



International Journal of Business Analytics and Security

Volume.1, Issue.1, 2022

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EDITORIAL

The editorial board of **IJ-BAS** are pleased to introduce the first issue of the first volume to 2022 year of the “International Journal of Business Analytics and Security” (IJBAS). The IJBAS is published by **GAF-TIM**, the Global Academic Forum on Technology, Innovation and Management.

The International Journal of Business Analytics and Security (IJBAS) focuses on how knowledge is acquired through innovation and how new categories of business management and techniques are stimulated by knowledge. Theory and knowledge can only be produced by long-lasting innovations and technology for the business management that can be used broadly across various domains. IJBAS seeks submissions on various categories that enhance knowledge quality or that can be utilized to expand knowledge. IJBAS has a main focus on all subjects relevant to general business management, and emphasizes on various domains such as modern developments in business analytics and the safety and security issues for data management. In order to advance best practices in society, IJBAS papers examine knowledge-related changes that bring about or stimulate business trends. IJBAS welcomes submissions from academics, researchers, and scholars to gather the multiple knowledge resource in the business world to develop the next generation of technological business practitioners and academics.

The inaugural of issue1, volume1, of IJBAS includes ten articles. In this issue, the opening with just in time and push supply chain strategies impact on supply chain performance. Moreover, it discusses over green supply chain practices and e supply chain in achieving competitive advantage. More emphasis on just in time strategy and pull chain strategy on supply chain performance. Another stress given to pull supply chain strategy and just in case on supply chain performance. While highlighting push supply chain strategy and just in case on supply chain performance. On the other hand, a demonstration over information technologies capabilities and information system capabilities on BPM. Also, change management and communication on business process management. Area of process redesign and agile operations on improving the quality in the service companies has been discussed. Then supply chain capabilities and business process management on firm performance highlighted. Finally, business process management and lean operations on cost of quality has been discussed. Int. J. BAS appreciates all the support that it is receiving from its members as well as from its readers.

Editors-in-Chief

Prof. Haitham M. Alzoubi and Dr. Taher M. Ghazal

IMPACT OF JUST IN TIME AND PUSH SUPPLY CHAIN STRATEGIES ON SUPPLY CHAIN PERFORMANCE: A SYSTEMATIC REVIEW

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ABSTRACT

The distinctive qualities of a supply chain strategy demonstrate the value of considering the push and JIC strategy controversy in supply chain. Supply chains typically determine when things are manufactured, delivered to storage facilities and warehouses, and then delivered to retail establishments or shipped directly to customers. In the traditional sense, supply chains have been concentrated on utilising the enormous database of past data for forecasting future seasonal changes. This research is based on the just in case and push supply chain strategies impact on supply chain performance by exploring prior literatur. The main component of the research signifies the strategies implementation within an organization to enhance the SC performance.

Keywords: *Just in Case, Push Strategy, Supply Chain Performance.*

1. INTRODUCTION

Emerging constraints in the global supply chain were exposed by recent calamites, particularly the pandemic. Businesses struggle to find new suppliers when entire regions must shut down for weeks or months at a time [1], [2]. Other local suppliers might not satisfy manufacturer standards or be unable to accept new clients, and the essential foundation for a backup connection might not exist [3]–[5]. Nobody referred to the model as a "Just-in-case" & "Push strategy" until the 1960s [6]. It was simply the only inventory method manufacturers had ever employed [7], [8]. Before starting a production run, manufacturers ordered more materials than they need, and they produced more goods

than they anticipated to sell [9]. Costly shipping, lead times, and uncertain delivery integrity were all factors [10]–[12]. It made sense to reduce the possibility of unforeseen demand surges or supplier failure. Safety stock is given top priority in a just-in-case (JIC) inventory management plan to reduce the risk of supply chain disruptions or spikes in the price of a raw material or in customer demand for a product [13], [14]. However, in a explosive political and economic environment, these tactics come with inherent risks. The entire supply chain must go through a complete risk assessment and reassessment based on the present situation [15]. The supply-chain system needs to be regularly rebalanced when new facts and dangers are found because of how quickly these conditions might change [16]–[20]. Finding creative ways to leverage information networks to reduce risk is a critical and inventive part of business continuity planning [21]. Therefore, two supply chain strategies based research is conducted to enhance the knowledge and practices in order to increase the supply chain performance.

1.1.Problem Statement

In a volatile economy where speed and flexibility are essential for survival, resilience in meeting customer demand is essential. Many organizations have invested decades trying to make just-in-time supply chains operate efficiently [22]. However, there are inherent dangers associated with these ultra-lean techniques in a volatile political and economic environment. Additionally, because of how quickly these conditions can change, the supply-chain system needs to be continuously rebalanced when new facts and hazards are discovered [23]–[25]. A crucial and novel element of business continuity planning is finding innovative ways to use information networks to reduce risk [26]. For the purpose to find the smart way to improve supply chain performance, just-in-case and push supply chain strategy are aimed to explore in this research to introduce productive outcomes.

2. THEORETICAL FRAMEWORK

2.1. Push Supply Chain Strategy

The global business industry in which all small and big business organizations rely on the strategy of the supply chain that provide the understanding of the frequent operations of the business goals[27]–[29]. Supply chain is a process of transformation in which from raw material to create the product or item and shifted then in consumer hands [30], [31]. In supply chain strategy the push strategy is describe the actual demand of the consumers in which suppliers meet the needs and requirements of the customers as according to they want [32]. For example, if the automotive production manager get an order to manufacture customized car, he always consults with his clients

before made any thing and discuss all needs and specifications what customers asking to purchase and then it goes for production end [33], [34]. The push strategy of the supply chain giving an advantage to the business owners in which they invest their capital in production when they have confirmed customer for their product sale [35].

2.2. Just in Case

Just in case is a strategy of supply chain management in which companies makes finished goods in advance in exceeded quantities than the expected demand [36], [37]. The just in case is a traditional model of production material that companies already made products for future forecast of the demand of the customers at any time [38]. The model also explains that just in case supply chain create more stock for the future demands and make sure that the products are sufficient in inventory stock [39], [40]. The similar rule of the supply chain is just in time that is also working parallel at the just in case. The just in time is a model of supply chain in which companies stock the raw material and goods and make them at the time of the customer orders and build in according to its requirement and sell them efficiently [41], [42]. The just in case strategy of the supply chain in retail industry uses in maintaining of the large inventories in order to reduce the risk of uncertain situations of the demand at any time. In this case companies already make the product inventories for quick response of the customers but on other hand the just in case strategy is quite uncertain in many cases [43]–[45]. Most of the time the just in case strategy that create the sufficient product inventories in ware house but it is also a risk-taking method in which most of the time the demand of the market has change with the passage of time [46]. The suppliers efficiently tried to sold their build- in martial but they facing difficulties because they made stock in greater quantities but the demand in market has been decreased.

2.3. Supply Chain Performance

Supply chain performance is an activity that are held in the supply chain management functions and operations and that is defining the business activities that are related to manufacturing selling the goods and services to the customers finally [47], [48] . The supply chain performance is the last objective of the business in retail industry. The retail business industries in global business market rapidly growing and several business and investors are playing actively in retail industry [49]. The supply chain industry of the retail market in the world having opportunities because they are directly linked with consumers essentials and needs [50]–[52]. Supply chain performance thoroughly evaluate the need, demand, change of interest, cost variance and services among the consumers and developing strategic solution to be a part of the market and create its presence [53]–[57]. The successful supply chain performance of the businesses elaborating the strategic solutions of the managerial operations of the businesses [58]. It is projecting the company's strategy that they are taking to overcome the gaps and performing effective supply chain performance in retail needs [59]. Any business

profitability depending on the consumer's needs and supply chain performances. The supply chain management depending on the supply chain performance that describes the strategic evaluations and measures of the business solutions. There are number of factors are involved in supply chain management performance in retail industry in which employee's behavior towards related objective, role of managerial departments, suppliers' commitments and retailer performances [60]–[62]. These are associated factors that are linked with the performance of the supply chain in any industry and the relationship of the performance measures and management of the supply chain areas.

2.4.Operational Definitions

2.4.1. Push Supply Chain Strategy

Push strategy in supply chain management has such different policy in order to manufacture the product and it is also depending on the consumption of the customers. Push strategy estimated the demand of the customers according to their specific needs regarding the products [63]. There are number of factors that are depending in push supply chain strategy and it is only depending on the products that are few in markets or available on seasonal requirements [64]. The push demand driven strategy of the supply chain management has less brand loyalty rather the other products that are moving rapidly and in demand throughout the year for and meet the customers necessities at all level.

2.4.2. Just in case

Just in case is the term used when companies maintain large amount of inventories aiming that inventories will be sold out and will not be able to meet demands [65]. There are number of factors that are associated with just in case strategy in supply chain management because it is a risk effecting method in which supplier reliability, cost of production, ware houses capacity, storage fee, fuel cost, transportation and other unexpected consumer behavior that could be change at any time due to new product innovation in market [66]–[68]. In current business scenario, where every field of business and human life in hurry and no one assume to wait for anything and switching ultimately. In business management the rule is also applying in this way [69]–[72]. The business organizations are willing to meet the customer needs urgently and they expecting quick product deliveries from their suppliers if the suppliers are not able to provide the actual demand of the company then they automatically shifted to others because they want product on priority basis and just in case fulfill their requirement [73].

2.4.3. Supply Chain Performance

The effective and better supply chain performance create the efficient business profitability and services of the products that can make the good margins and helps to deliver best customer experiences [74]. The effective supply chain management can build the performance -based structure

that build the best supply chain trust with customers because you are providing on- time deliveries of the product with accuracy [75]. Today where every business unit of life is become more efficient and customers expecting quick delivery services from their retailers [76], the effective supply chain performance can make the possibility in all manners and provide orders on time at door step [14], [77], [78]. The supply chain performance directly related to the manufacturing of the products to the delivery to the customers [79], [80]. Through entire situation, the safe product delivery to the customers is the aim of the business parties [35], [81], [82]. Throughout this situation, the trust on retailers is one of the elements that could be possible with previous experiences related to supply chain performance from where they ordered [83]. Technology and digitalization is one of the key sources that enhance the efficiency of the supply chain performance in all industries and making the possibilities of the consumers' needs on immediate basis as per their orders [84]–[86]. The supply chain performance is the key success of the any business industry.

3. LITERATURE REVIEW

This research describe the relationship between push supply chain strategy and just in case in supply chain management. It is obvious that push supply chain strategy creates the efficiency of the suppliers manufacturing products according to the needs of the customers with specifications [87]–[89]. Just in case has its own strategic value in supply chain management. The just in case is a business model in which supplier made the products in bulk quantity in its stock and meet the customers requirements in immediate orders [90]. There are number of uncertainties are involved in this case, the pull supply chain strategy that is designed under the need of the customers with just in case that is already build in the stock has no coordination among them [91]–[93]. Market always demand frequent products that are running items and companies make them in advance in bulk but most of the time consumer needs are change in specific products [94]–[96] that could not meet the business model of the push supply chain strategy [97], [98]. The both factors are opposite to each other one is focusing on consumer specific needs while the other producing items in build without any specific features [99].

Push strategy has impact on supply chain performance as it provides grounds to predict the future and manage the supply chain accordingly [100]–[102]. The first variable the push supply chain strategy has relationship with the dependent variable that is supply chain performances [103]–[105]. The business industry focusing on all performance management measures that create the success and efficiency of the business through its supply chain management [106]. The supply chain performances describe the profitability and outcomes of the products in its operational areas [107], [108]. The efficient supply chain performance builds the all kind of supply chain models in which push strategy is included. The push strategy of the supply chain management increases the efficiency of the business

[109]–[111] that is focusing on the demand of the consumers with specific requirements [112]. The push strategy of the supply chain working effectively when supply chain performance meets all that criteria's that consumers expecting from their suppliers. The relationship between push supply chain strategy and supply chain performance parallel doing functions in business models [113]–[115]. Both independent and dependent variables effecting the performances of each other. The performance of the supply chain has impacts on all kind of the supply chain management operational areas that helps to provide the services in consumer's hands [116], [117].

Just in case and said to improve performance of supply chain. The relationship between second independent variable just in case and dependent variable supply chain performance has dependency to each other [118]–[120]. The just in case business model in supply chain management operations increased the production of the items and goods in manufacturing areas and make the huge quantity of the products in their stock [121]–[123]. The just in case model manufacturing the bulk of quantity to meet the customers requirement is immediate cases and making possibilities to happy their customers. The just in case only depending on the supply chain performances in which they need to roll in their products in market because there are number of risk factors are included with the just in case strategy [124]–[126]. The huge quantity of the products associated with many factors in which the storage cost, expiry of the products, fuel and transportation, suppliers demands and change of consumer behavior are linked [127]–[129]. These factors only can create the possibility to place in market when efficiency supply chain performance create the suitability and need of the goods in market [130]–[132]. The product availability everywhere in market that encourage to customers to buy easily is the outcome of the supply chain performance and management.

A relationship of how supply chain performance improved through applying the strategies of push and just in case [59], [133]. This research presenting the relationship of the both independent variables and dependent variable in which push supply chain strategy and just in case business model is only associated with the supply chain performance especially in retail industry [134]–[136]. The retail industry is one of the business sectors in the world that is the biggest cause of high GDP rate of the nation's economy [137], [138]. The push supply chain strategy focusing on the consumer's specific demands that are not applicable in just in case business model due to the difference in both strategies. Both stratifies working oppositely to each other but both business supply chain strategic models depending on supply chain performance of the business.

