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Enhancing Product Innovation through Strategic Customer Relationship Management: An Empirical Investigation

Shuaib Ahmed[1]*, Khadija Laeeq[2], Ayesha Ahmed Khan[2]

[1]Logistics and Supply Chain Management, IoBM, Karachi, Pakistan
[2]Karachi Institute of Economics and Technology, Karachi, Pakistan

ABSTRACT

Purpose: The linkage between effective customer interactions and innovation is a well-established notion in marketing, emphasizing the importance of leveraging customer feedback in the product development process. Yet, the specific role of Customer Relationship Management (CRM) in facilitating product innovation remains underexplored. This study aims to fill this gap by examining how CRM initiatives contribute to the phases of product innovation.

Methodology: Utilizing a refined questionnaire, data were collected from leading corporations in Karachi, with a perfect response rate of 102 out of 102 distributed questionnaires.

Results: Results indicated that not all CRM actions increase the throughput of innovation. Any company's plan to stand out from rivals in the eyes of customers is a long-term collaboration and technology-based CRM.

Implications: This research proposes and explores the dynamics between key CRM activities and the product innovation process's stages. It scrutinizes the impact of CRM practices—information sharing, customer engagement, fostering long-term relationships, and collaborative problem-solving, alongside technology-enabled CRM—on the four critical stages of innovation: initiation, input, throughput, and output. Through a survey-based methodology, the study validates several hypothesized relationships.

Keywords: Customer relationship management (crm), product innovation, crm practices, corporate strategy, market responsiveness.

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***Address of Correspondence:**
Shuaib105@gmail.com

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1. INTRODUCTION

Overview of the Study

In the realm of business strategy and operations, the customer occupies a pivotal role, serving as the linchpin around which all organizational activities revolve. The axiom that without customers there is no business underscores the critical importance of customer satisfaction in fostering repeat patronage and loyalty. As highlighted by Pesämaa *et al*. (2008), the dynamism of the marketplace necessitates continuous product

evolution, wherein obsolescence is countered with innovation. This study ventures into the relatively uncharted territory of discerning the intricate dynamics between Customer Relationship Management (CRM) and the product innovation process. It posits that CRM, encompassing information sharing, customer engagement, enduring relationships, collaborative problem-solving, and technology integration, plays a crucial role across the innovation lifecycle stages: initiation, evaluation, implementation, and realization.

Echoing Peter F. Drucker's assertion, innovation emerges as a quintessential competence across the organizational spectrum, transcending mere business applicability to embody a fundamental organizational imperative (Daly & Walsh, 2010).

Background and Research Problem

Innovation goes beyond creating new products or services. It involves market-driven validation and commercial viability, distinguishing it from mere invention or creation. In today's rapidly evolving landscape, organizations must enhance their innovative capabilities to meet evolving market preferences and secure a sustainable competitive advantage (Panayides, 2006). Empirical evidence suggests that innovation leads to higher profitability, as seen in companies like HP and Gillette (Steenkamp *et al*., 1999). However, innovation also comes with risks and costs, as evidenced by the proportion of innovations that fail to achieve commercial success (Pesämaa *et al*., 2017). This dual nature of innovation poses a critical challenge for firms to refine their innovation capabilities amidst fierce market competition (Shane & Ulrich, 2004).

CRM plays a crucial role in enhancing business-customer interactions. It not only retains customers but also solicits invaluable feedback and is instrumental in refining products and services (Ramani & Kumar, 2008). CRM enables a deeper understanding of customer preferences and needs, positioning it as an indispensable tool for bolstering innovative capacity and securing a lasting competitive edge (Sahay & Ranjan, 2008). Despite its evident importance, prior research has scarcely delved into CRM's role in the product innovation process. This study aims to bridge this gap by elucidating the impact of key CRM activities on the innovation process's various stages, thereby establishing the empirical linkage between these two critical constructs.

Problem Formulation, Research Question, and Purpose

Considering the varied outcomes of innovation processes and the conspicuous need for deeper insights, this research is timely and relevant. This exploration seeks to both clarify this relationship and empirically validate it through targeted research hypotheses. Through this analytical approach, the study aims to offer corporate management a practical and insightful perspective on leveraging CRM activities to enhance the innovation process.

2. LITERATURE REVIEW

Theoretical Review

Innovation

Innovation, fundamentally, is a valuable and relevant idea that serves a customer willing to pay for its delivery at a fair price. Conceptually, innovation encompasses thoughts, activities, or items, perceived as innovative by individuals or organizational units (Fruhling & Siau, 2007). The capacity for innovation is essential for generating novel ideas, processes, or products. Innovation capability involves utilizing technology to develop new organizational structures, policies, programs, goods, services, and devices (Jamil *et al*., 2022). The goal of this study is to emphasis product innovation. According to Liao *et al*. (2007) product innovation is the process of developing and releasing a new product to the market or altering the features, quality, or appearance of an existing product.

