performance development in the industrial sector during the period 2014 -2017. The study designed to measure the effectiveness of applying the SIM practices on the advancement of performance and creating new products among the industrial sector in Jordan. Therefore, the test will be applied on (4) industrial

firms; who chosen randomly to participate in the study. On the other hand, the researcher designed a questionnaire to collect the data from the HR departments, and distributed to (92) respondents; to examine the application of the strategic innovation practices. After that, the researcher collected the annual financial statements of (4) Jordanian industrial firms from Amman stock share website; to find the firm's financial performance, to review the advancement of the performance and innovation of the products and services.

5.3. Data Analysis

The use of a Likert scale allows analyzing the quantitative data from the qualitative data; leading to simplifying the evaluation of the obtained data accuracy (Creswell, 2003). However, the researcher used three points Likert scale; in order to collect the qualitative data and make the quantitative data analysis. The researcher analyzed the data through the statistical package for social sciences (SPSS). Multiple regression analysis was used to determine the relationship between the dependent and independent variables. Furthermore, the financial performance is measured through the leverage, ROA, net assets, and profits. Whereby, ROA= Return/Assets. Leverage= Assets on Capital.

6. Findings and Discussion

The data was collected from the HR departments and the annual financial statements during the period 2014 -2017. However, the collected data was analyzed in line with the study objectives, which aims to investigate the impact of the SIM practices on the financial performance of four industrial firms in Jordan. According to (Terziovski, 2010), SIM practices could be measured through human resources (HR) innovation, training and development (TD) innovation, organization structure (OS) innovation and the products innovation.

1. Research and Development (R&D) Innovation



Fig. (2) Expenditures by (Thousands JD) on Research and Development in four Jordanian Industrial company's during the period 2014 -217

Fig. (2) Illustrates the expenditures of the four industrial companies' on research and development and conducting training courses for the staff. However, firm (1) spent higher than all other firms during the period 2014-2017; 12.6, 14, 16 and 16 thousands JD respectively. Moreover, Firm (2) spent 6.4, 6, 7.2 and 7 thousands JD on scientific researches to for products development and training of the staff. However, firm (3) expenditures on training, research and development were 11, 10.5, 12 and 14 thousands JD. Finally, firm (4) expenditures kept fluctuating between 8.3 and 8 thousands; however, the firm invested 8.3 in both 2014 and 2015, 8 in 2016 and 8.3 thousands in 2017. It is clearly noticed that firm (1) and (3) invested higher on scientific research and development, while the payment is increasing. On the other hand, the payment of the other two firms; (2) and (4) is lower and fluctuating with no increase.

2. Human Resource Strategic Innovation

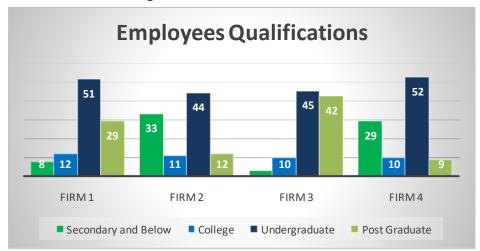


Fig.3 percentage of the employees Level of Education in four Jordanian industrial firms

According to Fig.3, the heist level of education is the undergraduate level in all firms; and the rates ascending are 51%, 44%, 45% and 52%. In firm (1) the secondary and below level percentage is low; 8%, while the post graduate is 29% and the diploma level is 12%. However, in firm (2) the secondary and below level percentage is high; 33% of the total staff, while the post-graduate is 12% and the diploma level is 11%. Moreover, in firm (3) the secondary and below level percentage is low; 3%, the post-graduate is 42% and the diploma level is 10%. Finally, firm (4) the secondary and below level's percentage is high; 29%, while the post-graduate is 9% and the diploma level is 10%. The aforementioned rates indicate the development in the HR department in firm (1) and (3) keen to hire staff with higher levels of education; which means the management are applying the HR strategic innovation. In contrast, the HR departments in firm (2) and (4)

are recruiting high level of secondary and below holders and low level of postgraduate holders; referring to lower level of HR strategic innovation.