3.1 General Research Model

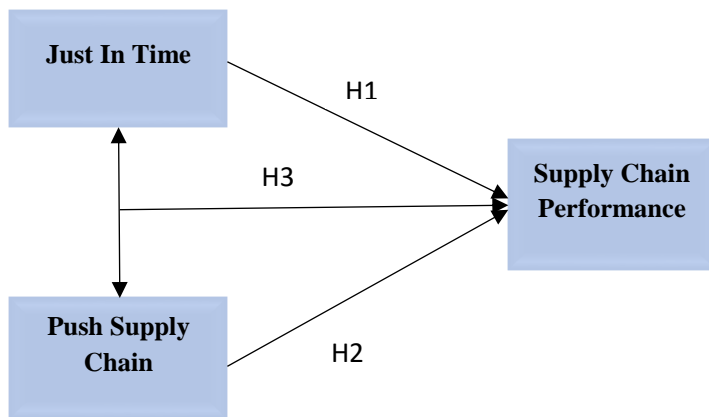


Figure 1 : Conceptual Research Model

4. DISCUSSION

A systematic review of the supply chain strategies just in case and push supply chain strategy found as productive for supply chain performance as any organization requires. An inventory management strategy known as "just-in-case" involves companies ordering more raw materials than they require and producing more goods than they anticipate selling. organizations can protect themselves from hazards such as a quick client demand or unanticipated supply chain interruptions. A just-in-case inventory approach may not appropriate for every firm, but it is still a viable option. In this research, businesses can discover how even a small step toward just-in-case inventory management and push supply chain strategy focusing on the consumer's specific demands that are not applicable in just in case business model due to the difference in both strategies. Both stratifies working oppositely to each other but both business supply chain strategic models depending on supply chain performance of the business and can assist them in hedging against supply chain risks.

5. CONCLUSION

This research concluded the supply chain performance affecting strategies on all that areas where business profitability and success is included. The both just in case and push strategy are associated with the outcomes of the organization supply chain performance because both strategic evaluations of the supply chain management nothing with the performing measures of the supply chain. The retail industry is thoroughly working with the production of the material and their possible availability in market. The pull strategy mainly creates the limited products for their customers and sold them timely

through the supplier performance and efficiency while the products that are ready in warehouse need efficient policies of supply chain performing measures that manage the finished goods on time.

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THE IMPACT OF GREEN SUPPLY CHAIN PRACTICES AND E SUPPLY CHAIN IN ACHIEVING COMPETITIVE ADVANTAGE

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ABSTRACT

Putting into practice of green supply chain and E-supply chain intended to increase an organizational performance that ultimately effects competitive advantage. Businesses and academics are becoming more interested in the relationship between green supply chain practices and competitive advantages whereas, E-supply chain emerged as trending strategy by matching with technological era to recognize organizational demands meeting the end user. Despite the theoretical claims that adopting environmentally friendly practices provided businesses a competitive edge, this research is providing qualitative method after a deep research on proposed variables. The absence of few arguments in the relationship enable to provide a clearer understanding of the literature, this study takes a thorough investigation to assess the situation.

Keywords: *Green Supply Chain, E-Supply Chain, Competitive Advantage.*

1. INTRODUCTION

The environmental sustainability is one of the hottest topics in the supply chain nowadays [1]. Industries all over the world are now implementing and accepting green supply chain strategies because their effects are vast and effective in eliminating wastes and improving productivity [2]–

[5]. This research has discussed the green supply chain and e-supply chain strategies and how they contribute towards a sustainable competitive advantage to an auto industry [6], [7]. Eliminating greenhouse gas emissions is a top aim for companies adopting green initiatives, which leads to a short time consumption increasingly a cost effective business. E-supply chain facilitated the e-commerce businesses that are in high demand now. It also focuses on the improved cooperation with suppliers, improved quality assurance, and optimizing shipping a firm with more agility [8]–[10]. Moreover, the advantages of these two strategies also explained along with the relationship between the dependent and independent variables and a well cited literature review from authentic resources i.e. articles, newspaper blogs, journals etc. because the implementation of these practices is not new in auto industry.

1.1. Problem Statement

The emerging trend of e-commerce has a great emphasis on time effective and cost effective business operations. Whereas, need of e-supply chain and green supply chain increasingly effecting the organizational performance [11]. Numerous studies have looked into the function of green supply chains, however this research needs to look at some inconsistencies that have never been found in the past literature. This research is identifying the e-supply chain and green supply chain practices implementation to get sustainable competitive advantage.

2. THEORETICAL FRAMEWORK

2.1. Green Supply Chain

Green supply chain implementation enhances the financial performance of the automobile companies and industries in general [12]. This is due to the fact that when the industry has made the implementation of green strategy mandatory, the investors do find the industry attractive and thus they invest their capital in it [13]–[15]. This is because of the reason that while implementing a green supply chain strategy, a company shows that it is paying back to the society and thus it's a very attractive feature played by an industry [16]. The corporate social responsibility and triple bottom line sustainability explain that businesses are not for profits only but they have to keep three things in mind: people, profit and planet [17]–[20]. Planet means the environment and this is the reason a lot of industries have made it mandatory to publish sustainability on a regular basis

[21]–[24]. This is important because sustainability reporting provides a clear picture of the company's policies and steps taken regarding green supply chain management and how it has achieved its objectives overtime [25]–[27]. For this reason, the relationship between green supply chain and competitive advantage is too strong.

2.2. E – Supply Chain

E-supply chain management has become a new era of business as firms have started exploring avenues to operate businesses over the internet [28], [29]. E-supply chain management system is related to supply chain management activities being carried out through internet [30][31]. The main drives of this game are information and financial analysis. E-supply chain provides a competitive edge because this is the era of digitalization and if companies do not adopt digital practices, they do not prosper in market and against their competitors [32]–[34]. For this reason, e-supply chain has become a norm in auto industry [35]. Think of Tesla. It has adopted an enormous amount of digital practices and thus its solar truck is completely digital and thus the e-supply chain management system is playing its role for Tesla [36], [37]. Supply chain has a direct link with competitive advantage for the auto industry around the globe [38]. Other variables of the research within itself which will be described in next paragraphs. These variables are information flow, product flow and financial flow and these three play a dominant role for auto industry in providing a competitive advantage [39]–[41] or edge to companies against their competitors in the market i.e. Tesla. Both e-supply chain and green supply chain are the need of time for industries.

2.3. Competitive Advantage

[42], [43] stated that competitive advantage can only be achieved if firms are align with green supply chain strategically. In order to sustain firms must have the resources which are inimitable, rare and unable to substitute because in order to be competitive the firm must have unique strategic capabilities which help them to keep the environment sustainable [44]–[46]. The wastes are reduced with the help of green supply chain management which increases the efficiency of a company [47], [48]. For this reason, the costs are reduced too. For example, if an auto manufacturer regularly publishes a sustainability reporting, this will allow the efficiency to increase because it will come to know the wastes in production cycle and how to reduce them [49]. Since

environmental hazard is one of the biggest wastes itself, implementing a green strategy is at the need of time [8], [50], [51]. If the costs are reduced, the profits rise automatically and this allows an industry or a company to develop a competitive edge for itself [52]. Since implementing a green supply chain strategy is not an easy itself, this is the reason it has a competitive edge significance [53], [54]. The production of detrimental substances is reduced with the help of green supply chain management and this is the reason the companies save themselves from being heavily fined by the environmental protection agencies [55]–[57]. This allows them to increase their profits because a non-recurring expense goes down with the help of implementing a green supply chain strategy at the workplace during the production cycle.

2.4. Operational Definition

2.4.1. Green Supply Chain

Businesses that care about the environment frequently consider an important question: What are green supply chain practices, and what is the first step in creating a more sustainable strategy? Sustainability principles are incorporated into conventional supply chain management through green supply chain practices [58]. The objective is to support businesses in minimizing waste and carbon emissions while increasing revenue [59]–[62]. There is space for green improvements throughout the whole supply chain, from manufacturing and purchasing to distribution, warehousing, and transportation [63]. Moreover, in the operational terms green supply chain strategy can be defined as a concept of ecofriendly integration in the supply chain management where the aim is to improve the sustainability of the environment through practicing green approaches like green distribution, green manufacturing, green purchasing and green processes to reach the customers [64], [65].

One of the important reasons why organizations go green is because of the sustainability of resources. In comparison to a green organization, a non-green organization has troubles gathering its resources and to be stable in the market [66], [67]. This is because of the reason that go green supply chain management provides a competitive edge to the companies which allows the industries or companies to easily gather its resources [68]. The suppliers are also going towards go green supply chain management strategies and for this reason they prefer to work clients who are implementing the green supply chain strategy [69]. According to research provided by Oxford

University in UK, the implementation of green supply chain strategy itself is a competitive edge [70], [71]. The utilization of all the available resources gets done through green supply chain management strategy and that's why the step is adopted by nearly all the industries in the world including auto industry [72]. The entire business decision making process is related to green supply chain and that's why processes were never smooth than before. The environmental friendly processes are taking the industries by storm. The recent of solar truck designed by Tesla is a big example of how companies are moving towards environmental sustainability and for the future.

2.4.2. E – Supply Chain

Operationally, E supply chain can be defined as a system of supply chain which is operated virtually. Under the concept of e- supply chain the aim is to maintain the décor of supply chain system while operating in seamless environment which is highly integrated with the colossal businesses network [73]. This seamless business environment is highly connected with internet and highly rely on advance communication facilities [74], [75]. The product flow is the process where goods flow from customers to suppliers or from suppliers to customers. This is possible with the help of e-supply chain management strategies because it enhances the process and thus the efficiency of the system increases [76]–[78]. For example, for Tesla, the product flow plays a vital role because it increases its utilization level which in turn increases the efficiency of the company and this is how they have a competitive business in market [79].

2.4.3. Competitive Advantage

Competitive advantage is the advantageous position a business wants to outperform its competitors in terms of profitability [80]. An organisation must be able to communicate to its chosen target market that it has a higher comparative or differential value than its rivals in order to establish and retain a competitive advantage [81]–[87]. For instance, a business is likely to have a competitive advantage if it advertises a product at a lower price than a similar product from a rival [88]. The same holds true if the marketed item is more expensive but has special characteristics that buyers are ready to pay for [89]. Green supply chain management always provides a competitive edge over the competitors by smoothing the production and delivering the products to the end users [90].

Consider Tesla which has recently manufactured a solar truck for reducing the environmental hazard and to increase the greenhouse effect [91], [92]. This is a perfect example of product differentiation and this allows new customers to visit the company and buy the product [93].

Within the launch of few minutes of solar truck by Tesla which is a prototype, the company was able to attract a huge number of clients from around the globe who were willing to put their money into a solar truck [12], [94], [95]. The brand image gets strengthened in the market i.e. recent example of Tesla and the stocks go up. New investors rush to the company like they did to Tesla and the company makes millions of profits with just a single launch. This is the reason literature reviews have provided a thorough research on the direct link between green supply chain management and competitive advantage to the companies.

3. LITERATURE REVIEW

[96] Stated Green supply chain implementation enhances the capabilities of supply chain of the automobile companies [97]. Sustainable green supply chain strategies help companies manufacture quality products. The example of Tesla is there because it manufactured one of the most quality products in the world i.e. solar truck. It's highly efficient and plays a fundamental in reducing the environmental complexities [98], [99] because it does not have to release fuel or gas while moving on road [100]–[103]. This is the reason sustainable green supply chain management helps play a competitive role for companies and industries around the world and thus they become highly competitive against their competitors [104]–[106]. Therefore, Tesla adopted go green strategy too.

[107] stated competitive advantage can only be achieved if firms are align with green supply chain strategically [108]. Green supply chain management allows companies to save themselves against anti regulations in the market and this enables them to reduce the extra waste and cost in the manufacturing procedure [109], [110]. Those industries which do not follow the norms are often heavily fined and thus the green supply chain management companies provides an efficient manufacturing procedure in the market over their competitors [111]. A lot of industries have been following and implementing SOPs around the globe regarding sustainability and corporate social responsibilities [112]–[114]. This has remained a competitive strategy for organizations around the world and this has led the companies do enormous profits and growth in their industries against their competitors [115].

[116] stated E - supply chain enhances the performance of the operations which help in achieving competitive advantage [117], [118]. The e-supply chain management helps companies to keep an

efficient track of order and all the invoices and that's why the information flow is very dissolute [119]. This is the reason a lot of companies have implemented e-supply chain management system at the workplaces and this is turning out to be a blessing for them because it has provided a competitive edge for them against their competitors [120], [121]. The orders are being tracked on time and thus no redundancy is there in the system. E-Supply chain management involves a great deal of keeping tracks of invoices and orders [122]. The financial flow is very smooth and easy with the help of e-supply chain management it helps to reduce extra cost and make manufacturing in cost effective way [123]–[125].

Furthermore, since the times are changed, companies are changing their strategies too and that's why they have implemented such practices at their workplaces to be more productive and efficient [126]. The perfect example is Tesla. It has implemented green and e-supply chain management strategies that enabled that to become competitive and gain sustainable competitive advantage in the rivals [127]–[129]. Since competitions are rigid in auto industry, these tactics help companies be better off. Effective management of customer supplier relationship is there too because of implementing such strategies [130]. This is a helpful practice for businesses around the globe because this helps them be productive in the market [131]. Tesla has become one of the biggest companies in the world because of its effective green policies and it has kept and maintained perfect relationship with its suppliers [132]–[135] as well because suppliers are aware of the expected outcomes will be profitable in future [136]. This variable has explained that it has a direct link with competitive advantage for any industry.

3.1 General Research Model

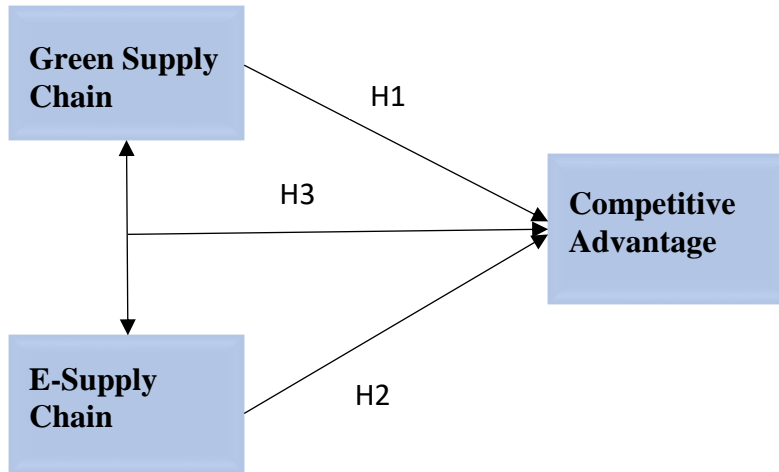


Figure 1: Conceptual Research Model

4. DISCUSSION

Business executives are aware of the significance of a green supply chain and E-supply chain in the effective execution of environmental measures. Practices as a vital component of maintaining competitiveness in the future on the global market. There have been a lot of investigations into the relationship between green supply chain practices and competitive advantage, and the results indicate that the nature of the influence has varied [137], [138]. Only a small number of studies have looked at the causes of these discrepancies and the scenarios regarding the e-supply chain implementation to attain sustainable competitive advantage. Additionally, decreased expenditures for overhead and inventories reduces risk factors, and also emphasize on improved cash flow of the organization. Our theoretical review findings encouraged the prior literature arguments that agrees with the implementation of e-supply chain and green supply chain benefits the organizational effectiveness.

