The Relationship between Customer Relationship Management and Product Innovation

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Abstract: In the last decade, businesses have been under pressure to find innovative ways to meet customers' expectations in an increasingly competitive market. In this vein, businesses have promoted customer relationship management (CRM) systems as a critical contributor to product innovation. This article used quantitative correlational design to examine the relationship between the use of CRM system in small to medium size companies in the United States (US) and product innovation. The data was collected from selected samples by answering SurveyMonkey's questions. IBM Statistical Package for Social and Sciences (SPSS) system, version 23 was used for tabulating and achieving a reliable result. The findings showed that the two null hypotheses were rejected stating that there is a negative correlation between the predictor and criterion variables.

Key words: CRM System, Product Innovation, Quantitative Research, Correlation Design.

1. Introduction

Business needs to understand customers’ demands to forge solid relationships by satisfying these demands (Hailey, 2015). Most modern businesses are increasingly facing serious competition in the marketplace, which means a greater pressure to create innovative tools and products to survive and succeed. Few years ago, business required the use of customer relationship management (CRM) system to bring new ideas to product innovation in the stable industry. Based on the study of Verrill (2013), a CRM system involved utilizing technology for managing and automating several processes of products, sales, services, and marketing with timely interaction between companies and their customers in an effort to build satisfactory mutual relationships. The organization can manage its people efficiently, undergoes product innovation, and advance its technology (Mavuram, 2013). Hailey (2015) argued that most companies nowadays have become aware of the need to meet customer demand to obtain competitive advantage.

In the contemporary literature, studies provided various explanations for the use of CRM system. However, most of them were focused on utilizing a CRM system through people, information, and process, as a part of assisting businesses (Verrill, 2013). As a result, previous studies focused on the relationship among customers, implementation and financial performance. This study addressed a different angle. It focused on the beneficial use of CRM system for product innovation in small to medium sized companies in the US. Some businesses are reluctant to use CRM system as a way to improve product innovation to increase their profitability (Colman, Devinney, & Midgley, 2011). Owens (2014) claimed the prime use of CRM system in business is to enhance customer relationship during the process of technology integration. A quantitative correlational design was used to determine whether the use of CRM system in small to medium sized companies in the US enables companies to assess customers demand in order to maximize their product innovation, thus enhancing the potentials of meeting customers’ expectation and keeping them satisfied. A CRM system is widely related to developing company activities, which can help innovate business products (Ku, 2010). Therefore, investigating the relevance of CRM system to product innovation is very relevant issue. The results of this study were helpful to leaders of small to medium sized organizations in making excellent decisions on product innovation by using CRM technology.

1.1. Research Questions and The Hypotheses

The quantitative study used to explore whether the investment in a CRM system in the selected small to medium-sized companies in the US added value through product innovation or not. A correlational
design helped address the research problem by answering the study question and validating the hypotheses by detecting statistical relation between the two variables. The correlational design addresses whether the level of difference in one variable is related to the level of difference in another (Leedy & Ormrod, 2010). This research question assumed that product innovation is more acceptable because the CRM system is able to provide information about the needs of the customers.

RQ1: What is the significant relation between CRM system using and product innovation?

Correlation was used to accept or reject the hypothesis.

H1₀: There is no significant relation between the CRM system using and product innovation.

H1ₐ: There is a significant relation between CRM system using and product innovation.

1.2. The Significance of a Study

The study aimed to develop multiple theoretical concepts to evaluate the beneficial use of CRM system with small to medium sized businesses in the US to meet customers’ expectation. Nazari-Shirkouhi, Keramati, & Rezaie (2015) discussed different theoretical studies that have examined the relationship between factors that are linked between customers and new product development through the quality, features, marketing, sales, and return. But in fact, there is no indication that the use of CRM system provides assistance in innovating businesses products or services to keep customer satisfaction. The multiple theories focused on the use of CRM system to develop competitive advantage of businesses, as well as to improve their good and services by meeting customer demand. Using CRM system enhances capability of organization by providing relevant information about customer demands that might be valuable to generate a new idea for product innovation that generates a new idea Nazari-Shirkouhi et al. (2015). The theoretical concept in this study presented the correlation between the use of CRM system and product innovation, and its impact on business profitability. These theories are valuable for future research and the academe could use them as starting point for discussion and debate.

