



Influence of Product Innovation Strategy on Performance of Large Manufacturing Firms in China

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Abstract

Product innovation is a business growth strategy that aims to create new value by improving existing products and developing new ones. Thus, the study sought to examine the influence of product innovation strategy on the performance of large manufacturing firms in China. The study used a descriptive research design. The targeted population included selected large manufacturing firms in Beijing. The observation unit entailed the managers and those employees in the middle management level, such as supervisors. The collection of the data was done using the questionnaires. The study findings showed that product innovation strategy is positively and significantly related to performance ($\beta=0.684$, $p=0.004$). It was found that product innovation strategy explains 15.74% of the variations in the performance of manufacturing firms in China. The research concluded a positive relationship exists between product innovation strategy and performance. In ensuring product innovation, the firm enhances the quality of manufacturing in the elements of the existing products. The company likewise develops fresh items with components that vary completely from the existing ones. The study recommended that firms develop an environment that cultivates product innovation. Companies should continually encourage product innovation as this technique provides a framework for developing new products or improving existing items' performance, cost or quality. Manufacturing firms need to execute policies that urge a process innovation culture. Firms devoted to constant innovation and change need to establish a set of standards and processes. The aspect of product innovation should be put as one of the enabling strategies that could drive the performance of the companies and increase their competitive advantage, thus higher performance.

Keywords: *Product innovation strategy, performance, large manufacturing firms, China*

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1.0 Introduction

Ann innovation approach ought to be consistent with a firm's mission, vision, goals and approaches (Kaletnik & Lutkovska, 2020). Firms must invest in research and development, manufacture innovative items, and attain significant performance to be competitive. Innovation includes acting on the creative concepts to make some specific and tangible difference in the domain in which the innovation happens. Innovation is defined as the successful application of creative concepts within a company. The ability to innovate is evermore deemed the single most key factor in creating and supporting competitive advantage. According to Santos, Afonseca, Lopes, Félix and Murmura (2018), innovation is an important ingredient for sustained success and is an indispensable part of the business. Much effort has been put into building innovative institutions and monitoring their advancement progression as essential components of institutional survival.

Sabahi and Parast (2020) reported that innovation is the essential component of entrepreneurial activities that are considerably connected to manufacturing firms. Innovation is regarded as a significant aspect of enhanced competitiveness and productivity. It is amongst the core practices that underpin a firm's competition and survival in a globally competitive setting. A firm can compete effectively where it generates a long-lasting and specific distinguishing element and innovation has a tendency to be among the significant means whereby firms can develop the distinguishing aspect. In the business context, innovation is often considered as the grounds for tactical adjustment through which businesses have room for obtaining and maintaining a competitive edge (Kang & Na, 2020). Product innovation is introducing a new or significantly improved product concerning its characteristics or intended uses (Gault, 2018). These involve considerable improvements in technical specifications, components and materials, incorporated software, user-friendliness or other functional qualities. The innovation process consists of a set of activities which improve the capacity to produce new products or implement new types of manufacturing.

Innovation of a product links modern technology and customer competencies (Melander, 2018). Innovation of an item alludes to the meaningfulness and novelty of fresh items presented in the market on time. It deals with presenting fresh or significantly improved services or products to the market. Xie, Huo and Zou (2019) identified innovation of a product as the constant introduction of beneficial, significantly improved existing items or completely fresh products. Comprehending the relation between innovation approaches and performance in firms is relevant for numerous scholars, decision-makers and executives of large businesses worldwide. The primary basis is that firms need to be urged to innovate, leading to better economic performance, improved growth, sales, more job opportunities and higher salaries. Innovativeness is among the basic instruments of growth to enter new markets, increase the existing market share and provide the business with a competitive edge (Hevner & Gregor, 2020). Firms devoted to constant innovation and change need to establish a set of standards and processes. Product innovation is a business growth strategy that aims to create new value by improving existing products and developing new ones.