3. Firm structure innovation

The firm structure innovation was measured by Likert scale, whereby respondents evaluated the firm structure through indicating the extent to which they agree on a set of statements. The responses coding was using a scale of 1 to 3; whereby (1) means no extent, (2) moderate extent, (3) large extent, and the findings are collected in table (1) below.

However, table (1) indicated that employees in the four firms had the freedom to decide the mechanism of how they were going to do their work. However, the respondents indicated to less extent that the management was not enthusiastic and confident about their work. Furthermore, the respondents indicated to less extent that the companies encouraged sense of confidence on the employees.

| | Average ranking | Standard deviation |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| The firm structure is that managers and supervisors are able to support their teams | 3.667 | 0.5774 |
| The communication is welcomed, encouraged and free in the teams | 3.6667 | 0.5774 |
| Employees are motivated by their management and feel that the management is enthusiastic and all of the employees feel themselves as a part of the management | 2.0000 | 0.0000 |
| The management encourages the self-supervision to provide a sense of confidence for the employees | 2.0000 | 0.0000 |
| Employees have the access to get the resources they need for their work | 2.6667 | 1.1547 |
| Employees have the right to decide how they are going to accomplish their work | 4.000 | 0.0000 |

Table 1: Firms Structure Innovation

4.

5. Products innovation

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Table (2) below indicates the procedures of promoting and supporting the innovations, which is adopted in four industrial firms in Jordan. However, it is clearly noticed that the industrial firms supports the development of new and innovative ideas, and invested the technology in order to enhance the firms' strategy.

| <u>.</u> | Average ranking | Standard deviation |
|---------------------------------------------------------------------------------------|-----------------|--------------------|
| Management encourages the innovations and new ideas; and the innovations are rewarded | 2.6667 | 1.1547 |
| New ideas on work are resisted and welcomed | 2.6667 | 1.1547 |
| The management is highly committed to development of new ideas and invest them | 4 | 0 |
| Management are always support the staff training | 3 | 1 |
| The firm invested in the technology in order to support the firm's strategy | 4 | 0 |

Table. 2 Products Innovation

Financial Performance

| | Year | ROA | Leverage | Profits | Net Assets |
|--------|------|---------|----------|---------|------------|
| Firm 1 | 2014 | 0.19340 | 0.531266 | 1221666 | 10992084 |
| | 2015 | 0.52700 | 0.117696 | 2039822 | 11207717 |
| | 2016 | 0.24800 | 0.168900 | 2349827 | 12509830 |
| | 2017 | 0.24270 | 0.156600 | 2471383 | 13001882 |
| Firm 2 | 2014 | 0.0571 | 0.18885 | 1620400 | 8649080 |
| | 2015 | 0.0334 | 0.23956 | 1425204 | 8158990 |
| | 2016 | 0.0256 | 0.2394 | 1256688 | 7187627 |
| | 2017 | 0.0182 | 0.2531 | 1235522 | 6704054 |
| Firm 3 | 2014 | 0.0182 | 0.9129 | 1965521 | 4354151 |
| | 2015 | 0.0571 | 0.6883 | 2023356 | 6208563 |
| | 2016 | 0.0740 | 0.6641 | 2093488 | 6900633 |

| | 2017 | 0.0971 | 0.5768 | 2201525 | 8625465 |
|--------|------|---------|---------|---------|----------|
| Firm 4 | 2014 | 0.00184 | 0.04715 | 1955648 | 46319278 |
| | 2015 | 0.0016 | 0.04175 | 1900885 | 46319278 |
| | 2016 | 0.0649 | 0.04210 | 1854288 | 46233803 |
| | 2017 | 0.0155 | 0.04677 | 1752354 | 46169983 |

Table.3 Financial performance of Four Jordanian Industrial Firms during the period 2014 - 2017.