Innovation Process

The innovation characterized by intricacy and interaction. The "linear model of innovation" (Rosegger, 1986) was one of the earliest attempt to conceptualize technological change comprehensively. Subsequently, the "chain-linked model" (Rosenberg, 1986) emphasized the collaborative nature of innovation. From the literature on the innovation process, several key insights emerge:

- In the initial phase, efforts focus on generating ideas and determining the feasibility of further innovation.
- The input stage involves assessing and allocating resources for innovation activities.
- The throughput stage entails transforming innovation inputs into tangible outputs.
- The output phase involves evaluating the direct outputs of innovation

Customer Relationship Management

Customer relations is the process by which businesses encourage client loyalty and satisfaction. The primary objective of the most customer engagement programs is to establish enduring connections. The program normally has two components: first, it identifies customers who continue to use the product or service, and second, it identifies customers who tell other people about it (Pesämaa *et al*., 2008). CRM, therefore involves employing sophisticated techniques and technology to locate, acquire, and retain valuable clients, nurturing lasting relationships (Khan, Anwar *et al*. 2023).

Information Sharing

According to McEvilly and Marcus (2005), information sharing is the sharing and exchange of vital and exclusive information through interactive activities between manufacturers and their customers. Research demonstrates that consumer involvement impacts the value of new items. Additionally, the effectiveness of the process for developing new products is impacted by such engagement. Information exchange between producers and consumers ought to raise the value of new goods (Jalees *et al*. 2023).

Customer Involvement

Consumer involvement relates to consumer participation in meetings for new product development, technical discussions, the yearly conference for the supply chain, and conferences for market evaluation (Khan., 2022). It is presumable that customers who participate in the development of new goods and services value elements that influence customer happiness (Lagrosen, 2005).

Long Term Partnership

A long-term partnership is an alliance of two businesses based on trust and dedication. A long-term relationship requires a high level of dedication and trust between the customers and the businessmen (Agha *et al*. 2021). In CRM, marketers evaluate each customer's lifetime worth to determine whether to develop a relationship with him or her and provide specialized products. Additionally, manufacturers are better able to maintain close relationships with their customers based on mutual trust and understanding. As a result, they are more likely to accurately identify customer demands and offer a suitable pricing structure, promotional activities, and retailing and marketing strategies (Lin & Germain, 2004).

Joint Problem Solving

When businesses and consumers work together to solve issues and divide duties under challenging or unexpected circumstances, this is referred to as joint problem solving (McEvilly & Marcus, 2005). Companies may increase the value that customers receive while purchasing and using products and services by

incorporating customers in the co-creation process. It lowers the inherent risks of innovation and enables businesses to comprehend and respond to deeper and more important consumer needs (Maklan, *et al*., 2008).

Technology Based CRM

The use of computer technologies by manufacturers to facilitate various CRM activities and actively provide customers with technology help, such as data mining, CRM software systems, and data storage, is known as technology-based CRM (Sin *et al*., 2005). Information systems and technology are acknowledged to support product innovation. CRM systems can assist businesses in better organizing internal data to better minimize service costs, assist salespeople in closing deals more quickly, and improve the targeting of marketing initiatives. (Jamil *et al*., 2023).

Research & Development

Research and development (R&D) plays a pivotal role in the interaction between customer relationship management (CRM) and product innovation. Effective CRM practices translate into enhanced domain knowledge of customer needs, preferences, and pain points, leading to opportunities for product improvements and new offerings. Incorporating customer insights into R&D facilitates the ideation and development of innovative products aligned with customer expectations, thereby increasing satisfaction levels and setting the company apart from competitors. Therefore, studying the interaction between CRM and R&D is essential for comprehending how customer-centric strategies can drive product innovation and contribute to long-term business success (Jiang *et al*., 2023).

Hypotheses Development

Information Sharing and New Output

According to the concept, there is a direct and positive relationship between information exchange and innovation output. For the organizations, effective information sharing among the internal departments, the external partners, and the customers can add value to the creativity. The shared exchange of ideas and insights may develop innovation and creativity since organizations are open to greater amounts of knowledge and views. The hypothesis also indicates that customer relationship management (CRM) has a favorable effect on product innovation (Foster & Kaplan, 2001).