This research also appealed to in business organizations’ leadership interested in further applications of CRM systems. It specifically aims to provide recommendation to those small to medium sized companies in the US who are still uncertain about the beneficial use of CRM system in the area of product innovation. CRM system integrates innovational activities to meet customers’ demand and keep them satisfied (Ku, 2010). The customers could benefit from this study because the results presented information that increase their awareness of business organizations’ efforts to support them through the establishment of consistent communication channels.

2. Literature Review

Innovation concerns the ability of businesses to utilize their information into new knowledge (Mothe, Uyen, & Thi, 2010). Product innovation relates to the creation of a unique function, quality of appearance, or consistency of product for marketing share (Peter et al., 2011). Service innovation proposes the manufacturers’ commitment to different innovation activities to improve customer satisfaction after-sale services (Siltala, 2010; Kindstrom & Kowalkowski, 2014).

On the other side, Kang, Cho, & Baek (2012) asserted that all customer values are delivered from the effective relationship between the organization and the customers, which is critical to determine the corporate significance. The companies may find difficulty in satisfying the customers because of their diverse behaviour complicates the process of discerning their views on the quality of products or services (Mothe et al., 2010). Numerous businesses, including small to medium-sized companies, show special interest in new technologies to market their products and services. Ku (2010) and Labus & Stone (2010) believed the Information Technology (IT) currently redesign the business processes for a more dramatic development in the company’s service delivery system. That is why White and Yanamandram (2010) considered quality of technological use the primary aspect of customer’s expectation in every business portal.

In Saarijärvi, Karjaluo, and Kuusela, (2013) study, the use of CRM system can offer direct information about the sales and marketing demanded to innovate product and serve the customers better. The core of using the CRM system is the integration of technologies and business process to satisfy the demands of customers at any given exchanges (Bose, 2012). The CRM system can increase marketing efficiency with adaptable tools, perceptive analytics, necessary management, and automatic response (Chen &
Popovich, 2013). As a result, the customer value takes centre stage in altering a process, product or a service in an organizational marketing system. Meanwhile, innovating business technology using the CRM system involves modifications to organizational culture (Kindstrom & Kowalkowski, 2014). While both business processes and technology are crucial in a successful CRM initiative, the individual employees will continue in building blocks of customer relationships (Mothe et al., 2010; Siltala, 2010). Based on the literature of Siltala (2010), businesses must strengthen their innovation practices for the sake of market demands and customer needs. Organizations possessing greater innovative capabilities in product and service are able to succeed and earn twice the profit of those firms without innovation (Strumsky, Lobo, & Tainter, 2010). Given this, active improvement of innovation capabilities for meeting the requirement of greatly unpredictable markets of competitive actors has become a significant subject for manufacturing companies. Davila, Epstein, & Shelton (2010) stressed that business orientation should not only focus on the retention of customer but also on motivating them to extend assistance by offering important suggestions to develop the firm’s products and services. CRM system helps companies to refine their knowledge about customer preferences and tastes (Strumsky et al. 2010; Vella & Caruana, 2012). The efficiency and effectiveness of CRM are gradually recognized as a system for affording a lasting of competitive advantage and improving innovation capability (Mothe et al., 2010; Tajinder & Singh, 2012). Previous studies of CRM system are mainly focused on utilizing the culture to growth the operational performances and organizational structure (Strumsky et al., 2010). However, Vella and Caruana (2012) claimed the relationship between CRM and innovation capabilities had not been sufficiently studied. Wang and Hui (2012) stressed that an intense interface between customers and manufacturer will provide a much-valued product improvement.