5. CONCLUSION

The attempt to investigate theoretically about the green supply chain practices and e-supply chain implementation encouraged the business management to acquire advanced criteria for the need of development. A thorough research authenticate the missing elements of e-supply chain that assist in achieving competitive advantage. The factors of e-supply chain and green supply chain affecting

the organizations such as, price, cost, quality, delivery reliability, time to market, and product innovation are all factors that green supply chain techniques use to affect an organization's performance and competitive advantage.

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THE IMPACT OF JUST IN TIME STRATEGY AND PULL CHAIN STRATEGY ON SUPPLY CHAIN PERFORMANCE

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ABSTRACT

Businesses used to be able to compete successfully as standalone entities, but in order to get an effective organizational performance, they need to compete as an essential link in a supply chain performance. For supply chain management to be successful, both internal and external integration are required of operational procedures across the supply chain performance. Therefore, just in time and pull chain strategy incorporated to assess the supply chain performance and found as significant to enhance the supply chain performance by meeting customer demands.

Keywords: *Just in Time, Pull Chain Strategy, Supply Chain Performance*

1. INTRODUCTION

One of the organization's most important and essential functions is a smooth supply chain management [1]. Supply chain management strategy may include a number of elements that have a significant effect on a business revenue and profitability. As a result, many business owners welcome the chance to choose supply chain strategies that are greatest [2], [3]. Rapidly growing

business industries embracing technological changes and adopting innovations. Businesses can reduce inventory costs while boosting productivity and minimizing waste by only placing orders for the items that are actually required for the production process [4]. This technique requires precise demand forecasting in order to produce [5], [6]. Just-in-time (JIT) inventory systems also decrease stock and increase productivity. JIT production techniques reduce inventory expenses because companies buy materials and parts just when they're needed for manufacturing and don't pay storage costs [7]–[9]. Furthermore, manufacturers are not left with excess inventory in the event that an order is cancelled or not filled [10]. Moreover, in the pull strategy of the supply chain, products are only produced in response to client demand; otherwise, no extra quantity would be kept in stock [11]–[16]. Business owners that only produce items that are ready for sale and have no inventory can also benefit from the pull technique [17]. An increasingly promoting factor of supply chain considered to be investigate in this research. Just in time and pull chain strategy considered as independent variable and supply chain performance as dependent variable.

1.1.Problem Statement

Overproduction, that happens when the market's supply of a thing go beyond its demand and leads to the accumulation of unsold stocks, is avoided by a just-in-time strategy [18]. These unsaleable commodities become dead stock in the inventory, creating waste and occupying space. By considering these factors and to fil the past researches gap, this research is mainly aimed to investigate the impact of just in time strategy implementation and pull chain strategy on supply chain performance [19]. An in-depth assessment of JIT strategy and pull strategy with the help of previously explored literature and practical content.

2. THEORETICAL FRAMEWORK

2.1. Pull Supply Chain Strategy

The supply chain strategic management and its implementations in business operations is one of the fundamental goals of the global business industry in which there is no operational and functional strategy could be happen without effective supply chain management [20][21], [22]. The supply chain is a process of functioning in business in which raw material go through with the

process of manufacturing and then product sold in consumer hands [23]. In supply chain theory there is a strategy of the pull supply chain that create the need of the product according to customer needs and requirements [24]–[26]. In fashion designing industry where designers create the dresses according to the customer’s requirement and their priorities where they want to wear custom - made design of the dress [27]. In this process the suppliers who is the designer of the retail store taking order from customers [28], and ask their essential needs and specification of the motif designs and other related features that enhances the customer interests and then it goes for manufacturing process and finished at the sale [29]–[31]. The pull strategy of the supply chain is a process in which product only made according to customer need otherwise there is no extra quantity would be available in stock [32], [33]. The pull strategy also facilitates the business owners in which they only made products that is ready for sale and no item can be found in stock.

2.2. Just in Time

The just in time is a type of inventory management system of the supply chain in which business companies made the products only to fulfill the requirement of the customers [34], [35]. In this method of supply chain, the companies only order that materials that could be easily available from suppliers on time and deliver the immediate demand of the customers [36], [37]. In this method companies always invest their capital in those products that are in demand in market and meet the requirements of the market and order the products for manufacturing because there are assure for the sale of the items on time and there is no other cost would be applicable in different factors such as storage, warehouses, transportation delay and other reasons [38], [39]. If business owners applying the just in time inventory management system in their business operations then there is several chances in supply chain efficiency and working perfectly in manage the inventories [40]. The just in time strategy of supply chain helps to investors to allocate their capitals in positive projects rather those who investing their assets in big inventories management [41]in which number of risks are involved in its sales and marketing growth [42]–[45]. The just in time management system of work helps to manage the inventories on time especially in large portion of the business where products should be sold at their time otherwise number of issues relate with it [46], [47]. The just in time strategy demand the accurate order taking efficiency that is only required to customers. It is helpful business strategy that provide the cash in company’s hand that they can invest in further orders in market and grow their space [48].

2.3. Supply Chain Performance

The supply chain performance measurement is a task of the supply chain management of the business industries that defines the operational activities of the business [49]. The supply chain performance start from the manufacturing of the raw material to deliver the items in consumers hands [50], [51]. It is only depending on the efficient supply chain management that hold the entire business industry and its operations through different strategic networks [52]–[55]. The supply chain performance is an objective that finalized the business operation in related industries. In textile industry, the supply chain performance is high in demand and rapidly increasing its value in global market [56], [57]. The provision of supply chain industry in textile having number of opportunities because they are linked to the consumer basic necessities [58], [59]. The supply chain management investigate the need and desired of the consumers, behavioral and change of interest, cost effective approaches and different other services that are related to consumers [60], [61]. The supply chain performance is a method in which business companies create the strategic decisions and possible solutions to create the presence in market [62], [63]. The strategic supply chain performance depending on the policies that are set by the managerial section of the business that enhance the efficiency of the production areas that encourage the high needs of the supply chain performance in textile industry [36], [64]. All kind of business profitability depending on the availability of the products in market that meet the consumer needs on time rather they should wait or change their behavior towards the objects [65], [66]. The supply chain management reflecting its operational activities through its performances [67], [68]. It helps to businesses to measure the performance criteria that evaluate the gaps in industry. There are number of factors that correlate with the supply chain performances in which employee's interest that helps to active the deadlines, managerial participation, commitments of suppliers and retailer's performances to achieve the goals [69]–[74]. These associated factors are linked with the performance of the supply chain management in any kind of business that helps to generate the expected results that companies required through their supply chain performances.

2.4. Operational Definition

2.4.1. Pull Supply Chain Strategy

The operational side of the pull supply chain strategy is quite secure method in which less risk factors are involved [75]. It encourages the suppliers to invest their capital only for the demand of the customers. Its unique strategy for supply chain management in order to design and manufacture the items and depending on the consumption of the customers as per required items [76]. The pull strategy of the supply chain always seeking the need of its customers and most of the time it is also considering in the availability of the product in some cases as seasonal requirement [77], [78]. The pull demand strategy to drive in business efficiency has less certainty in business production and limited customer loyalty rather than other products that are circulating in market throughout the year and are the essential needs of the customers [79].

2.4.2. Just in Time

The operational theme of the strategy of just in time in inventory management process is quite effective and functional due to its nature [80], [81]. It is type of strategy in which business companies taking orders to design the product according to its demand in market [82]–[84]. It help companies to face its competitors when they are manufacturing large number of products and it is saved in their ware houses. The just in time strategy is an ongoing process that do not hold the products of the companies in their inventories, it is a system in which running items effectively create their operations of supply chain [85]–[87]. The just in time method of manage is also depending on the forecasting of the companies in which companies strategically decide the quantities of the material when they have to be made accurately. But in this system number of risk factors are involved in order to meet the dead line of the customers because in just in time process, the order should be getting from supplier when it is urgently required [88], [89]. In many cases the just in time strategy fails when on time order to suppliers can take extra time to deliver the raw materials or manufactured finished items in terms of delay of transportation, bad weather or any other accident.

2.4.3. Supply Chain Performance

By definition the operational strategy of the supply chain performances creates the profitable business margins for industries and provide best outcomes in services to the customers [90]. It is also creating the customer experiences and attitude towards the products and hold their interests

for a longer period of time. The performance -based structure of the supply chain helps to maintain the criteria in which the accuracy of the time management is considering for deliver the products to its customers [91]–[94]. Currently, business industries become efficient to meet the market requirements in terms of customer demand and they are also taking initiative to perform supply chain strategies to fulfill the customer needs at their door step [95]. The end goal of the supply chain performance is to product delivery to the customers that is gone through with various levels ad companies expected safe delivery of the objects [96]–[100]. The era of technology increases the efficiency of the supply chain performance and increase all that measures that create the possibility to achieve business goals with its supply chain management. It is fact that business successful strategies depending on its policies that they took to build their supply chain performance.

3. LITERATURE REVIEW

[101] Examined the impact of pull strategy of supply chain and just in time. The correlation explains that the both factors of the supply chain management is relevant to each other. The pull supply chain strategy focusses on the need on specific demand of the customers which they required [102], [103]. While just in time strategy of the supply chain business model also focusing on relevant orders of the customers that they need on time. In this case, the companies giving orders to suppliers for product delivery with time accuracy [104]. The only difference is that the pull strategy mainly focusing on customer's requirement [23], [105] according to the availability of the items while the just in time is bound to provide customer needs in all certain manners [2], [106], [107]. The just in time strategy has many unexpected risk factors that are related to the availability of the items from suppliers that could be affected with any risk factors.

[108] stated the relationship between pull supply chain strategy and supply chain performance can be signified. It can describe the successful practices of the business limitations in supply chain industry. The pull supply chain strategy focusing on custom- made orders of the customers that is designed by the requirement and needs while supply chain performance cannot as much play active role in this scenario [109], [110]. Because the pull strategy of the supply chain management doesn't need to place its efficiency in order to sold out its product because it is already sold at the time of the order of the customers [111]–[113]. The pull strategy of the supply chain already meets all that

necessities of the supply chain performance that customers expecting to their suppliers and waiting for the completion of their orders [28], [114]. In textile industry especially in fashion design houses where customers came to find out their solutions according to their desires and get best supply chain performance without any supplier effort in develop to the sale interest.

[115] described the relationship between just in time and supply chain performance as, the just-in-time idea could enhance quality control, shorten lead times, enhance vendor performance, and eliminate waste [116], [117]. Manufacturing may occasionally decide to delay output for a while or employ the postponement management approach [118], [119]. The just in time strategy create the products and items that are running in market demand and supply chain performance of the company enhances and develop the possibility of the viability of the products [120]–[122]. The supply chain performance measures and activities build the just in time products delivery on time and concentrating on all issues that are related with the immediate product delivery orders [123][124]. The just in time strategy is involved several risk factors that can delay the orders delivery of the customers [125], [126] but the supply chain performance continues helping to manage the efficiency of the supply chain with related possible solutions [127].

[128] evaluated the relationships among independent variables of pull supply chain strategy and just in time business model has an effective association with dependent variable of the supply chain performance [129]. Several business industries are related with efficient supply chain performing measures that enhances the on -time delivery of the products to the customers through various manufacturing procedures [130]–[133]. The pull strategy of supply chain and just in time inventory management system only depending on the effective supply chain performance of the business corporations that they are managing only through their suppliers effectively commitments for product deliveries [134]–[137]. The supply chain performance is also depending on the factors that are associated with the manufacturing, production cost, ware houses, transportation, fuels, cost effective policies and other certain elements that can affect the pull strategy and just in time business model [138], [139].

3.1 General Research Model

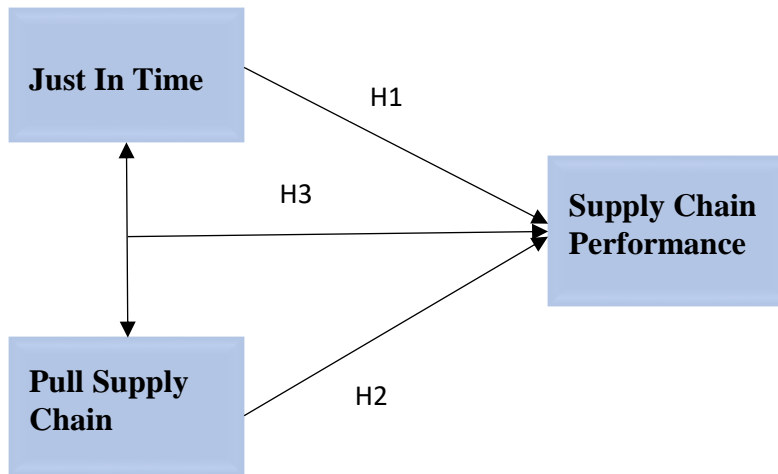


Figure 1: Conceptual Research Model

4. DISCUSSION

The investigated research variables can be considered with some critical points that facilitates an organizational operations by improving supply chain performance. The demand for a product alone in a pull strategy for supply chain management, determines the levels of production and distribution. When supply is insufficient to satisfy demand, the pull supply chain strategy also emphasizes the possibility for risk. Whereas, a JIT strategy, is flexible and capable of adapting to the demands of the ever-changing market. For instance, Toyota doesn't purchase raw materials until it has an order. The company has been able to reduce costs and quickly adapt to changes in demand because it can now store less inventory without having to worry about current inventories. In order to reduce the costs of purchasing goods that they won't be able to sell, businesses may choose to use a pull supply chain approach. Pull supply chain strategy also emphasizes having the ability to respond quickly to a specific demand or order by verifying consumer demand that is crucial when introducing products using a pull method into the supply chain.