Innovation through Output and Technology-Based CRM

According to the idea, innovation through output and technology-based CRM are directly and favorably related. Companies can improve innovation and have a favorable impact on product innovation when they employ technology-based CRM systems and practices (Reid & de Brentani, 2004). CRM that is technology-based manages and analyses customer connections by using digital tools, software, and automation. These CRM systems may gather and arrange customer information, enable personalized interactions, and offer perceptions into client preferences and behavior. By utilizing digital tools, software, and automation, technology-based CRM manages and assesses customer relationships. These CRM systems have the capacity to collect and organize customer data, enable tailored interactions, and provide insights into client preferences and activity. The hypothesis states that organizations can increase their output of innovation by utilizing technology-based CRM. These are a few explanations as to why this might be the case (Rashid *et al*., 2021).

Involvement by Customer

Customer involvement and innovation through output are directly and positively related to the idea. In fact, the companies may increase creativity and have a positive effect on product innovation if they engage the customer in the innovation process and manage the connections with the customers through CRM practices. In current study, it is hypothesized that involvement of the customer will have a positive influence on

innovation through output, which is the real application and tangible results of various innovation initiatives. Involving customers actively in the process of innovation will provide the organization with wide-ranging perspectives and insights into needs and preferences that could be used to direct the development and improvement of new goods that will be better able to meet these needs more effectively as per the works of Dyche (2001). CRM allows the firm to be very keen on consumer demand, with full understanding by putting focus on this platform in innovative acts and enabling the collection of customer feedback, customer behavior, and preferences, as well as remaining in communication continuously (Miao *et al*., 2022).

Relation between Innovation through Output and Technology-Based CRM

These CRM systems may gather and arrange customer information, enable personalized interactions, and offer perceptions into client preferences and behavior. By utilizing digital tools, software, and automation, technology-based CRM manages and assesses customer relationships. These CRM systems have the capacity to collect and organize customer data, enable tailored interactions, and provide insights into client preferences and activity. Organizations are able to gather, store, and analyze enormous amounts of customer data thanks to technology-based CRM systems. Organizations may discover important information about client behavior, preferences, and needs by utilizing advanced analytics and machine learning algorithms (Guerola-Navarro *et al*., 2021). These perceptions offer a strong foundation for locating innovation opportunities and creating goods that better satisfy consumer needs. Hence, CRM solutions based on technology can automate and expedite a number of steps in the product development process. CRM software can include project management features, workflow automation, and real-time collaboration capabilities, from idea generation to prototyping and testing. This can shorten the time it takes for a product to reach the market and speed up the invention process. (Khan, Khan *et al*., 2023).

Relation between Involvement of Customer, Innovation through Output and Technology-Based CRM Customers are actively engaged and collaborated with throughout the innovation process when they are involved. This also includes the involvement of the customers in a number of ways that may include seeking their views, participation in co-creation sessions, taking part in testing and validation, or asking for their opinion as products are being developed (Statsenko & de Zubielqui, 2020). Output innovation, on the other hand, refers to the concrete outcomes or tangible consequences of innovation process. It constitutes the successful application and commercialization of the new ideas so as to render new or improved goods, services, procedures or business models that shall be of benefit to the organization, as well as to its clients (Muntean *et al*., 2022). This reveals that such organizations that will involve customers, with the use of CRM systems and effective customer relationship management through technology, are likely to bring about an increase in innovation output, as well as product innovation. Technology-driven CRM systems provide a platform for personal interaction with customers that can enable the tailoring of goods and services specifically to the customer's need (Rahman *et al*., 2023).

Joint Problem Solving and Innovation through Output

Joint problem resolution describes cooperative efforts made by businesses and their clients to recognize and address challenges. Customers must be actively involved in the stages of problem discovery, solution development, and evaluation. By including customers in collaborative issue solving, businesses can benefit from their knowledge, perceptions, and unique views, which can spur innovation (Zaman *et al*., 2023). Innovation through output describes the effective application and observable effects of innovation activities within a company. According to the idea, when businesses collaborate to solve problems, they can enhance their output of innovation and have a favorable effect on product innovation. The innovation process is enhanced by involving customers in collaborative issue solving. The chance of innovation through output can

be increased by using this information to direct the innovation process and make sure the final goods and services are more in line with client requirements (Marion & Fixson, 2021).

Relation between Innovation through Output and Technology-Based

Based on the concept, the relationship is direct and favorable between innovation through output and technology-based CRM. When technology-based CRM systems and practices are applied by companies, innovation can be improved with a favorable impact in terms of product innovation (Dyche´, 2001). Technology-based CRM manages and analyzes customer connections with the use of digital tools, software, and automation. Such CRM systems may collect and organize customer data, thus facilitating interaction at a personal level and yielding insight into customer needs and behavior (Fruhling & Siau, 2007).