3. Method

3.1. Method and Design
A quantitative method uses to collect numerical data, analyze, and explain the phenomena-based statistics (Vogt, 2003). Neuman (2011) asserted that a study design purposes to articulate the requirements of the data, the use of methods, and the process to respond to the research question. This paper used a quantitative method, particularly a correlational design, for discovering the relationship between the predictor (CRM system usage) and criterion variable (product innovation). The quantitative analysis presents its findings with the use of statistical procedures (Neuman, 2011).

3.2. Setting, Population, Sample
The population in this research originated from 97 participants of ten small to medium size companies in the US. The population was randomly selected from the top managers, middle managers, and first line managers. In this research, the statistical software G*Power version 3.1.9.2. was used to calculate the minimum number of sample size. The participants asserted that they have at least 2 years in the company and they are knowledgeable about CRM system, as having proper understanding about product innovation. On the other side, companies that may have the CRM system but are not using it for product innovation were not included in the list of company participants.

3.3. Data Collection and Analysis Procedure
The research was conducted in several small to medium size business organizations in the US. The initial task in data collection was to obtain the permission from management to respond to the following survey statements:

1. Our organization develops new products regularly
2. Our organization always seeks for new ideas
3. Our organization introduces more products to our customers
4. Our organization offers competitive new products to the market
5. Our company gains competitive edge in product innovation
6. Our company offers innovative products to a variety of customers

Then, the consent form was offered two choices to accept or decline to participate in the survey platform. Only those who agreed with the terms were permitted to progress with the online survey. The others were automatically signed off. The norm of consent stays an essential part of research ethics (Neuman,
The consent form provided full information about the component of survey, duration, confidentiality, confidentiality, benefits, and possible risks through all stages of research process.

For data collection, the survey was distributed to random selected participants through the electronic platform of the SurveyMonkey. The survey was composed of structured statements asking the respondents to rate their agreement or disagreement based on their knowledge about the used CRM system and product innovation. When participants responded to each statement in the survey, the date was tabulated in distribution table, computing the mean average for each statement. The research was designed to prevent inaccuracy. Therefore, the findings of research guaranteed the validity and reliability of the data.

4. Results of Analysis

The findings of analytical process considered to evaluate the relationship between variables, the use of CRM system (X) and product innovation (Y). Each variable is composed of six statements that the research participants rated from strongly agree to strongly disagree using the Likert scale model. In a matter of Likert-style, this study computed the overall score for the scale rating 1 – 5. It then performed a correlation with other continuous variables. After testing the data, the result showed that there are no missing values and there were no missing data from all respondents. The used of the IBM SPSS version 23 was to determine the validity and reliability of the data in this research study, while the ordinal analysis yielded the results that were used in evaluating research questions. At the same time, the Pearson correlation used to measure the linear correlation between X and Y at the constant level. The correlation has a value of +1 for a total positive linear correlation, -1 for a negative one, and 0 for no linear correlation. The result generated by survey participants and tabulated using the regularity distribution table. On the other side, the Mean Average was generated for all categories from small to medium size companies to investigate the correlation between the two variables, as computed a set of n data $x_i$:

$$\bar{x} = \frac{\sum x_i}{n}$$

*Figure 1: the Mean Average, source: author (2019)*

The research question RQ1 tried to establish the relationship between CRM system usage and product innovation. The Mean Average of 3.95 showed that the dimensions under each variable neither agreed nor disagreed that there is a significant relation between CRM system and product innovation. The standard deviation (std) displayed that the data around the mean is concentrated. It was reflected by a smaller the standard deviations of 113 and 129 respectively.

The correlation coefficient ($r$) of .371 measures the strength and direction of a linear relationship between the CRM system and product innovation which has a value of 0.47. The value of $r$ is always between positive 1 and negative 1. To interpret, the correlation between the two variables is weak to moderate linear relationship.