5. CONCLUSION

Enhancing the supply chain's overall competitive performance. The Just in time and pull chain techniques were specifically considered in this research. The findings provided advance authority to the idea that using the JIT and pull strategy strategies will increase organizational performance by fortifying supply chain connections. Top executives must successfully manage their companies' internal operations, but they also need to get them ready to compete as key players in a supply chain. For long-term success, there must be competitors between supply chains. Although the idea of supply chain rivalry is rather simple, it can be challenging to identify and implement measures that would promote such competition.

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THE IMPACT OF PULL SUPPLY CHAIN STRATEGY AND JUST IN CASE ON SUPPLY CHAIN PERFORMANCE

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ABSTRACT

Every successful businesses rely substantially on effective supply chain management in order to execute its daily operations. Organizational operations management processes profoundly depends on expedient supply chain performance. Some of the most prosperous businesses in the world, including Amazon and Walmart, largely rely on cutting-edge supply chain logistics methods. As a result, all elements of the chain experience significant innovation in this very active market. Therefore, to examine the Pull strategy and Just in case impact on supply chain performance with the help of profound literature, and researches.

Keywords: *Pull Supply Chain, Just In Case, Supply Chain Performance*

1. INTRODUCTION

A quick responding business is considered to be growing and successful business in the competitive market. More interestingly, business success and development has great charge on its effective supply chain management [1]. In order to justify the supply chain strategies that helps in inventory management, cost effective production and goods provision by exact demand forecast

[2], [3]. Just-in-case (JIC) supply chain management has gained popularity recently, especially in the wake of the coronavirus epidemic [4], [5]. By carrying additional inventory and incorporating redundancy into their supply chains, businesses can respond to unforeseen demand points or reduce supply disruptions [6]–[8]. This is a more conservative strategy. Even though increasing stock levels will result in higher carrying costs and capital commitments, they might ultimately prove to be more profitable [9], [10]. Having the appropriate stock on hand could increase sales and provide businesses a competitive edge [11]–[14]. For the purpose to this research pull chain strategy and just in case strategy considered as dependent variable that need to be assessed by evaluating the supply chain performance. This research would contribute in the literature and great source of knowledge for practitioners in manufacturing industries.

1.1. Problem Statement

Companies maintain significant accumulations as part of their "just in case" (JIC) inventory strategy. By using this technique, the likelihood that a product would run out of stock is reduced. When a business employs this tactic, it frequently struggles to forecast consumer demand or encounters demand uncertainty, even though JIC is a trending topic but can be found rarely in the research [15], [16]. Therefore, this research is presented with theoretical space that would strengthen the literature and knowledge support for professionals regarding successful supply chain in order to measure the strategical influence of supply chain.

2. THEORETICAL FRAMEWORK

2.1. Pull Supply Chain Strategy

The consumer business industry in business and trade market either it is small and big, the whole business operations only depending on the sufficient operational strategy of the supply chain management that helps to meet the required goals of the businesses [17]–[19]. Supply chain industry working on the goals of manufacturing of the raw material to the furnished product in consumers hands [20]. The pull supply chain strategy in business has its own conditions to work and deal with the customers [21]–[23]. The pull supply chain industry focuses on the consumer's specific needs that they required in custom -made products. The consumers ordered significant

products and materials and supplier must be deliver the product that meet the demand of the customer on time [24]. In any industry for example, the company who is dealing in interior designing of the décor in residential and commercial sectors [25]. They should be focus on the specifications of the designing of the material, lights, color, texture and many other related things that meet the customer's interest and satisfaction and then after finalization of the customers, the design goes for the production [26]–[28]. The pull strategy of the supply chain management giving save edge to the suppliers in which they confirmed the sale of the product and then they create the order [29]–[31]. Business owners can save their capitals for investment and do no invested on those projects that are not relate to the customer's need.

2.2. *Just in Case*

The just in case is one of the strategies in supply chain management in which the business companies in retail industry manufacturing the products in bulk and storage them in ware houses than its expected need and demand [32], [33]. The just in case business model of the supply chain management increasing the value of the demand of the products at any time and supplier will be able to fulfill the consumer demand [34]. The just in case is a business forecasting method in which suppliers are ready to meet the requirements of the products especially in the quantity that is some time not possible to manufacture on time [35]–[37]. The just in time strategy fill the gap between the order taking and delivery process of the products to its consumers [38]. It confirms the inventory management in storage that provide the sufficient need of the market at any time [39]. The just in time method of business reduce the risk factors that are involved in the cost effective models, raw material availability, change of consumer needs, interest and many other related factors that are involved because the ready inventories are on the risk at ware houses and any time their demand can be decrease [10], [40], [41]. The just in time method is opposite to just in case that is only focusing on the products that are ready according to customer requirements [42]–[44]. Just in case business model creating uncertainty among the suppliers and business holders due to its huge quantity of the ready finished products in which huge cost is invested and it is needed to be sold on time otherwise the demand and quality can be affected due to various factors [45].

2.3. *Supply Chain Performance*

Supply chain management is a process of business that is running the operational and functional activities of the global business industry to meet the requirements of the customers on time [46]–

[48]. The successful business outcome relay on its planning and development of the supply chain assistance and placed their position in market [49]. The supply chain management performance is depending on the operations of the business that are imitating by the raw material purchasing to manufacturing of the products, their demand of the suppliers and finally ready items and goods would be available in market for consumer needs [21], [50]. The supply chain performance is the end stage of the businesses in which companies set their outcomes and measure their performances of the businesses [51], [52]. Since recent years where construction infrastructure places its high position in the world and number of residential and commercial projects are under construction at biggest level the trend of the interior designing and its related beautiful art and features also taking place in consumer industry [53]. People are getting aware for the décor items in their house holds and commercial business properties [26], [54], [55]. The supply chain industry of the retail interior designing market is quite impressive and it has huge margin of the profits if the supply chain performance is efficient in terms of consumer needs and satisfaction. The supply chain performance of the interior décor industry focusing on all ideas that are generated by the architecture, cost of production material, efficient quality and services, consumers aptitude and behavior towards the demand are involved [56]–[60]. The supply chain performance in business strategies is also related with the employee's interest, efficiency of the business model, suppliers' commitments and on time delivery of the products to their concerned authorities.

2.4. Operational Definition

2.4.1. Pull Supply Chain Strategy

The operational line of the pull supply chain strategy in businesses is quite unique then other strategies in which material is ready in bulk but it has many associated risk factors [61], [62]. The pull strategy of supply chain helps to business owners to save their capital only for those objects that are confirmed in order taking process and then goes for production [36], [63]. The pull strategy is depending on the consumptions of the customers according to their needs. The pull strategy also focusing on the trends of the market and its requirement of the customers that could be change at any time due to several reasons [64]. The pull demand strategy of supply chain has less loyalty of the business because it is only focusing on limited market and product and only taking initiative for those objectives that are in running levels.

2.4.2. *Just in Case*

Just in case is the strategic approach in the supply chain management where the organization have sufficient amount of inventory to meet the demands of customers [65], [66]. The operational strategy of the just in case in supply chain management is a process of inventories that are ready in stock [67] and prepared to distribute in market at the time of the order but there are number of associated factors are involved [68]–[70] in just in case method in which reliability of the suppliers, production cost of the raw material, storage capacity and ware house cost, fuel, transportations and most important the change of consumer behavior at any time in market [42], [71], [72]. The just in case strategy also effected by the innovation in market with new product features that can reduce the demand of the existing stock [73], [74]. Where business trends are moving fast and the consumer needs and behavior also going to be change, at this stage, the just in case strategy of the supply chain management facing many issues [75], [76]. The ultimate change of consumer behavior is a most challenging situation for the business owners who already prepared bulk quantity of the products and they are doing effort to sold them urgently [77]–[80]. The just in case method also involved with the factor in which at the time of the order of the customer, they need urgent delivery of the products and just in case strategy helps to achieve the supplier's goals efficiently with the help of their finished goods in stock [81].

2.4.3. *Supply Chain Performance*

The operational management of supply chain performance is a measuring tool that decides the actual operational activity that meet the goals of the industry and satisfy the needs of customers by providing the required products [82]. The successful businesses are relating with the supply chain performance that create the efficiency and reliability of the entire objectives that are involved in operations [83]–[85]. The supply chain performance focusing on the quality of the products and create the huge margins of the profitable outcomes and deliver best customer experiences [86], [87]. The supply chain performance in business organizations focuses on the product manufacturing to their deliveries with accuracy of the commitments with their customers [88], [89]. in order to face the competition in retail business industry and especially in interior décor where number of interior designer are coming in market and giving competitive ideas in cost effective prices, the supply chain performance is one and only option that helps to customers to get quality services and develop the trust on its suppliers [90]–[93]. The quality product and services on time delivery opportunities is a basic requirement of the customers that they are

expecting to their suppliers and performing measures of the supply chain [94] helps to develop the resources to meet the demand of the customers [95], [96]. Customers gain trust on those suppliers who are committed and focusing on the delivery of the products on time [97]. The technology implementation in business industry especially in supply chain management is one of the revolutions in business that helps to evaluate the customers' needs and their demand with product features and creating possibilities to deliver their order on time [98]–[100]. The technology also improves the efficiency of the performance of the supply chain in business industry.

3. LITERATURE REVIEW

The timing of product fabrication, delivery to distribution hubs, and availability in the retail channel is determined by supply chain strategy. In a pull supply chain, process is driven by current customer demand, but in a push supply chain, strategy is driven by long-term forecasts of consumer need [101], [102]. [103] investigated that modern management system needs just in time and pull strategy to meet demands. The relationship between our both independent variables the pull supply chain strategy and just in case is quite different to each other [104]. The pull strategy of the supply chain mainly focusing on those objectives that are only significant with customers needs for their specific requirements in product making and distribution [105]–[107]. While just in case is a supply chain model that manufacturing the inventories in bulk in stock in order to meet customers immediate demand and do not want to lose the customer's expectations [108], [109]. The pull supply chain strategy is the safest way to secure the investors capitals in production unit while there are number of risk factors are involved in just in case strategy to maintain the product inventories for a longer period of time [110]–[112].

Pull chain strategy and supply chain performance has significant role in the effectiveness of operations [113], [114]. The pull supply chain strategy and supply chain performance has significance association [115], [116]. Our dependent variable of the supply chain performance is one of the business unit measure that is involved in all kind of operational and functional activities of the business industry and no business can succeed its goals without supply chain management performance [117]–[121]. The business forecasting evaluates the all risk factors and design policies that can overcome the threats on time and making possible solutions to maintain their effective performance of supply chain [105]. The pull strategy has the great effect of performing

measures of the supply chain [122] because the pull strategy do not effort to sale their products because it is already customer -made that is design by the unique features that are the demand of the customers and supply chain performance already placed its position [1], [123].

[124] evaluated Just in case has significant impact on supply chain performance. The relationship of the just in case and supply chain performance is relating to each other in effectively. The study has proved that the just in case is mainly focusing on the material production that is in huge quantity in order to meet the customer requirements on immediate order delivery [125], [126]. The just in case business model is depending on the business organizations forecasting in which they assume the demand of the market at any time and there are many risk factors are involved in just in case method [127], [128]. The only supply chain performance can create the efficiency of the product delivery in market through the supplier's commitments and product efficiency to increase the demand among the customers [129], [130].

[131] explained the impact of pull chain and just in case on the supply chain performance to meet the needs. The relationship of both independent variables of pull supply chain strategy and just in case with dependent variable of supply chain performance are associated [132]. The both independent variables relay on supply chain performance in business success [133], [134]. The pull strategy focusing only those objectives that are confirmed from customers for specific requirements while just in case developing huge quantity of the products that is associate with the risk factors due to many reasons of market change behavior and inventory management system [135], [136]. The both independent variables only can create the business efficiency with the help of effective supply chain management and performance measures that are required for successful business outcomes in all industries [137] especially in interior décor where consumer change behavior is rapidly growing and expecting new ideas from their suppliers [138], [139]. Both supply chain strategies of pull and just in case need strong polices to manage the performance of the supply chain management in order to develop the sale and profit of the ready items in market.

3.1 General Research Model

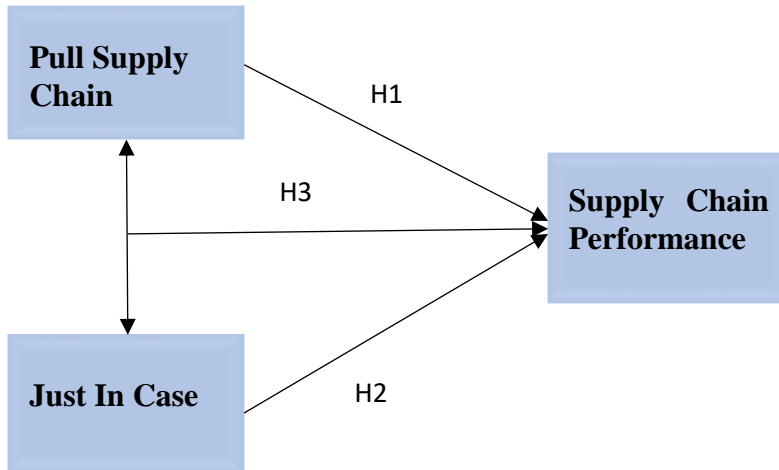


Figure 1: Conceptual Research Model

4. DISCUSSION

Companies rely on supply chain management to handle the process swiftly and effectively, from the acquisition of raw materials to all necessary processing and the final delivery of goods. When a product should be manufactured, transferred to storage facilities, delivered to a retail location, or shipped is determined by supply chains. This is a difficult task that mainly relies on future-proofing to take delays into consideration. Organizations can plan out their supplies based on a variety of criteria based on their precise demands with the use of supply chain strategies. Just-in-case supply chains work by foreseeing customer needs. Companies utilize just-in-case supply chain resilience techniques to lower the risk of stock outs caused by widespread disruptions and complexity that has positive impact on supply chain performance of any organization. Carrying as much inventory as you can to hide bad forecasting techniques shouldn't be the goal of just-in-case inventory management. An effective JIC strategy depends on accurate demand forecasting. Finding the ideal balance between satisfying demand and not buying too much stock is crucial that may ultimately leads toward improved SC performance. Whereas, a pull supply chain's manufacturing and supply processes are driven by actual consumer demand. In this type of supply chain logistics, inventory is acquired based on demand. One advantage of using this method of planning when demand is low is that there will be less waste.