Joint Problem Solving, Innovation through Output and Technology-Based CRM

Joint problem solving involves the cooperation of organizations and their customers in identifying and solving problems together. Through joint problem-solving with customers, organizations can tap into the expertise, insights, and unique perspectives that customers provide towards innovations (Statsenko & de Zubielqui, 2020). Output innovation refers to the implementation of innovation efforts successfully and also the tangible results of innovation attempts within an organization. It also includes the ability of translating new ideas into practice or new solutions, new products, and new services that drive value to the customers or the organization (Meng *et al*., 2021).

Relation between Innovation Output and CRM with the Base of Technology

It is theorized that the use of technology-driven CRM systems positively influences the innovation output of firms, especially in terms of product innovation (Rooney *et al*., 2021). CRM systems driven by technology can lead to improvement in innovative capability of the organization and its productivity in the field of development of new product. Hypothesis of the current study is that when organizations adopt and efficiently employ technology based CRM systems, it results in the augmentation of innovation output of the said organization particularly in the creation of new and innovative products. This hypothesis assumes that when organizations form sustainable relationships and use technology-driven CRM tools, it further strengthens their capability to innovate and generate new products.

Relationship between R&D and Innovation Output

It has become evident that there is a positive influence of R&D activity on innovation output within an organisation, and specifically under the development of innovations in products. It assumes that as organizations make investment in R&D activities, it impacts their capability to engage in innovations of their products and services and customer relationship management (CRM) further enhances the impact (Heij *et al*., 2021). It is hypothesized that with the adoption of technology-based CRM systems and effective utilization, the output of innovation for the organizations increases—especially those related to developing new and innovation products. The combination of long term partnership, active R&D efforts, innovation output, and the use of technology-based CRM systems positively influences product innovation, going by the hypothesis. This indicates that innovation capacity is high when organizations form long-term relationships, invest in R&D activities, use technology-based CRM tools (Khan and Zaman 2023).

Framework

On the basis of the above discussed concepts and the theoretical discussion (in the sections precede), we have developed a model with nine direct, seven indirect, and three moderating hypotheses. The developed hypotheses are displayed in the Figure **1** conceptual framework.

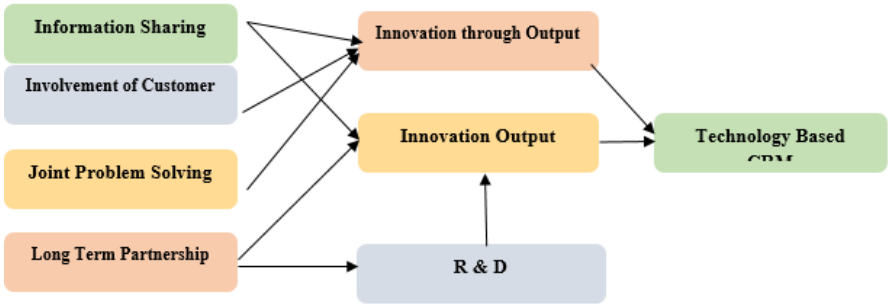

Figure 1. Conceptual Framework

Hypotheses

H1: *Sharing information has a positive effect on the speed of innovation.*

H2: *Communication with customers impacts innovation output positively.*

H3: *The speed of invention is positively impacted by collaborative problem-solving.*

H4: *The output of innovation is positively impacted by information sharing.*

H5: *The output of innovation is positively impacted by long-term partnerships.*

H6: *Technology-based CRM has a positive impact on innovation output.*

H7: *Technology-based CRM has a positive impact on innovation thorough output.*

H8: *R&D has positive impact on innovation output*

H9: *joint problem solving has positive impact on R&D*

3. METHODOLOGY

Research Design

A quantitative study design was used to investigate how customer relationship management (CRM) affects product innovation.

Sampling Design

The primary technique employed in the study for the data collection of 102 was survey questionnaires. The organizations were selected as a representative sample of the target demographic characteristics. The target audience included certain industries, sectors, or geographic regions. Cluster sampling technique was employed to ensure diverse representation.

Instrument of Data Collection

Based on the research's goals and pertinent academic studies on CRM and innovation, a structured questionnaire was created. Measurement of CRM practices, innovation output, and other pertinent factors was covered in the questionnaire. To collect both quantitative and qualitative data, the questionnaire comprised of Likert scale items, multiple-choice questions, and open-ended questions. A pilot test was carried out with a small sample before the questionnaire was made available to determine its clarity, applicability, and reliability. The questionnaire was improved, and its validity was ensured, using feedback from the pilot test participants.