<table>
<thead>
<tr>
<th>Table 1: Pearson Correlation between CRM system and product Innovation, source: author (2019)</th>
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<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>CRM System</td>
</tr>
<tr>
<td>Product Innovation</td>
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</tbody>
</table>
4.1. Discussion

The two variables existed on this quantitative correlation research included the use of CRM system and product innovation. This was accomplished by investigating how these variables inter-connected with each other. Quantitative research has structures and techniques that are fundamental to computing the results and providing recommendation for future strategy (Neuman, 2011; Vogt, 2003). The measurement under CRM system showed that the participants have positive awareness on the uses of CRM in their organization, which was a good indicator that they are willing to push through with efficient use of the system. Awareness of the CRM system was the initial step toward bringing the process of the CRM system to full operational capacity. According to Chesbrough (2007), awareness of the presence of an IT system marks the beginning of a new innovative business process that can benefit the organization in every business design that it wants to implement. On the other side of product innovation, the CRM system can provide specific data for the growth stage of the new product.

Table 2: Summary of the dimensions under product innovation, source: author (2019)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4.01</td>
<td>0.106</td>
<td>4</td>
<td>1.094</td>
</tr>
<tr>
<td>2</td>
<td>3.09</td>
<td>0.105</td>
<td>4</td>
<td>1.064</td>
</tr>
<tr>
<td>3</td>
<td>3.72</td>
<td>0.114</td>
<td>4</td>
<td>1.265</td>
</tr>
<tr>
<td>4</td>
<td>4.01</td>
<td>0.114</td>
<td>4</td>
<td>1.26</td>
</tr>
<tr>
<td>5</td>
<td>4.01</td>
<td>0.103</td>
<td>4</td>
<td>1.031</td>
</tr>
<tr>
<td>6</td>
<td>3.92</td>
<td>0.105</td>
<td>4</td>
<td>1.076</td>
</tr>
</tbody>
</table>

After tabulating the result by using IBM SPSS version 23, the statistical computation showed that the correlation between CRM system and product innovation is weak to moderate linear relationship. The Mean Average of 3.95 presented that the measurements under each variable neither agreed nor disagreed that there is a significant relation between the used of CRM system and product innovation. The standard deviation (std) displayed that data around the mean are concentrated. Consequently, the correlation did not show a linear relationship. The reason was the correlation coefficient (r) of .371 measures the strength of a linear relationship between the CRM system and product innovation which had a value of 0.47. But the value of r is eternally between +1 and -1. Referring to the value, the correlation between the use of CRM system and product innovation was weak to moderate linear relationship. Accordingly, the null hypothesis was accepted stating that there is no significant relation between the use of the CRM system and product innovation.

5. Conclusion

The result only proved that the CRM system usage was primarily meant to deliver good customer service rather than providing the company with new concepts for fresh products to market. One limitation of this study finding was the availability of participants to complete the survey platform within a limited period. Part of this may be attributed to internet interruption and distance. Black (1999) asserted that the unwillingness of participants to response that may affect the study’s result. Also, the population in this research was focused on first line manager, middle manager, and top manager who have experience used the CRM system in small to medium size companies in the US. It therefore eschewed surveying the role of team members who worked with managers and have extensive knowledge and expertise about the use of CRM system and its benefit for product innovation. Consequently, the population for this study was limited; yet, this subject category (small to medium size businesses) are growing each day. This clearly impacts the generalizability of the findings.
For future recommendation, the academe, leadership of business organization and their customers may take advantage of this study for business innovation. This research provided information about the benefit of using CRM system as a powerful tool for business development. The finding encouraged business leadership to leverage their use of CRM system into business practices to benefit organization. Furthermore, business organizations may convert these practices into new idea for useful products in order to improve the business profit. Finally, this study contributed to the academic literature on business strategy, customer service, and adding value. As a result, future research may use the findings of this study, resolve its limitation by ascertaining a better general conclusion of the impact of the use of CRM system on product innovation. Future research could use qualitative or mix method for offering a deeper understanding of the benefit of using CRM system for the purpose of product innovation. One way to do so, is by widening the survey sample. This may draw the line toward the use of CRM system and its effect on product innovation of small to medium size companies in the US.

8. References


JEL Classification: M11, M15, M31, O32, O33.