5. CONCLUSION

There are several ways that just-in-case inventory management can support expansion and profitability. This research concludes the several authors' argument that shows an increased competitiveness and supply chain performance are better able to manage business operations. The strategic implementation of supply chain enhances the inventory management, order delivering efficiently and cost effectively. The just in case strategy and pull chain strategy figure out various advantages for the growing supply chain management. In contrast the pull chain strategy administer the inventory management focused on the unique requirements that customers had for custom-made goods. Customers ordered large quantities of goods and supplies, and the supplier had to meet the deadline by delivering the goods. These strategies help the organizations to implement in order to acquire supply chain performance and sustainable competitive edge.

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THE IMPACT OF PUSH SUPPLY CHAIN STRATEGY AND JUST IN CASE ON SUPPLY CHAIN PERFORMANCE

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ABSTRACT

The advanced knowledge of impending events, the firms are able to predict the arrival times of their supply chains. This provides them time to organize a place to store the stock they buy and enables them to schedule manufacturing to meet their demands. For this purpose organizations employ supply chain strategies to eliminate the waste, losses, and uncertain environmental conditions. The significance of push strategy and just in case has investigated in this research to figure out the circumstances of the supply chain performance in the organization and the extent to impact supply chain performance with integration of just in case and push supply chain.

Keywords: *Push Supply Chain, Just In Case, Supply Chain Performance.*

1. INTRODUCTION

Supply chain efficiency and performance is a big matter of concern for many industries around the globe [1]. The effectiveness of each level of the supply chain in terms of cost optimization, efficiency reduction, speed improvement, and consumer expectations is referred to as supply chain performance [2], [3]. The performance of the supply chain is dependent on a number of factors, including order accuracy, stock availability, on-time delivery, and production lead times [4]. The Push supply chain strategy as long as Just in case inventory practices have been explained in detail in this research. They have a direct link or impact on supply chain performance of the automobile sector [5], [6]. The timing of product fabrication, delivery to distribution hubs, and availability in the retail channel is determined by supply chain strategy [7]–[9]. Pull supply chains are driven by current customer demand, whereas push tactics are motivated by long-term consumer demand estimates [10], [11]. Although these two are not the only independent variables because there are other factors too for an efficient supply chain, industries have been taking into account these factors for most of the time because of their usefulness and importance practically and global markets.

Additionally, the automobile industry knows the worth and importance of supply chain efficiency and thus it's usually a dependent variable depending upon many factors in the market. The independent variables chosen in this study are Just in case inventory principle and Push supply chain strategy. These two variables have a direct impact on supply chain efficiencies of the organizations and industries and they play a major role in the development of organizations. The following important points to be noted:

1.1. Problem Statement

During the nationwide lockdowns caused by the coronavirus, supply chain planning became even more crucial. Orders placed online grew, and for the majority of firms supply chain management become priority to be sustained business[12], [13]. The necessity of effective supply chains helps businesses increase their level of competition [14]. However, we haven't identified enough studies on the "just in case" & "push supply chain" technique that would allow us to give reliable information based on reliable research sources.

2. THEORETICAL FRAMEWORK

2.1. Just in case and Supply Chain

Just in case production technique is one of the most widely used techniques in the automobile industry because it improved the efficiency level of supply chain system [15]–[18]. It was first introduced in Japanese regions where Toyota implemented some famous and well-known production techniques which focused on reducing lean wastes and increasing efficiency of the organizations [19]. For this reason, the Japanese automobile giant came up with Just in case production technique which focuses on producing a required number of items [20] according to the demand so that there are no hue storage costs for the organization and thus the operational expenses would be reduced resulting in an increase of profits [21]–[24]. Before the implementation of Just in case practice, the supply chain process of Toyota was highly distorted [25]–[27]. There were a number of unused items lying in the warehouses of Toyota but the company was not able to sell the products in the market because it was not efficiently forecasting the demand and supply of its products [28], [29]. And that’s why Toyota was bearing a huge storage cost because it had to safeguard its inventory and to keep proper maintenance so that inventory would not get obsoleted but the implementation of just in practices totally changed the dynamics of the business [30]–[34]. Just in case production has the following direct impact on supply chain performance of automobile industry:

- Less space
- Waste reduction
- Small investments
- Cash flow management
- Reduction in production errors

2.2. Push Chain Strategy

Push chain strategy has tremendously changed the fortune of supply chain management. It is worth to note Push supply chain methodology usually does not exist in automobile sector [35]. It does exist for high extensive customer demands’ automobile companies i.e. Porsche, Ferrari etc. The Push supply chain strategy actually goes for the make to order principle [36], [37]. In this type of strategy, the organizations usually do not manufacture products in advance. Take the example of Toyota in market. It manufactures its products according to the customer demand [38]. It goes for

extensive advertising to enable the customers to buy the products [39]. This is an example of a push strategy where the company itself is going to the customer [40]–[42]. The Push supply chain strategy has a direct impact on supply chain efficiency of the organization because it reduces the extra inventory cost and production cycles of an automobile company and thus the company does not have to spend money advertising and promotion techniques to attract the customers [43], [44]. The supply chain process is smooth because the payments and the orders are received on time and the manufacturing takes place well ahead of time and the final product is delivered to the customer in the allocated time [45]. This is a perfect way to retain the efficiency of the supply chain system.

2.3. Supply Chain Performance

Supply chain has become an integral part of companies [46]. Determining an optimal supply chain strategy [47]. Almost every industry has a supply chain process whether it is an efficient one or not but it has a strategy [48]. For industries, supply chain processes matter especially in manufacturing and automobile industries [49]–[51]. The reason is that manufacturing requires a chunk of supply chain, procurement, logistics etc. operations and that's efficiency is required there [52]. If the supply chain processes are not efficient, companies often lose millions in revenues because of taking unnecessary steps in the production or operational phases [53]–[57]. For this reason, they focus a lot on supply chain chains and their strategies. Just in case inventory and Push supply chain strategies have always been the indicators of success [58], [59] for companies because the industries thrive due to these two strategies and for this reason, organization put a lot of efforts and focus on these strategies to become more productive and cost effective [60], [61]. This research article has explained that these two variables play a very dominant role for industries and thus industries always grow because of implementing effective supply chain management policies.

2.4. Operational definition

2.4.1. Just in case

JIC is an inventory management technique based on anticipated sales that mandates businesses make proactive supply purchases to satisfy any amount of demand while staying within predetermined guidelines [62]–[64]. Raw materials and supplies utilized in production, unfinished goods in various phases of production, and finished goods are all referred to as "inventory" [65]. This approach is widely employed across a variety of businesses, not only those in manufacturing

and distribution [66], [67]. In terms of operations Just in case is the name of strategic approach used by organizations [68] to attain the goals of increase in efficiency by reducing the waste which received by goods needed for the production and manufacturing processes [30], [69]–[71]. This approach also helps organizations to reduce the cost of inventory [72]. Just in case inventory production is important for automobile industry because it requires less space for the inventory to be lined up [73], [74].

2.4.2. Push Chain Strategy

Operationally Push chain strategy is the close term used in Just in case paradigm of inventory management [75]. Under this strategy number of stock in hand is reduced and highly focused on last second deliveries [76], [77]. Once the demand from customer is justified then products become the part of supply chain [78], [79]. The Push supply chain strategy is to make to order strategy where the companies receive orders from customers and manufacture the products [80]–[85]. For example, in the hotel industry, customers put the order and the restaurant cooks the meal. Or in the jewels industry people put the demand and the sellers manufacture diamonds or gold for them etc. The same scenario is usually applied in automobile industry too where the high end products are being sold by extensive automobile companies whose targets are some of the richest people. And thus they go for push strategy of supply chain.

2.4.3. Supply Chain Performance

In terms of operations, supply chain performance is the value added feature in the activities of supply chain where aim is to meet the needs of customers in most responsive manner [86], [87]. This performance includes on time delivery of products, availability of product and the capacity of supply chain to deliver [88]. Performance of your supply chain affects more than just internal organizational borders; it also has a big impact on your business's sales, accounting, and employee and customer satisfaction [89]–[91]. Businesses may improve their operations and build a solid logistics system by setting and monitoring particular KPIs across the supply chain [92]–[95]. However, maintaining a healthy business across all departments also enables you to meet revenue and growth targets [96].

3. LITERATURE REVIEW

[97] Evaluated Just in case strategy and Push strategy goes hand by hand as the operational capability of the both strategies is same. Just in case helps organizations to reduce the cost of inventory, whereas; Push supply chain strategy actually goes for the make to order principle [98]. Just in case inventory production principle is important for smaller companies in the automobile sector too [99], [100]. A research study was carried out in Indian University where it was revealed that big automobile companies have the ability to sustain the losses due to high inventory or rental costs of their storage or warehouses [101] but smaller companies do not have the capacity to bear such expenses and for this reason, JIT is an important indicator of an efficient supply chain for smaller companies as well [102]–[104]. They do not have to make a huge investment for buying a rental warehouse or spending money on damaged products [105], [106]. This is one of the reasons why smaller companies have made it mandatory to implement a JIT production technique at their workplaces [107], [108]. With the passage of time, the demand and supply rule will get more advanced and efficient and thus this will greatly impact in the efficiency of supply chain management systems of big and small companies around the world [109], [110]. Since the competition in the markets is getting rigid, organizations are investing in less risky investments and thus JIT is one of the least risky investments as it strengthens the supply chain efficiencies [111].

[112] evaluated JIT strategy has improved the operational capacity of supply chain performance. Cash flow management is one of the most important principles in supply chain and finance [113]. The reason is that that cash has a very important role in the development of companies because when companies go bankrupt, they do not have enough cash to save their businesses and to pay for the expenses [114]–[117]. For this reason, JIT principle allows companies to have an efficient cash flow management because they do not have to spend their money on a lot of items and products to store in the warehouses and instead they can spend the working capital on their day to day expenses at the workplaces [118]. Studies have revealed that those companies which have positive working capital have efficient supply chain systems than those companies which have negative working capital. And working capital is positive in most cases when companies have implemented JIT production principles at their workplaces. As it has been discussed, Toyota was the first company to introduce and implement JIT principle technique at its workplace and the other companies have successfully followed Toyota in this regard. The positive working capital

allows companies to spend money on more important expenses i.e. petty cash funds, rents, utility bills [119].

[120] examined that Push supply chain strategy has a direct impact on supply chain efficiency of the organization because it reduces the extra inventory cost and production cycles of an automobile company and thus the company does not have to spend money advertising and promotion techniques to attract the customers [121]–[124]. The supply chain process is smooth because the payments and the orders are received on time and the manufacturing takes place well ahead of time and the final product is delivered to the customer in the allocated time [125], [126]. This is a perfect way to retain the efficiency of the supply chain system.

[77] stated the relationship between JIT and Push chain strategies have increased the supply chain performance. Producing a large of inventory and storing it in warehouses often leads to damaged products [127], [128]. For example, according to an estimate, Toyota had to face a loss of more than \$1 million in annual terms because of producing a high number of inventory and storing them in warehouses, Toyota had to spend a big amount of cost. The production mistakes were there because more production meant more defected products with the six sigma rule and thus the company was losing its name in the market [129], [130]. For this reason, the JIT inventory principle was introduced where the production was limited according to the demand of the products. The less amount of production meant that the defected products were less in number and thus things were in order [131], [132]. This was a huge achievement for Toyota because it bearing non-recurring expenses on an almost regular fiscal periods. Things took a turn for Toyota and the company was able to meet its objectives and targets on time. Just in case inventory has proved to be a source of competitive edge for companies no matter small or large in the automobile sector globally and Toyota is the perfect example. The Push supply chain strategy model is mainly used for high end products in automobile industry. The companies in automobile sector of high end products go for make to order strategy because if the order are not placed or put by the customers, they usually do not manufacture the products [133]. For example, Porsche is a high end product for rich customers and thus the company does not usually manufacture it unless there is a demand placed by the customer. The payments are received in advance and Porsche manufactures the product for the customer. This is the perfect example of Push supply chain strategy. The automobile companies had to pay higher rental costs for their storage spaces because the lined up

inventory was huge. But after properly identifying and calculating demand, the automobile industry was able to reduce the number of lined items in its warehouses and for this reason, a huge chunk of cost was saved with the help of this production technique. Slowly and gradually, this production technique got fame and spread over the entire globe because it had a positive impact on supply chain performance of companies and that's why a number of companies were adopting this technique to have a competitive edge against its competitors in the market [134]–[136]. Waste reduction is an important concept in supply chain management and lean methodologies. With the help of implementing a Just in case production technique, the automobile industry reduces its waste reduction [137]. The reason it that if there a large number of inventory lying in the warehouses or storage houses, it become obsolete and damaged and for this reason, companies have to spend a huge chunk of cost to bear the losses. While after the successful implementation of Just in case production technique, Toyota was able to save a huge chunk of cost because its products were not getting obsolete or depleted and thus the profits were automatically rising [138], [139]. The investments in old stocks are no more there and for this reason, a big number of operational costs of companies are saved. This is being done since long and for this reason, businesses are thriving in market. Toyota has gained a competitive edge in the market against its competitors especially in the Japanese markets because it had an efficient supply chain performance and this was mainly due to an efficient implementation of Just in case inventory principles which was one of the widely accepted techniques.