The innovation approach describes the work of innovation and invention and provides the direction for the many innovation implementations; nevertheless, the role of innovation in aiding firms achieve goals about development is commonly not clear and the revenue growth from innovation is not adequate; other than when handled with great precision (Gupta, 2018). Innovations provide companies with strategic direction to get over the challenges they experience while trying to

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achieve a justifiable competitive advantage. Firms compete effectively when they provide new, better, and less costly products or services, which their clients can use to their advantage, and that their rivals cannot provide. Competitive advantage derives from the ability to make and do things more inexpensively and better or make and do new things (Syapsan, 2019). According to some scholars, competitive advantage has two dimensions. To start with, it has a relative dimension, in which advantage is discovered in the activities of companies contrasted to their rivals. Secondly, competitive advantage likewise has an absolute dimension. In this case, there should be a market for what the company does.

Liu and Atuahene-Gima (2018) said that in a present global and dynamic competitive environment, product innovation is becoming increasingly pertinent because of three main issues: extreme global competition, fragmented and demanding markets, and diverse and quickly altering modern technologies. Firms that offer goods that are adjusted to the demands and want of target clients and market them faster and more efficiently than their rivals are in a better position to develop a sustainable competitive advantage. Competitive advantage is significantly derived from knowledge, technological skills, and experience in developing new products (Distanont & Khongmalai, 2020). At the worldwide level, innovation techniques have been accorded a core emphasis. Firms and states that innovate regularly contribute to the economy's development. In China, he uncovered that the demand of clients, market patterns, the vision and the objective of a firm were the significant factors that influenced the use of practices for technology.

To measure the performance of a firm, the financial ways and non-financial ways can be used. Many firms mostly like using financial approaches to measuring performance (Ferreira, Coelho & Moutinho, 2020). It provides the firm with essential information regarding what's currently happening and helps implement development techniques. The average rate for occupancy each year, net profit after tax, return on investment and return on assets are frequently used techniques for determining a firm's performance. Nonetheless, other measures utilized in performance measurement involve competitive status, the share of the market, satisfaction of stakeholders, development, productivity and profitability. Additionally, some researchers have recommended signs like having the capacity to incorporate non-financial measurements towards meeting ecological changes at the external and internal. The company needs to develop fresh items with components that vary completely from the existing ones. Companies should continually encourage product innovation as this technique provides a framework for developing new products or improving existing items' performance, cost or quality. The aspect of product innovation should be put as one of the enabling strategies that could drive the performance of the companies and increase their competitive advantage, thus higher performance. Firms devoted to constant innovation and change need to establish a set of standards and processes.

2.0 Literature Review

Björkdahl (2020) discovered a positive association between product innovation strategy, process technology, promotion technology, pricing strategy, and performance. Consequently, manufacturing companies must continually welcome the product innovation approach as this strategy gives a framework for producing new products or improving performance. Manufacturing firms are required to apply policies that motivate a process innovation culture. Players in the manufacturing sector need to encourage promotion strategies continuously. This is based on the evidence that advertising innovation approaches assisted manufacturers in using the skills of their

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workers and stakeholders, specifically in creating creative strategies for sales and client service. Players in the manufacturing sector in the UK must continually embrace pricing innovation techniques as these strategies were discovered to influence sales performance positively. The research concludes there exists a positive relationship between product innovation strategy and performance. In ensuring product innovation, the firm enhances the quality of manufacturing in the elements of the existing products. Firms ought to develop an environment that cultivates product innovation. The study recommended that companies continually encourage product innovation as this technique provides a framework for developing new products or improving the performance, cost or quality of existing items. Manufacturing firms need to execute policies that urge a process innovation culture.

Shu, Zhou, Xiao and Gao (2016) conducted a study to determine the impact of product innovation methods on the performance of new technology enterprises in China. The study discovered that the innovation-performance link was contingent on ecological aspects involving environmental disturbance and institutional assistance and the association-based methods of the enterprises, like strategic alliances for product development and political networking. The findings suggest the requirement for simultaneous consideration of the environment and association-based method variables as moderators in the discourse on product innovation approach among innovation endeavors. Khan and Naeem (2018) checked out the effect of product innovation strategy on the performance of the cement manufacturing companies in Pakistan. It embraced a detailed study design. The target population was the department heads of all the cement companies in Pakistan. All the 79 department heads took part in the study. The reaction rate was 74%. Key information was accumulated with closed-ended questionnaires. A set of questions credibility was ensured while reliability was established, using Cronbach's Alpha. Descriptive data; frequencies, percentages and means were utilized. Firms devoted to constant innovation and change need to establish a set of standards and processes. Product innovation is a business growth strategy that aims to create new value by improving existing products and developing new ones.