Table.3 indicates the financial performance of four industrial companies in Jordan during the period 2014 -2017. However, table shows advancement in financial performance of firm (1) and (3); whereby it shows that the profits are increasing while the leverage (firm's debt) is decreasing. In contrast, the table represents an increasing level of leverage in firm (2) and (4) while the profits are decreasing. Turning to the firm net assets, it is clearly noticed that in firm (1) and (3) the net asset is increasing, while it is decreasing in firm (2) and (4); which oblige these firms to borrow or to sell part of the assets.

SIM Practices and the Firms Financial Performance

| R | R Square | Adjusted R Square | Std. Error the Estimate | | 2 |
|--------------------------------------------|----------|----------------------|-------------------------|--------|--------|
| 0.5063 | 0.2564 | 0.2173 | 0.04738 | | |
| Model ANOVA | | | | | |
| Sum of Squares | | df | Mean Square | F | Sig. |
| Regression | 0.0774 | 15 | 0.0774 | 0.3448 | 0.0066 |
| Residual | 0.224 | 1 | 0.2245 | | |
| Total | 0.3019 | 16 | | | |
| Coefficient | | | | | |
| Unstandardized Std. Standardized t Sig. | | | | | |
| Coefficient Error Coefficient | | | | | |
| Constant 0.0134 | 2.6451 | | 5.4725 | | 0.0048 |
| SIM | 1.0345 | 1.7619 | 0.5063 | 0.0187 | 0.0066 |
| Practices Financial Performance | 0.003392 | 0.0032 | 1.664698 | 0.3475 | 0.0009 |

The study found that SIM practices have positive impact on the firm's performance. However, applying the HR innovation, products innovation, research and development and firm structure innovation leads to enhance the firm's financial performance. This result presented by coefficient of correlation (0.78) which refers to a positive relationship between SIM and financial performance. On the other hand, firms with structure innovation; indicated higher financial performance. However, managers and supervisors are able to motivate and support the teams, the communication between firm's employees and management was encouraged within teams without borders. Moreover, in the where staff have self-supervisory, and the staff feel that their management was enthusiastic and confident about their work, indicated higher financial performance. However, the regression of HR strategic innovation and performance where coefficient of correlation of (0.51) referring to a positive effect of HR strategic innovation on firm's financial performance. The model indicated a coefficient of determination of (0.26), which indicates that HR strategic innovation was accounted for (26%) of the development of the firm's financial performance. On the other hand, the product innovation could increase products number, and consequently leading to enhance the financial performance of the firm. In firm (1) and (3) there were higher product innovations (42) new ideas and products. Staff were encouraged to innovation and rewarded, invested higher on development, staff training and scientific researches, and invested in technology to support their strategies. These findings are consistent with the study of Chijioke et al. (2018) who stated that SIM practices are necessary to improve and develop the organization performance. As well as, theses result agree with Micheline and Reinhilde (2008) who declared that SIM practices contributed significantly to introduce new products, processes and the organization performance.

Conclusion

Strategic innovation management (SIM) practices are the adopted management strategies, which aims at enhancing the organization performance. However, SIM practices are involved around training and development (T&D), human resources innovation (HR) (recruiting staff with higher level of education), firm's structure innovation and product innovation. SIM lead to path the way between the staff and employees, openness for communication between the teams, welcome new and innovative ideas from the staff and invest their innovations to generate new products; leading to increase the competitive advantages and enhance the firm's financial performance. The financial performance of any organization refers to: net assets, leverage, return on assets (ROA) and profits. The present study sought to explore the effect of the SIM practices on the firm's financial performance. Therefore, the research instruments are a questionnaire which

distributed to HR departments of (4) Jordanian industrial firms; to collect the HR department responses about the firm structure and qualifications of the staff. However, the questionnaire measures the products innovation and the willingness and openness of the management to invest the staff innovation and generate new products. On the other hand, the research used a second instrument, which is reviewing the annual financial statement of these firms in order to observe the ROA, profits, net assets, leverage, and the products innovations. Finally, the researcher analyzed the data through the statistical package for social sciences (SPSS), and found that firms which apply SIM practices reached higher performance and that there is a positive relationship between the SIM practices and the financial performance among the industrial forms in Jordan.

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