3.1 General Research Model

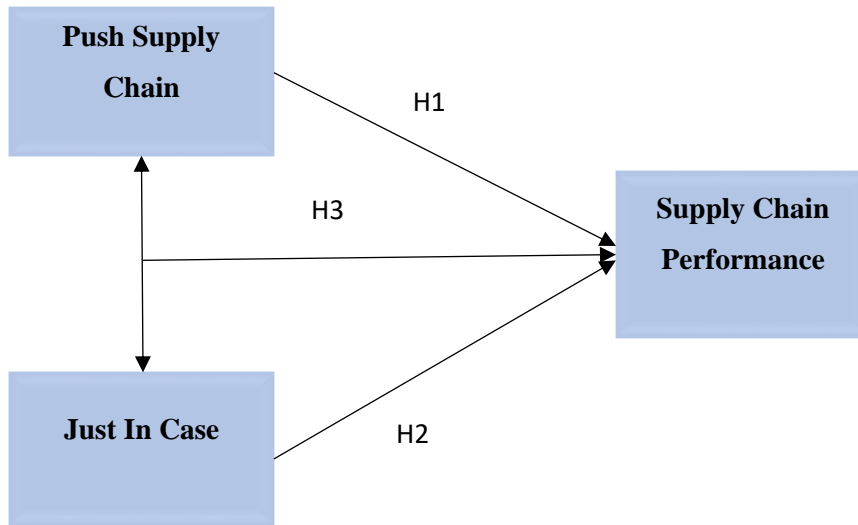


Figure 1: Conceptual Research Model

4. DISCUSSION

It has been determined that the Push supply chain strategy directly affects the organization's supply chain efficiency because it shortens the production cycle and lowers extra inventory costs for an automobile manufacturer, reducing the need for expensive advertising and promotion strategies to draw in customers. Because the orders and payments are received on time, the manufacturing is completed well in advance of schedule, and the finished product is delivered to the client within the allotted period, the supply chain process runs smoothly. This is the ideal method for maintaining the supply chain system's effectiveness. In contrast, the push processes are simpler to manage the overall supply chain processes, even in terms of corporate communications flows, as they are entirely controlled by the originating company in terms of content and appearance times. However, the little control that may be exerted over these communications is supported by the technologies and their activities, which are independent of progressive restrictions. Therefore, the supply chain strategies are suggested to be significant in order to employ the technological interactions among business operations and supply chain performance can be improved by the push supply chain or just in case strategy.

5. CONCLUSION

A condition shared by many industrial, commercial, and service sectors today that forms the basis of competition in highly competitive global markets is the ability to work with low costs, very short deadlines, provide customized responses to customers, while also maintaining control over the economy of operations. The gap between companies founded on the scope of their operations and those founded on their responses to the market has narrowed as a result of the integration of JIC and push strategies into corporate management for the purpose of improving supply chain performance. However, this has forced businesses to fundamentally rethink their tangible and intangible processes in order to keep up with the competitive system and raise the supply chain strategical progression.

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IMPACT OF INFORMATION TECHNOLOGIES CAPABILITIES AND INFORMATION SYSTEM CAPABILITIES ON BUSINESS PROCESS MANAGEMENT

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ABSTRACT

One of the top concerns of managers in the current business environment is to be responsible for the best organizational performance. In order to take the required actions to attain the level of performance that would maintain in the market and help to achieve their goals, they continuously examine the performance and compare it to the competitors. The business process management system offers a platform for carrying out organizational procedures, the workflow based on processes of the organization, in a fully automated way with help of effective information sharing to the customers using IT capabilities. This research can put the efforts to explore the impact of information sharing and IT capabilities to enhance business process management.

Keywords: *IT Capabilities, Information Sharing Capabilities, Business Process Management (BPM).*

1. INTRODUCTION

Business process management is a strategic method in which a corporation takes a step back and have a look fully or independently at most of these procedures [1], [2]. To establish a much more productive and successful organization, it evaluates the current situation and explores areas of change [3]. The science and art for supervising when job is done inside an enterprise to achieve optimal performance and also to seize opportunities for change is Business Process Management [4]–[6]. In the sense, based on the organization's priorities, the word 'improvement' can have various meanings. Common examples of targets for progress include reduction in costs, lowering of implementation duration and reduction of margins of error. Reforms for change will be one-off, and they also demonstrate a more ongoing existence [7]–[12]. Notably, BPM should not be about enhancing a way individual operations are carried out. Instead, it's really about controlling whole systems of events and activities even choices that eventually enhance organizational performance and its clients [13].

Throughout the study, a fundamental assumption is that now the success of the organization can be clarified for how efficiently the company uses knowledge of information technologies to develop its competitive advantage [14]–[17]. Since process innovations are experience and knowledge based [18], we could be improved by the successful utilization of information technologies capabilities [19].

In a way to provide information for practice, an information system is an integrated series of elements for data collection, delivery, storage, and processing [20]–[27]. This is necessary to emphasize that this data is needed both for management and operation in corporate organizations as well as other organizations [28], [29]. Almost all of the information systems in modern organizations are designed on computer and telecommunication information technology [30]–[32]. These are information systems generated by computer.

1.1.Problem Statement

Information technology promotes business innovation, which results in more creative apps, faster processing, better data storage, and greater information dissemination [33], [34]. Whereas, the significance of information sharing capabilities has also discussed in various studies with lack of

some factors. In order to cover that aspects, this research is aimed that is used to increase more knowledge and information in the field of business management.

2. LITERATURE REVIEW

Business Process Management has been inspired by business administration and computer programming theories and applications [35], [36]. Business Process Management was rooted in process-oriented movements and has been known as a theory of management by late 1990 [37]–[39]. So many management concepts and procedures have been correlated with studies examining business process management [40]–[45]. In a technological and organizational system, a business program is a series of tasks which are carried out in collaboration [46], [47].

By the operations and implementation restrictions among them, the Business Process Management framework was specifically represented by the business method [12], [48]–[50]. When Business Process Management was established, individuals could evaluate, enhance and enforce [51], [52] Business Process Management [53][54]–[56]. Typically, highly educated people, company rules, and established protocols have conducted the business process manually as normal [44], [57], [58]. By implementing information technology such as the Business Process Management System to coordinate activities associated with the business, the organization now has more extra benefits [59]–[61]. There are four primary steps in business process management.

It is the first step in business process management and because of its efficacy and improvement, each business model is analyzed [62]–[64]. The aim of this step is just to record information and recognize development opportunities. Analysis means going with a fine-toothed comb through each mechanism seeing what's performing and which are not [65]–[67].

In the second step business process management practitioners continue to generate ideas about how to better address the issue or refine the method as possibilities for change were found [68]–[70]. This will be the opportunity for high expectations to be established and aims set very high [71], [72]. Throughout this phase, procedures must be designed as just an ideal image of oneself.

Next in the third step, incorporate the models or model how well the planned changes will affect the mechanism as well as the method as a whole [73]–[78]. Based on the method being developed,

modelling methods will differ, but development and testing or running testing process are often a good way to see whether the proposed changes will affect procedures [79]–[82].

It is the last step, when the modelling has demonstrated that the improvements proposed have a beneficial effect on the process as well as the organization as a whole, it is time to introduce the improvements and bring it all things back together [83]–[88]. It can be a daunting task to incorporate new methods or changed procedures [89], however if the phases related to all of this were productive, so they understand the work was worth their ultimate result [90]–[92]. Information technologies capabilities to enhance the capabilities of the business and also a fundamental assumption is that now the success of the organization can be clarified [93]–[95] for how efficiently the company uses knowledge of information technologies to develop its competitive advantage [96][97]. Since process innovations are experience and knowledge based, we could be improved by the successful utilization of information technologies capabilities [98]–[100].

The information system is an integrated series of elements for data collection, delivery and storage and processing [101]–[104]. This is necessary to emphasize that this data is needed both for management and operation in corporate organizations as well as other organizations [105]–[109]. Almost all of the information systems in modern organizations are designed on computer and telecommunication information technology [110], [111]. These are information systems generated by computer.

2.1. Critical success factors in business process management

Critical Success Factors are the areas of the organization or initiative which are integral to business success [112]–[114], usually considered as Main Results Areas. Inside the company, recognizing and transmitting critical success factors means making sure that the corporation or initiative is centered on its targets and strategies [115]–[117]. Many critical success Factors have identified in different studies and researches so some of them are discussed below:

2.1.1. Performance Measurement

The measure of performance refers to measurements of the performance of processes, projects and people [118], [119]. The efficiency of the processes should be correctly assessed to correlate them

with the objectives and targets and to select the appropriate change mechanism in addition to assessing the targets and objectives [120]–[123]. To track progress and ensure that the targets are accomplished, business process management projects need certain benchmarks and standards.

2.1.2. Information Technology

The Information technology is an organized set of consensus decisions on policies & principles, services and common solutions [124], standards and guidelines as well as specific vendor products used by Information technology providers both inside and outside the Information Technology Branch[125].

2.1.3. Information System

The proper system for the information is very important and also skill people are required for it to run the information system in a meaningful way and also fruitful for the corporation productivity [126]–[130]. The information system is a critical factor because if this system work correctly it will enhance the productivity of the corporation and also attract the customers from outside and also inside the corporation can convey the message effectively [131].

2.1.4. Top Management Support

The support of the top level management can have a most important critical factor to enhance the business process management and it can motivate the staff [132] and they can work with full dedication and it can enhance the productivity and development of the corporation [133].

2.1.5. Stakeholder Involvement and Employee Ownership

In the corporation commitments stakeholder engagement is an important factor. The employees can make choices totally independently which can lead to excelling with lesser growing number and make the employees belonging to the company or corporation [134], [135].

2.1.6. Strategic Alignment

The Current leadership participates actively working for the continuous quality improvement and the aims of business processes are extracted from and related to strategy of the company to make the corporation develop [136]–[138] and bring benefits for the corporation and also enhancement of the business process is often the strategy of top leadership discussions and work on the decision making to boost up the corporation productivity [139].

3.1 General Research Model

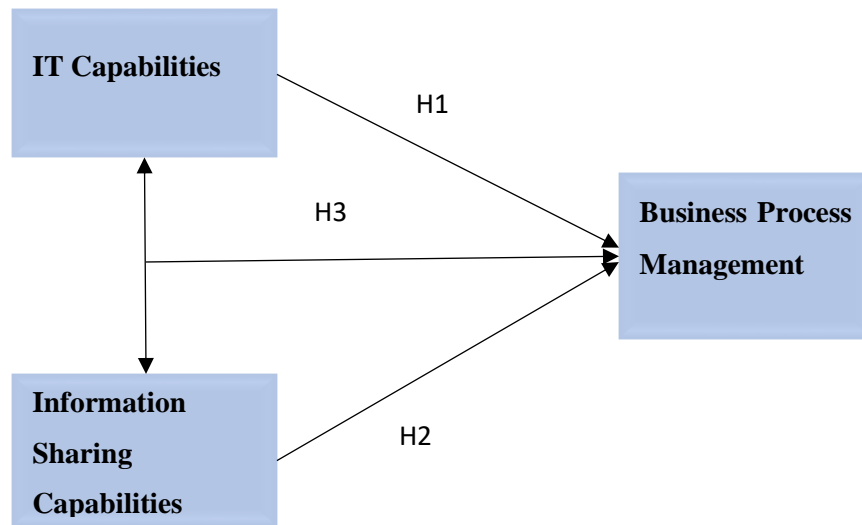


Figure 1: Conceptual Research Model

3. DISCUSSION

Due to aggressive global competition, quick technology advancements, and an increase in the variety of products available today, companies compete with one another in dynamic, complex, and unexpected contexts in an effort to boost organizational performance. In such a scenario, numerous top businesses are utilizing information technology to turn a profit and stay ahead of the competition. In this research the impact of information technology capability and information sharing capability alignment on company performance was discussed in light of the significance of company performance. According to earlier study described in the research background the integration of IT capabilities can improve the business process by incorporating technology based function in the business operations that enhances the productivity, improves cost efficiency and increase workforce interests that enhances business efficiency. On the other side, the impact of IS capabilities has investigated in previous studies that presents the better information flow in the organizations (internal or external) can boost the business activities that directly effects the organizational competitiveness.

4. CONCLUSION

A need for corporate success is the alignment of IT and business requirements. This system, which involves negotiation, ongoing communication, and specification, is one that can help with creating such alignment. The implementation of effective information sharing (IS) strategies and IT capabilities can govern the business operations in the righteous way whereas, the IT capabilities gives everyone involved in the execution of complicated projects a foundation for ongoing communication. As project managers are aware, information sharing is also essential to the successive business projects. Therefore, IT capabilities and IS capabilities increase the effectiveness of businesses.

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IMPACT OF CHANGE MANAGEMENT AND COMMUNICATION ON BUSINESS PROCESS MANAGEMENT

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ABSTRACT

The teams that are employed by the firm impacted by the implemented change, whether it is a change in technology, leadership, or processes. Through education and acceptance of the need for change, change management strives to move these teams from the present condition to the future state. Business process management is the association of management and IT, and it defines methodologies, strategies, and tools that let the business plan, implement, monitor, and evaluate its operational business processes. Therefore every business require change within the business operations to maintain competitive advantage. Effective communications has a core value in maintaining an adaptable change to the workforce and easy to acquire. This research is providing the subsequent set of knowledge to the business practitioners and addition to the literature of business studies.

Keywords: Change Management, Communication, Business Process Management.

1. INTRODUCTION

Business processes Management is a method of transforming business activities with electronic and digital solutions [1], [2]. Outsourcing of business processes allows for inside and outside and in-depth review of current business processes [3]–[5]. The aim is to create a developed computerized design which enhances performance, decreases prices and enhances production [6]–[8]. Both on current and emerging companies, business process plan is critical. It is also called Reengineering of Business Processes [9]–[12]. This is a collection of interconnected activities that help businesses maximize their current business processes to manage with upcoming requirements in operations and organizations [13]–[17]. For an organization successful business method saves and earns profit.

The business process management has been used not just in processing to increase the quality and performance of its process of production [18]–[20], but also in work operations like management of human resources [21], advertising, management, selling, decision-making, in which the user of these services may be within or out of the company [22]–[26]. Awareness of process management strategies can support and strengthen key management practices like preparation [27], [28], delegation, communication and analysis [29], [30]. Business process management will not be an exercise that is one-time [31]–[34]. A regular review of a methods should be included and steps taken to increase the overall flow of activities should be included [35]–[37]. All this leads to a long process of organizational evaluation and enhancement [38]–[41]. The steps which is known in the business process management include is the analysis [42], redesigning the model, the process of implementation, monitoring the process, managing and make the process automatic.