Procedure of Data Collection

The survey conducted comprised 24 close-ended questions pertaining to the independent variables (IV), along with an additional 4 questions concerning the dependent variables (DV), totaling 28 questions. These inquiries

focused on the impact of celebrity endorsements on consumer perceptions and behaviors within the textile industry. Participants included individuals employed within the textile sector, familiar with the nuances of their field. The survey was administered online, and data collection took approximately three (3) to four (4) weeks.

Depending on the accessibility and convenience of the participants, the questionnaires were delivered to the chosen organizations in person or online. 25.5% of the 102 responders were women, while 74.5% were men. In terms of age, we discovered that 52% of respondents are between the ages of 35 and 40, 11.8% of respondents are between the ages of 30 and 35, and 24.5% of respondents are between the ages of 20 and 25. 20.6% of respondents were under graduates while 56.9% were pursuing bachelor's degrees, 19.6% were pursuing master's degrees, and 3.9% were pursuing other degrees.

Statistical Technique

Structural Equational Modeling technique was employed to extract facts and figures from the project.

4. RESULTS AND FINDINGS

Results of the current study were analyzed through Structure Equation Modeling using AMOS. Model is presented in the Figure **2**.

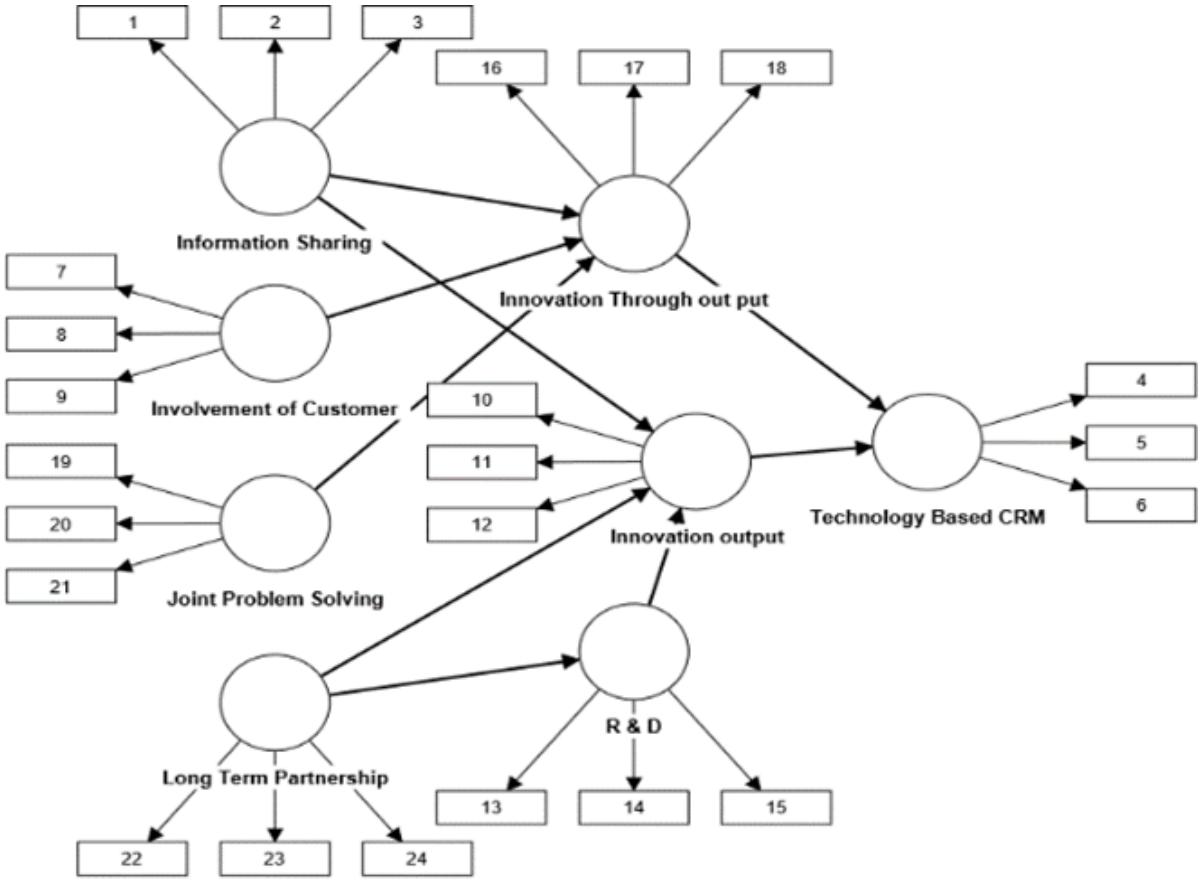

Figure 2. Path Model of the Study

Model was evaluated in two steps. In the first step, reliability and construct validity were examined. Results are presented in Table **1**.

Table 1. Reliability and Construct Validity of the Study Variables.