Hajar, Ibrahim, Darun and Al-Sharafi (2020) noted that a firm that is completing in rapid transforming markets with quick-changing modern technology should make things happen, it must innovate. If it does not innovate, it risks being overtaken by rivals. In Some instances, firms ignore the competitive obstacles it encounters. The risk of this occurring is high when rivals respond to potential obstacles similarly. The study examined the impact of the product innovation approach on the performance of cellphone service firms in Malaysia. The study embraced cross-sectional research via a census of the four phone firms running in Malaysia. Key data was accumulated utilizing a data gathering sheet carried out to the financing managers of the mobile firms. The data utilized for evaluation were the return on assets (ROA), the percent revenue gotten from calls, the percentage profits created from SMS, the percent revenue produced from mobile cash transfers and the percentage revenue created from data or net. The data covered the duration of six years, from 2011 to 2017. Three out of four firms in Malaysia effectively took part in the research providing a feedback rate of 80%. Regression evaluation was executed on the quantitative information gathered, with tables utilized to summarize the findings and assist in comparison. Moreover, inferential statistics, correlation and regression analysis were utilized to examine the partnership between variables. The relationship findings showed a substantial favourable association between product innovation and the performance of the cement firms in Pakistan. The research concluded that product innovation has a positive and substantial effect on the performance

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of cement firms in Pakistan. Outcomes have implications for technical requirements of products, product research and development, customer-centric product features, and improvement of the existing items in all the cement manufacturing firms in Pakistan.

Udriyah, Tham and Azam (2019) researched the impact of innovation methods on company performance. The research was carried out on manufacturing companies in İstanbul in Turkey. Factor evaluations and multiple regression analyses were performed on the information filled by surveys. The innovation strategy discusses financial performance more than various other measurements of company performance. It can be concluded that the innovative approach of Turkish manufacturing companies leads them to increase their financial performance. Also, the innovation technique leads these companies to enhance their consumer performance; internal organization processes performance and learning and development performance. The regression outcomes revealed that all mobile businesses recorded a positive connection between ROA and revenue created from phone calls and mobile internet. In contrast, all the firms produced an unfavorable connection between ROA and profits generated from SMS. Regarding revenue from mobile cash transfers, they indicate a positive coefficient on one out of three firms used for the research. All the firms had negative constant terms. The favourable connection between ROA, earnings from calls and mobile net suggested that when revenue improves, so does the return on assets. The research concluded that firms had used different product innovations. Some of them are phone calls, SMS, mobile money transfers and mobile internet. Moreover, the product innovation approach has resulted in the increased financial performance of mobile firms in Malaysia.

A study by Kim, Park and Paik (2019) discovered that in most firms, effective new product innovations are drivers of growth. Product innovation is the outcome of bringing to life a new method to resolve consumer issues. To remain pertinent, banks have experienced continuous re-modification, re-invention and re-introduction of product propositions to fulfil clients changing requirements. The purpose of the research was to establish the impact of product innovation on the performance of financial institutions in South Korea. The research adopted a cross-sectional study style technique. The study population comprised fifty banks accredited by the Central Bank of South Korea in 2016. All the banks were involved in the research, with the participants being the general managers. The findings showed interaction of product innovation with staff was great, with the majority concurring that product innovation impacted organization efficiency. Cooper's (2019) research explores the partnership between product innovation techniques and new product success for N = 211 Australian firms. Ten different sorts of methods were determined. Surprisingly, the various strategies had comparable levels of reported success, recommending that firms adapt their product innovation techniques to enable market and industry conditions. In general, nonetheless, the best-performing method showed to contain technical fit, attention to client demands, and aggressive marketing.