1.1.Problem Statement

Change management helps employees to understand their new responsibilities and promotes a more process-driven culture by agreeing a company to remain competitive in the marketplace, change management also promotes further company growth [43], [44]. In order to evaluate the importance of communication in business process management, this research is aimed to establish

a systematic review of the past researches to investigate the impact of change management and communication on business process management.

2. LITERATURE REVIEW

The method of change management is the set of operations undertaken by a management staff or program manager to implement change management to a change in order to bring relationship between the changes and make sure the organization achieves its expected results [45]–[47]. We cannot stop the process of change but only we can slow down it [26], [48]–[50]. Changing is primarily affected by the increased competition of globalization that influence most sectors of industry and living beings circumstances [51]–[54]. Corporations and organizations have been made to embrace transition as crucial to sustainability by the notion of globalized actions of corporations [55], [56]. Change management is an integral aspect of one lifetime and often more for many of these companies [57]–[61]. In order to ensure the effectiveness of the change planning and implementation, the principle of change management initiatives at an optimal and desired level [62] is required by businesses [63]–[68]. The effective management of transition would also achieve a competitive advantage both globally and nationally.

It is not necessary to understate the value of communication in change management [69]–[71]. Efficiently and effectively, simply, and reliably, convey the change [72]–[74]. You will make sure that every worker in your company knows what's going on [75]–[77]. When staff recognize it, they will embrace it [78]–[80]. Communication would be an interaction among at least two individuals, whereby communications between individuals are sent, obtained and replied [81], [82]. It is the most effective method for daily life and business management [83], [84]. In companies, communication as well plays a significant role in generating and interpreting messages among staff members through several directional and bidirectional messaging [85]–[87].

Effective communication always helps to build a consistent and competitive business viewpoint for a company using BPM [88]–[90]. Experts claim that good communication allows a firms to grow a consistent plan for accessing its market segment and during implementation process [91].

The impacts of change management and communication are that it can move the company toward a better direction [92]–[94]. Change management can pave the way for the company to bring

dynamic and experience staff to organization or corporation which can make a better impact on the development of the corporation as well as bring new ideas and innovation to the company [95]–[98]. And give change to those who have the potential and energy to bring the company to the peak of development [94], [99] and also work for the benefits of the stakeholders [100]–[103]. And also the process of communication can make it easy to make a better communication process [104] inside and outside the corporation. And the communication flow can make more advance and easily reachable to a number of people on the same time [105], [106]. And a proper channel of communication can remove the ambiguity and the wrong new because a proper channel can make it easy to provide a central process of communication [107]–[109]. Also with the change in the process management can risk the job of many employees and it can create uncertainty among the staff members.

2.1. The Critical success factors of business process management

There are many different critical success factors in business process management that have been found in different researches, articles and journals. Some of the key critical success factors are discussed below:

2.1.1. Change Management and Communication

Management of change works with critical systemic improvements in order to enhance group efficiency and outcomes [110]–[113]. The changes processes, infrastructure [114], staff [115], organizational culture [116]–[118] and structure can be discussed and organization-wide must be shared with the public and communicated effectively [119]–[122]. The whole policy encompasses services for effective management of change and communication regarding business process management initiatives inside the company [46], [123]–[126]. Preparedness for change, knowledge reorganization, familiarity with change management and communication between both the team member as well as the management staff are among key points in this group [127], [128].

2.1.2. Strategic Alignment [129]

- Current leadership participates actively in continuous quality improvement.
- The aims of business processes are extracted from and related to strategy of the company.
- Enhancement of the business process is often the strategy of top leadership discussions.

2.1.3. Stakeholder Involvement and Employee Ownership [130]

Throughout all corporation commitments stakeholder engagement is a vital element. The employees can make choices totally independently which can lead to excelling with lesser growing number and make the employees belonging to the company or corporation.

2.1.4. Information Technology [131]

Information technology can make the business procedure more easy and we can communicate with other in a less time [132] and without wasting the energy and also we can make the contact with the customers and clients beyond the border and as well as advertise our product to all over the world and it is a critical factor in the success of business process management.

2.1.5. Management Commitment and Involvement [133], [134]

In generating incentive for success, securing the requisite resources for high-level management and engagement in business process management efforts is of paramount importance. Tools and to guarantee strategic cohesion [135], [136]. If the change management can make good policies for the corporation and then communication can play their role in a better way and communicated the message and decision of the corporation in a proper way [137] it will have a good impact on the corporation business process management effectiveness if they not do well it will have a bad impact on the corporation benefits [76].

3.1 General Research Model

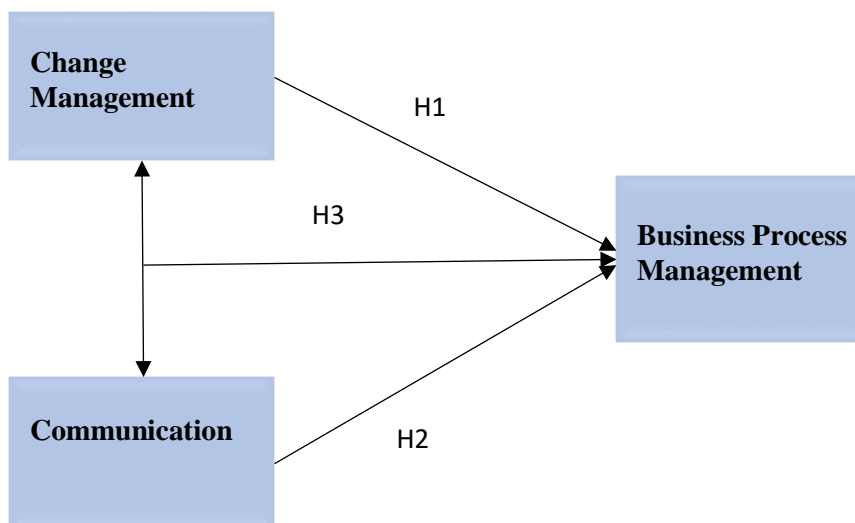


Figure 1: Conceptual Research Model

3. DISCUSSION

The necessity of the change is especially true when it comes to business process management, which is always evolving. Today's society and economy simply move too quickly for an authoritarian and directive paradigm to function. The majority of modern organizations require an organic and systemic reaction to the need for change in order to assure effectiveness that is why business process management is more suitable for today's business needs. Furthermore, this research came up with the findings from literature that presents a long term activities can be the reason of lack of motivation in employees they unable to accept the change that is mandatory for every organizations' health [138]. Moreover miscommunication can also effect the work effectiveness among employees and organization. Ability of employees, project teams, and organizational leaders to better comprehend business processes is one of the key advantages of effective communication. Additionally, participating in the business improvement process with team members is crucial to fostering awareness, desire, and knowledge among them. An efficient communication strategy offers a thorough road map for how the adjustments will be conveyed across the organization. This strategy should outline who will be in charge of sending communications, the target audiences, the main messages, and the delivery method. The supervisors and team members can be given a voice in identifying improvement opportunities through interviews and process mapping criticisms, which will enable them to become champions for change within their domains. Each week, project findings will be shared with the sponsorship teams, helping to gradually identify opportunities and fostering buy-in.

4. CONCLUSION

The effects of change management and communication can be crucial in bringing new talent, ideas, and innovation to the organization. The communication process can also help to clear up misunderstandings and ambiguity both inside and outside the organisation. The effects of change management and communication can have an impact on both the company and the personnel. Additionally, the change in business process enables the employees to be creative innovative and diverse according to the situation. The aim is to make the change's purpose clear to all interested parties, convince them that the proposal can accomplish the change's goals with effective

communication, and convince them that the proposal also includes a challenge that will test their abilities and knowledge as change implementers.

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THE IMPACT OF PROCESS REDESIGN AND AGILE OPERATIONS ON IMPROVING THE QUALITY IN THE SERVICE COMPANIES

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ABSTRACT

Rapidity, reactivity, cost effectiveness, adaptability, and an improvement in the productivity of goods and services are the main goals of the agile supply chain. Over the past 2 decades, the manufacturing and service industries have paid growing attention to this subject as agile businesses offer higher service levels with reduced inventories. The literature on agile operations and business process redesign in the service industries is analyzed in this research. It maps earlier studies in this area across a variety of journals, institutions, and nations. Business process redesign and agile operations are acknowledged as a way to help businesses accomplish fully value-added changes or to increase efficiency. The primary goal of this research is exploring impact of process redesign and agile operations implementations for improvement to increase service quality.

Keywords: *Process Redesign, Agile Operations, Service Companies.*

1. INTRODUCTION

Global project management crews have been dealing with dynamic issues over the past few years that are getting exponentially more difficult as a result of the growing complexity of the jobs they are undertaking [1]–[3]. Organizations must adopt cutting-edge management techniques in place of the more traditional ones in order to meet the constantly changing organizational issues [4]–[6]. In order to improve the services quality and business growth there are number of strategies presented to follow for business progress [7]–[9]. In this research process redesign and agile operations are discussed to examine the impact of these strategies on service sector [10]. Agile operations, often known as AgileOps, is a digital business operating model that builds on DevOps and Agile processes to assist [11], [12] swiftly and effectively adapting to change and redesign the strategies in the organization. Businesses have to restructure and put more of a focus on managing change as a result of competitiveness and globalization [13]–[16]. The primary strategy for company transformation is promoted as process redesign [17], [18]. Business process redesign has provided several large organizations [19], [20] with significant business improvements in terms of quality, cost, speed, and efficiency by leveraging information technology and stressing a customer-driven, process-oriented management approach.

1.1.Problem Statement

Some of the main forces driving change include rising expenses, difficult deadlines, fierce competition, and technology advancements [21], [22]. Since most services are people and process-oriented, implementing change is challenging. Therefore, this research is conducted to explore the investigated strategies and addition to the corporate knowledge.

2. THEORETICAL FRAMEWORK

2.1. Agile Operations

The agile operations have many different types and steps. One of the most popular agile operations is embracing change [23]–[25]. Until and unless organizations do not embrace change, their strategies will always remain the same and eventually they will go out of the market [26]–[29]. This is an important phenomenon to understand because companies need to upgrade themselves so their qualities could be upgraded with time [30], [31]. If employees are not willing to embrace

change, it's the job of the management to implement the change management tactics so that the entire organization could embrace the change [32], [33]. The advantages of change and the effects of not adopting the change should be explained to employees so that they know that embracing change will eventually put them in a better condition than not embracing change [34]–[37]. For this reason, the example of Nokia is here because it did not embrace the change and eventually market forces and competitions eliminated Nokia out of the market [38], [39]. This was a perfect example because Nokia did not realize that people were moving to touch screens and thus it continued to manufacture its old traditional mobile sets and thus the decision cost Nokia and in the end it had eventually pay off in the form of lost market shares and declining revenues and layoffs. Also, in service sector, deliveries matter a lot and they play a crucial role [40]–[42]. Think of Amazon which is the largest online retail chain in the world [43], [44]. Amazon is famous for its frequent deliveries because if the company delivered products very late, people would have preferred to shop physically because they go for online shopping as its not time consuming and is comfortable [45]–[47]. This is one of the biggest examples of agility because frequent delivery is a part of agile operations. And the theory and concept of agile operations suggest that in service sectors, companies should not be delaying their delivery services and time and that's why they should be delivering with a fastest time track [48]. This will enable the organization to develop a strong brand name and image like Amazon because the Jeff Bezos organization is famous for the delivery of its products in a very short span of time and that's why it has a big market share [37], [49], [50] and is eliminating all the small retain companies around the world because it is expanding its market size across the globe and thus Amazon is everywhere especially in the US markets [51] where the research studies have shown that its presence is a blessing for many. And thus agile operations are directly proportional to service.

2.2. Business Process Re-Design

[52]–[54] stated that business process redesign has been helpful for many organization around the world especially the service sectors [55]. When companies realize that their operations are not going according to the strategies they have developed, they sooner or later change their business process designs and thus it helps them in achieving the required market share [56], [57]. This has been done by many organizations in the world. Consider the example of Apple where the company was not doing well in the market [58]. The only thing the company did that it took things outside the box and realized that people needed a smart phone or a touch screen [59], [60]. This was a

completely new process implemented by Apple because the process redesign helped the company go to new heights [61], [62]. And today Apple is one of the biggest companies in the world in terms of market capitalization and revenues [63]. Now Apple has the same style and process design but since it was the first mover in the market, its services have been labeled as exemplary and it has grabbed a huge market share in the global markets around the six continents [64], [65].

The process redesign is not an easy and a flexible task because companies have to go through several measures before implementing a new strategy or a design and its impact is often positive on the service deliveries [66], [67]. The reason is that companies have to take several measures before actually implementing a new process redesign [68]. There are implications involved because the organizations have to manage their resources and budgets. Not every company has unlimited budget and resources and that's why things take time for organizations [69]. The same procedure was followed at Apple as well where the Apple management went through several different steps and strategies before implementing a new process redesign [70], [71]. This was a helpful strategy because all Apple needed was to carefully analyze the processes and see where the changed needed. The company did not have to change the whole process but a certain portion of its manufacturing practices and thus that new strategy too Apple to the top of the world. Many research studied published in German institutes have suggested that process redesign and service quality are directly proportional [72]–[75].

Whenever companies go for new designs, their service quality enhances and that's why they see a surge in their profits [76]–[78]. But the main thing in process redesign is to carefully read the entire new process and search for the loopholes because once implemented [79], [80], there is no going back and that's why companies do not want to lose their market share and customers in the markets by implementing a wrong process redesign strategy [81]–[83]. This has allowed many companies to go for new processes and many companies have even failed as well. The example of Thomas Cook is there which was bankrupted a year ago. The company could not implement a perfect process redesign strategy and thus it lost all the market share in the market in a very short span of time and was sealed from the market.