	Items	Loadings	Cronbach's alpha	Composite reliability (rho_c)	(AVE)
Information Sharing	1	0.836	0.744	0.856	0.666
	2	0.889			
	3	0.716			
Innovation Through Output	16	0.846	0.805	0.885	0.719
	17	0.839			
	18	0.860			
Innovation Output	10	0.820	0.779	0.872	0.695
	11	0.884			
	12	0.793			
Involvement of Customer	7	0.856	0.730	0.849	0.653
	8	0.833			
	9	0.728			
Joint Problem Solving	19	0.892	0.860	0.915	0.781
	20	0.892			
	21	0.868			
Long Term Partnership	22	0.864	0.781	0.872	0.694
	23	0.839			
	24	0.796			
R & D	13	0.813	0.765	0.865	0.681
	14	0.817			
	15	0.845			
Technology Based CRM	4	0.842	0.770	0.867	0.685
	5	0.790			
	6	0.850			
Information Sharing	1	0.836	0.744	0.856	0.666
	2	0.889			
	3	0.716			
Innovation Throughout put	16	0.846	0.805	0.885	0.719
	17	0.839			
	18	0.860			
Innovation output	10	0.820	0.779	0.872	0.695
	11	0.884			
	12	0.793			
Involvement of Customer	7	0.856	0.730	0.849	0.653
	8	0.833			
	9	0.728			
Joint Problem Solving	19	0.892	0.860	0.915	0.781
	20	0.892			

	Items	Loadings	Cronbach's alpha	Composite reliability (rho_c)	(AVE)
	21	0.868			
Long Term Partnership	22	0.864	0.781	0.872	0.694
	23	0.839			
	24	0.796			
R & D	13	0.813	0.765	0.865	0.681
	14	0.817			
	15	0.845			
Technology Based CRM	4	0.842	0.770	0.867	0.685
	5	0.790			
	6	0.850			

It can be noticed that reliability of all the variables is greater than 0.7, outer loading values are higher than 0.7. The value of AVE is also greater than 0.5. All these results indicate that our study variables are highly reliable and valid.

5. HYPOYHESIS RESULTS DETAILED ANALYSIS

After establishing the psychometric properties of the variables, detailed analysis was performed for hypothesis testing path analysis of the study hypotheses is presented in Figure **3**.