Hutahayan (2020) studied modern Taiwanese companies, using path analysis to check out the impacts of managerial accounting information systems (MAIS) on the connection between product innovation and business performance. Two of the significant characteristics recommended by Chenhall and Morris (1986), wide scope and timeliness, are systematically associated with the topic of the research, therefore, employing these two characteristics to discover the relationship between MAIS and product innovation and business performance. We discover that product

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innovation has a positive effect on organizational performance via MAIS and discover that this positive effect is more considerable in business environments that note high levels of unpredictability. The research proves whether product innovation needs extra extensive use of MAIS in very unpredictable settings and whether MAIS can improve business performance. The findings additionally assist practising supervisors realize the significance of MAIS in contemporary organizations and the advantages of employing MAIS to the company. Lastly, we advise supervisors engaging in product innovation techniques to position relevance on making use of MAIS since traditional cost control systems no longer assist in solving the challenges specific to the existing, modern-day business setting. Innovation is defined as the successful application of creative concepts within a company. Innovation is the most essential component of entrepreneurial activities that is considerably connected to the manufacturing firms. Innovation of a product as the constant introduction of beneficial, significantly improved existing products or completely fresh products. Innovations provides companies strategic direction to get over the challenges they experience while trying to achieve justifiable competitive advantage. Innovation techniques have been accorded a core emphasis.

3.0 Research Methodology

The study used a descriptive research design. The targeted population included selected large manufacturing firms in Beijing. The observation unit entailed the managers and those employees in the middle management level, such as supervisors. The collection of the data was done using the questionnaires. The analysis of the data was done using descriptive and inferential statistics.

4.0 Research Findings

The research findings were presented in sections as presented below.

4.1 Correlation Analysis

The correlation results show the association between the variables. The study results of the correlation analysis are summarized in Table 1

Table 1: Correlation Analysis

		Performance	Product Innovation
Performance	Pearson Correlation	1.000	
	Sig. (2-tailed)		
Product Innovation	Pearson Correlation	.462 **	
	Sig. (2-tailed)	0.000	0.000

The correlation results from Table 1 indicate that the product innovation strategy is positively and significantly associated with performance ($r=.462$, $p=.000$). The study results imply that product innovation and performance move in the same direction. The advancement in product innovation will increase performance significantly. The study results concur with Udriyah, Tham and Azam

(2019), who reported that the innovation strategy in manufacturing companies leads them to increase their performance.

4.2 Regression Analysis

The section consisted of model fitness, analysis of variance and regression of coefficient. The results presented in Table 2 show the model fitness

Table 2: Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.216a	0.1574	0.1315	0.000078

The results from Table 2 depict that the product innovation strategy was found to be satisfactory in explaining the performance of large manufacturing firms in China. This was supported by the coefficient of determination, also known as the R square of 0.1574. This implied that product innovation strategy explains 15.74% of the variations in the performance of manufacturing firms in China.

Table 3: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.12	1	11.12	140.76	.000b
	Residual	14.68	186	0.079		
	Total	25.91	187			

The results in Table 3 show that the overall model was statistically significant. The results indicate that product innovation strategy is good predictor in explaining the performance in China. This was supported by an F statistic of 140.76 and the reported p-value of 0.000 which was less than the conventional probability significance level of 0.05.

Table 4: Regression of Coefficient

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.457	0.895		9.858	0.078
Product innovation strategy	0.684	0.325	0.112	3.897	0.004

According to the results presented in Table 4, it was discovered that product innovation strategy is positively and significantly related to performance ($\beta=0.684$, $p=0.004$). This was supported by a calculated t-statistic of 3.897, which is larger than the critical t-statistic of 1.96. The results revealed that when the product innovation strategy improves by one unit, the performance will increase by 0.684 units while holding other factors constant. Björkdahl (2020) articulated that manufacturing firms must apply policies that motivate the process of product innovation culture. Players in the manufacturing sector need to encourage product innovation strategies continuously. Players in the manufacturing sector in China must continually embrace innovation techniques as these strategies were discovered to influence performance positively.

5.0 Conclusions and Recommendations

The research concludes there exists a positive relationship between product innovation strategy and performance. In ensuring product innovation, the firm enhances the quality of manufacturing in the elements of the existing products. The company likewise develops fresh items with components that vary completely from the existing ones. Product innovation strategy explains 15.74% of the variations in the performance of manufacturing firms in China. Firms ought to develop an environment that cultivates product innovation. The study recommended that companies continually encourage product innovation as this technique provides a framework for developing new products or improving the performance, cost or quality of existing items. Manufacturing firms need to execute policies that urge a process innovation culture. Firms devoted to constant innovation and change need to establish a set of standards and processes. Product innovation is a business growth strategy that aims to create new value by improving existing products and developing new ones.

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