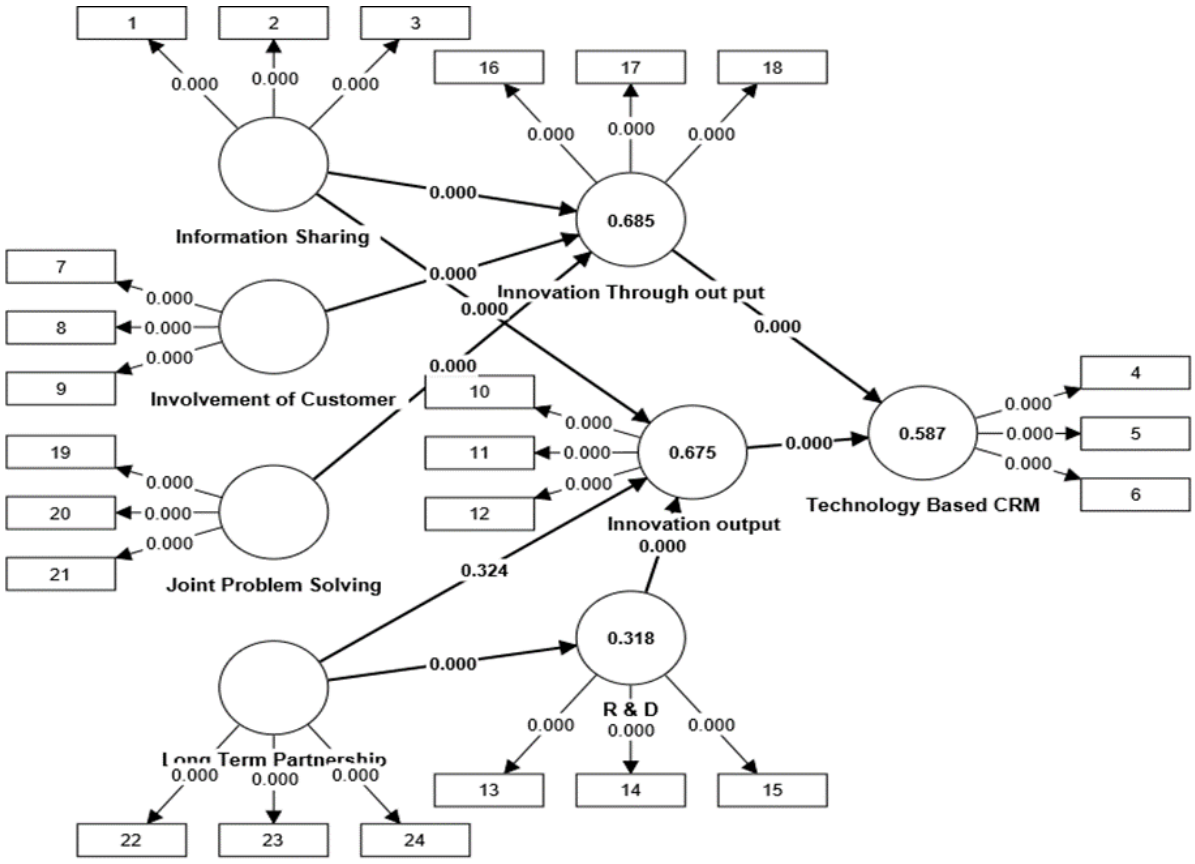

Figure 3. Path Analysis of the Study Hypotheses

Table 2. Path Analysis of the Hypothesis Testing.

	BETA (β)	Standard deviation (STDEV)	t Statistics	p values	Results
Information Sharing -> Innovation Throughout put	0.239	0.041	5.830	0.000	Accepted
Information Sharing -> Innovation output	0.373	0.047	7.953	0.000	Accepted
Innovation Throughout put -> Technology Based CRM	0.187	0.049	3.822	0.000	Accepted
Innovation output -> Technology Based CRM	0.623	0.044	14.121	0.000	Accepted
Involvement of Customer -> Innovation Throughout put	0.340	0.049	6.842	0.000	Accepted
Information Sharing -> Innovation output -> Technology Based CRM	0.232	0.035	6.678	0.000	Accepted
Long Term Partnership -> Innovation output -> Technology Based CRM	0.027	0.027	1.006	0.315	Rejected
Long Term Partnership -> R & D -> Innovation output -> Technology Based CRM	0.172	0.025	6.973	0.000	Accepted
R & D -> Innovation output -> Technology Based CRM	0.304	0.041	7.505	0.000	Accepted
Involvement of Customer -> Innovation Throughout put -> Technology Based CRM	0.063	0.018	3.528	0.000	Accepted
Long Term Partnership -> R & D -> Innovation output	0.276	0.034	8.152	0.000	Accepted
Joint Problem Solving -> Innovation Throughout put -> Technology Based CRM	0.066	0.019	3.590	0.000	Accepted
Information Sharing -> Innovation Throughout put -> Technology Based CRM	0.046	0.017	2.647	0.008	Accepted
Joint Problem Solving -> Innovation Throughout put	0.354	0.054	6.572	0.000	Accepted
Long Term Partnership -> Innovation output	0.044	0.045	0.987	0.324	Rejected

The statistical results were as expected by the authors, however as the results demonstrated in Table **2**, long-term partnerships and technology-based CRM do not appear to have a strong emphasis or to

be particularly concerned with having a good impact on innovation output from the survey respondents. Customers' participation and information sharing will aid the business in identifying signs regarding new advancements. (Jamil, Khan *et al*. 2023) The study performed by Lin (2004) in Taiwan on the manufacturers of computers on CRM and innovations gave some support for the Results; it also revealed varying degrees of influence on the creativity. In general, it was discovered that businesses can enhance their innovation through CRM ad hoc relationships between customer participation in the innovation process and management of innovative strategy. However, their long-term partnerships are negligible, and CRM-based technology has a positive impact on all types of innovation. It was concluded from the statistical data that not all CRM actions increase the throughput of innovation. Since any company's plan to stand out from rivals in the eyes of customers is a long-term collaboration and technology-based CRM. Although some low-cost businesses still rely less on CRM to differentiate themselves from the competition, they believe it is not necessary to spend in CRM technology-based process management and efficient customer experience research. Companies are increasingly realizing that CRM is a long-term investment with effective rewards from lifetime relationships with customers (Mabzor *et al*., 2023).

6. DISCUSSION, CONCLUSION, POLICY RECOMMENDATIONS

Discussion

From the standpoint of operations, Butler (2004) noted that CRM is an integrated business process and technology adopted to satisfy the needs of a client in any context. The results of CRM operations must be carefully monitored even though the potential rewards are alluring. Businesses should be involved in the development of CRM systems and its activities, as well as have management expectations, in order to succeed. Along with technology, business procedures also need to be modified. Additionally, it should raise concerns for management and researchers and developers as a result of technology-based CRM activities. Innovation throughput indicates that more effective organizations are emerging, many of which are recent entrants in markets with quickly expanding technology, particularly those that produce and use information.

Joint issue solving is identified as the most important contributor to innovation throughput due to its high coefficient (0.521) and low P-value (0.000). When businesses and consumers work together to solve issues and divide duties under challenging or unexpected circumstances, this is referred to as joint problem solving (McEvily and Marcus, 2005). These hypotheses are strongly supported because their P-values from the statistical model running are all less than 0.05:

- Innovation output is positively impacted by information sharing.
- Innovation output is positively impacted by long-term partnerships.

All of these hypotheses have P-values from the running statistical model that are less than 0.05, indicating that they are strongly supported:

- Sharing information has a positive effect on the rate of innovation.
- Customer interaction affects innovation output favorably.
- The rate of invention is positively impacted by collaborative problem-solving.

Building, maintaining, and enhancing long-term and mutually beneficial connections with its target customers is essential for a business to maximize its long-term success in terms of customer happiness, trust, return on sales, and return on investment (Sin *et al*., 2005). Additionally, manufacturers are better able to maintain close relationships with their customers based on mutual trust and understanding. As a result, they are more likely

to accurately identify customer demands and offer a suitable pricing structure, promotional activities, and retailing and marketing strategies (Lin & Germain, 2004).

Innovation strategy was favored by the vast majority of survey respondents 68% of respondents think that they can produce more innovation by working and sharing information more closely with outside partners in R & D. Additionally, almost 46% of respondents said it makes sense to share innovation ideas with the open-source community.

The corporation will be able to enhance the number of close contact points by forging more multiplex connections with specific clients or by pursuing cooperation and expanding partnership in research and development

Even while businesses have a history of investing in R&D and concentrating on their technology, some respondents to the authors' survey agreed that this is the best approach to safeguard and reap the financial rewards of innovation. They do, however, contend that in the rapidly evolving and information-rich environment of today, management of the company needs to be aware that this approach to innovation would be tentatively replaced by a more open approach to innovation, with the innovative ideas potentially coming from the flows of information sharing from both inside and outside the company.

Conclusion

We may now suggest a response in light of our findings to the question we posed earlier: "What CRM processes result in innovative outcomes?" We first examined a variety of competing models that predicted distinct innovative results in an innovation process. Although these procedures must be well-organized and planned, we find that they are valid. Every process follows its own logic. But first, CRM is a well-liked idea in the debate over how to increase a company's innovativeness and so strengthen its core competency. Prior research, however, did not link CRM activities to the creative process. The impact of the five most popular CRM actions on the four stages of the innovation process is proposed and tested in this study. According to the statistical findings, not all CRM activities contribute to every stage of the innovation process. Companies may think about matching some stages of the innovation process with their CRM operations.

Sharing of information specifically has a positive impact on the production and throughput stages of innovation. Participating customers and working together to solve problems have a big impact on how quickly innovations are produced. Long-term partnerships help produce innovative ideas. Contrarily, it has not been demonstrated that technology-based CRM plays any part in any stage of the innovation process

Limitations and Future Recommendations

There is no denying that customer relationship management (CRM) has had a significant impact on product innovations, but it is not without its drawbacks. One drawback is the potential overreliance on consumer opinions and feedback, which could result in a narrow focus on incremental rather than game-changing innovations. Furthermore, CRM systems frequently have trouble capturing the requirements and preferences of non-customers or potential clients who have not yet interacted with the brand. The investigation of new markets and customer segments is hampered by this restriction. Furthermore, poor data quality or a lack of integration with other organizational systems can undermine the ability of CRM to spur product innovations. Several future suggestions can be made to get around these restrictions and improve the influence of CRM on product innovations. To get a more complete picture of the market landscape, businesses should combine customer feedback with data from other sources of market intelligence, such as trend analysis, competitor research, and user behavior data. Companies will be able to spot new needs and potential openings for disruptive innovations with the help of this broader perspective. In order to improve data quality and system integration, organizations should spend money on advanced data analytics and machine learning capabilities.

Better segmentation and personalization will be possible as a result, enabling businesses to successfully tailor new product innovations to particular customer groups. Another suggestion is to use social media and online communities to extend CRM initiatives beyond current clients. Engaging non-customers and learning from them can yield insightful inputs for the creation of innovative products. Companies should also promote a culture of experimentation and risk-taking that encourages workers to come up with and test new ideas. Through specialized innovation programmers, cross-functional cooperation, and innovation incentives, this can be accomplished. To facilitate a seamless exchange of insights and ideas, organizations should set up systems for ongoing feedback loops between CRM and product development teams. Companies can use CRM to its fullest advantage by addressing these restrictions and putting these future suggestions into practice, leading to more significant and customer-centric product innovations that satisfy the changing needs and preferences of the market.

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