3. LITERATURE REVIEW

3.1. The impact and relationship between the business process redesign and agile operations and service quality.

It has been investigated in previous studies, the quick service delivery assists clients with small enterprises in implementing efficient strategies gradually [84]–[87]. The idea of user stories makes it easier to test requirements that are clearer, more concise, and lower in size [88]. The phrase "definition of done" identifies the objective and ensures that every stage of organizational development is carried out, from analysis to testing and deployment [89]–[91]. The need assessment and forming the organizational strategies into the new structure can enhance the business performance [92], whereas the customer retention and satisfaction has great impact on business competitiveness. [13], [93]–[96] evaluated that process redesign and agile operations have an impact on the quality of service companies [97]–[100]. The agile operations have a direct relation with the independent variable in this research [101] i.e. business process redesign. The reason is that agile operations allow the companies to mold themselves according to the need [102]–[104]. Everyone, from business managers to middle and high management [105]–[107], should share the goal of a "100% agile shop." The game plan is a must for participation for all the supporting teams, especially the marketing teams [108]. We established a company-wide training program that contributed to the harmony's expansion [109]–[113]. To go above and above, successful organizations established a center of excellence with a knowledgeable group of enthusiastic agilest [114], [115]. The agile team took steps to ensure the need of change and where are the discrepancies [116]–[118]. Let's take an example of Apple [119]–[122]. The company had to implement a new strategy and thus it went to process change. But if it was not for the change management [123], [124], the company would not have been successful because a lot of employees in the companies do not want to embrace change when there is a new process etc [125]–[129]. The same scenario was seen at Apple where people were not willing to embrace the change but the change management practices at Apple were efficient and thus the company was able to let its employees embrace the change and that's why the strategy was successful in the end [130]. Moreover, technical excellence is also a part of agile operations [131]–[134]. For Apple, it was important to have an advance technical understanding and knowledge of the items and processes and that's why Apple needed to implement the new technological advancements [135]–[137]. According to many research studies carried out in European institutes, Apple is one of the most

technically advanced companies in the world because it has spent an unlimited amount on its technological understanding and advancements.

3.1 General Research Model

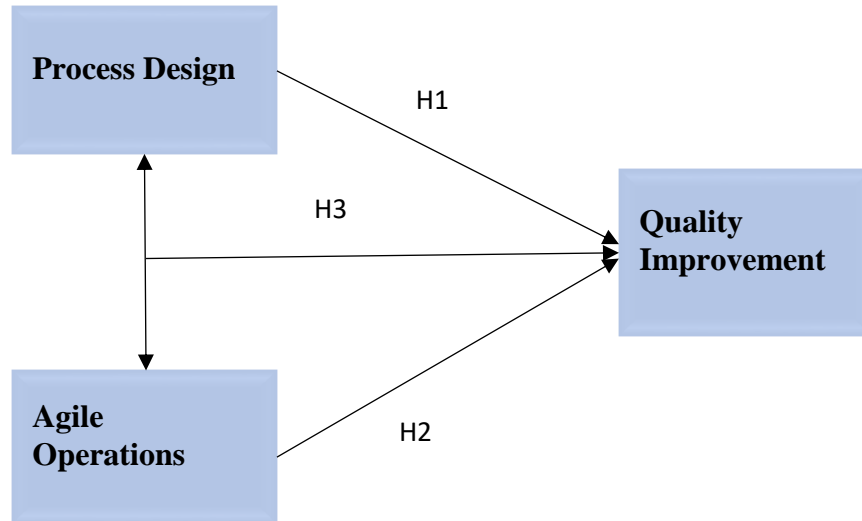


Figure 1: Conceptual Research Model

4. DISCUSSION

In the light of literature and scientific researches it can be said that the efficiency in the service sector can be increased by redesigning the business strategies, the better implementation of the managerial strategies workflows and processes within and across organizations are analyzed and designed as part of the business process. To achieve revolutionary changes in performance measurements, existing business processes must be critically analyzed and completely redesigned. The efficient strategies can include customers in the process of developing an organizational systems and services. Improved services on the basis of customer feedback by initiating competitive strategies that can help to retain the customer intention and business sustainability. Agile offers a platform for informal communication that improves client relationships. Long term contracts and better customer engagements are produced by agile teams.

5. CONCLUSION

Business process redesign can be summarized as the process of improving business processes by identifying and concentrating on them, then streamlining them with the use of contemporary technology and the involvement of the entire organization. This indicates that you are not just focusing on certain aspects of how various technologies are organized. Moreover, the development of the business process, technology, and organization must occur concurrently with the implementation of redesigning and agile practices. In service sector, technologies that are accessible to digitize the organizational operations need to be continually evaluated by the management. Although organizational development service providers prefer using agile practices development that employ to reduce the cost, and increase the services efficiency. Additional requirements to redesign the process enable an organization operations should be used because design team managers need to have a common understanding of the operating environment and high-level requirements for customer satisfaction.

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THE IMPACT OF SUPPLY CHAIN CAPABILITIES AND BUSINESS PROCESS MANAGEMENT ON FIRM PERFORMANCE

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ABSTRACT

To make supply chains more flexible and effective, firms have recently been obliged to integrate closely with their supply chain partners. This has enabled effective information sharing between supply chain members and improved supply chain efficiency. As a result, business process management is crucial to supply chains capabilities that has an ultimate impact on firm's performance. It has become crucial to figure out how to improve organizational performance through supply chain capabilities in a challenging and uncertain supply chain environment. Although, business process management also has a greater impact in improving organizational performance. Numerous practitioners and academics have examined the implications of business process management on businesses' performance from a variety of angles, this research has examined cause-and-effect interactions from the standpoint of supply chain capabilities.

Keywords: *Supply Chain Capabilities, Business Process Management, Organizational Performance.*

1. INTRODUCTION

In extremely competitive business contexts, individual companies now strive as members of different supply chains rather than as independent organization. Supply chain is one of the most important functions for any organization and this is because of the reason that efficient supply chains allow organizations to cut down their costs [1], [2]. Supply chain partners must integrate and share resources and capabilities with both upstream and downstream supply chain partners in order to get the desired benefits in such dynamic organizations. Since these can only be used to produce value when shared with supply chain partners, keeping resources strategic information and within the firm is unlikely to be of significant value to any organisation [3]. Similarly business process management is described as the corporate process management is a broad topic and, by definition, a dynamic one [4], [5]. Roles, policies, strategies, business goals, and other elements it comprises are constantly changing [6]. Having great importance to the organizational effectiveness it requires to become more progressive to upgrade process management [7], [8]. Therefore, this research incorporates the facts considering the importance of supply chain capabilities and business process management to measure firm performance.

1.1.Problem Statement

Business process management might be difficult to understand. Depending on an organization's size, process maturity, level of technical skill, corporate culture, and resources, its practice differs greatly. The application of business process management with implementation of supply chain capabilities can be considered as serious concern of organizational performance.

2. THEORETICAL FRAMEWORK

2.1. Supply Chain Capabilities and Firm Performance

[9] stated the effect of supply chain capabilities on firm's performance has great impact, they allow the firm to operate efficiently in the market. For example, the just in time inventory management system allows firms to reduce their storage costs [10]–[12]. Since the firm performance increases with the help of supply chain capabilities, the relationship can be termed as direct relationship.

And hence the importance between the two variables increases. Many organizations have seen a rise in their storage costs because of improper production and thus many organizations have witnessed that firm's costs have gradually increased because the storage costs are very high and companies have to pay a huge cost for its security as well [13]–[16]. The product lying in the storage houses get depleted and that's why the companies have to bear the expenses.

Product replenishment is taken as one of the most important supply chain capabilities for any organization [17]–[19]. According to the research studies carried out at Virginia University, product replenishment allows companies to efficiently monitor the sales of their products and thus it allows them to effectively produce the required amount and thus it reduces the extra production costs [20]–[22]. This was a very important research because it showed that since the companies need to have an efficient supply chain capability [23], reduction in costs was the ultimate result. For this reason, a lot of companies have implemented the product replenishment [24], [25]. The automatic updates allow the companies to historically calculate the supply and demand of the products and thus it allows them to understand the right number of demand of the products [26]. Since the replenishment is done on a rapid basis, the companies have the ultimate idea that which location needs the exact number of product requirement and thus it decreases their storage costs too [27]–[29]. For this reason, a research study was carried out at Oxford University where the researchers and publishers indicated that when the firm implements the right number of supply chain capabilities at the workplace [30], [31], the performance of the company increases automatically and thus the company grows and prospers in the market [32]–[38]. Moreover, these authors have emphasized that supply chain capabilities play an important role for the organizations because since the competition is rigid in the industries, one of the effective ways for companies is to lower down the operational expenses and that's possible with the help of supply chain capabilities [39], [40]. And for this reason, the relation between supply chain capabilities and firm performance has always been defined as a positive relation.

2.2. Business Process Management

Modeling, analyzing, and optimizing entire business processes is the practice of business process management (BPM), which may be used to achieve a variety of strategic corporate objectives [41]–[43]. Hundreds, thousands, or even more tasks, together with the approvals required to complete them, could be included in these corporate procedures [44], [45]. They usually involve

employees, IT systems, and other tools used by the organisation, in addition to business process outsourcing firms [46]–[49]. A well-designed business process divides these responsibilities into manageable, repeatable phases that employees may use to produce consistent results [37], [50], [51]. By supporting businesses in estimating the resources they will need, the repeated procedures lessen the risk of under- or over-allocating resources. Measuring the steps identifies weak points and bottlenecks, pointing to opportunities to improve the business process [52]–[55]. Business process management has five different steps and thus the process has a lot of value [56]. The planning and budgeting process of business process management has an effective relation with supply chain capabilities [57] because the organization is able to plan and budget the resources with the help of supply chain capabilities i.e. demand management, replenishment, order management, process optimization, just in time inventory and other capabilities too etc [58]–[62].

For organizations, the sustainability matters because as the competitions in the industries have got rigid, many companies are finding it hard to survive the market competition and to remain in the business [63]–[65]. Gone were the days when businesses only had to go for productivity in order to survive. There are many different aspects of business which the organizations have to look into in order to survive the competition and to retain their market shares [66], [67]. For this reason, a lot of research has been done on these topics to effectively explain the relationship between these variables [68], [69]. As companies have been expanding their businesses into different territories and regions, it has become important to understand the business rationale and to explain things in a much better way [70]. As the organizations are going towards automation and digitalization, these processes cannot be completed without the help of supply chain capabilities [71]–[75]. Also, these processes provide a competitive edge to the companies because unless the competitive edges are not there, companies do not do well in the market [70], [76].

According to a research findings, companies have to eliminate the complications from their processes and that's why an efficient business process management is the solution. The supply chain capabilities are very important [77]–[80] because the process allows the companies to identify the area to be improved and apply new strategies. The holdups always slow down the process and this is the reason companies have to eliminate them in order to improve their production capacity and to decrease their operational expenses [81]–[84]. It is clear from the fact the supply chain capabilities and business process management have a direct and positive relation

with each other because an enhancement in the supply chain capability will ultimately improve the business process management [85]–[88]. The references in this literature review have been taken from authentic published articles and thus their credibility cannot be questioned. The writers have presented their true opinions on the matter and thus these articles have a wide viewership.

2.3. Business Process Management and Firm Performance

Since some businesses' business processes became too large and complex to manage without the aid of automated instruments, business process management solutions were developed to aid in significant business change [89]–[92]. These enabling business process management solutions have advanced along with the growth of AI, machine learning, and other supposedly intelligent technologies, providing fresh approaches to discovering, developing, measuring, improving, and automating workflows [93]–[95]. The traditional focus of (BPM) on back-end processes has changed with the rise of digital business to now encompass the optimization of customer and employee engagement systems [90], [96]–[98]. This is considered as the most crucial step in the business process management [99] because if the companies are not able to analyze the suitable strategies, the whole implementation might go wrong and thus this will affect the company's operations and ultimately its profits too [100]–[102]. When the companies have properly analyzed the businesses, they go for the implementation phase. The process implementation plays an important role for the organizations because the whole future of the organization is dependent on the business strategies [103], [104]. For example, when Nokia analyzed its processes were old and rusty and it needed to reform the processes, it implemented a big decision. Although the company had to suffer a lot in the beginning, the decision proved successful and thus Nokia regained a small percentage of its lost market share [105]–[107]. This allowed Nokia to grow and go outside the Finnish geographies too. After the implementation, companies have to compare the results and evaluate the performance [108]–[110]. This is a major step too because it lets the companies realize that where did the processes go wrong and how they may reestablish their processes [111]–[113]. Also the performance evaluation allows the companies to understand the weaknesses and the bottlenecks of the process and this allows them to improve them so that they could eliminate the hurdles [114]–[117]. As research studies have claimed, supply chain strategies enables an organizational management to assess the functionality and employ the best suited strategies to gain more advantage and organizational performance [118], [119].

3. LITERATURE REVIEW

The goal of the literature review is to compile and create structured references for the research problem from contemporary research publications, books, and other credible and valid sources of information.

3.1. Impact of Supply Chain Capabilities and Business Process Management on Firm Performance

Content that in today's business environment, a firm is driven by four key forecast factors: inventory planning, supply chain efficiency, and information accuracy [120], [121]. The firm may efficiently and successfully offer the product or service to the consumer at the ideal time, location, and price with the help of proper management of these variables [122]. Various researches show that increased supply chain practices can boost competitive advantage and increase organizational performance [123], [124]. Additionally, competitive advantage can directly and favorably affect how well an organisation performs. As the customers' preferences and likes are also changing with time, the implementation of supply chain and other logistical operations has become necessary [125], [126]. The supply chain capabilities allow businesses to effectively resolve their crisis and to implement a proper business model in the end [127]. Since the implementation is a huge step, businesses have to do proper evaluation too after the implementation and thus it allows businesses to understand those processes which are affecting the operations of the business i.e. bottlenecks [128], [129]. For businesses, flow time and tact time are important and thus with continuous improvement with the help of six sigma at the workplace, it has been researched and proved that companies improve their flow and tact times [130], [131]. Consider the example of Japanese company, Toyota. The company manufactures car after every six minutes i.e. the flow time. Toyota was able to improve its flow time because it studied the business process management in detail and analyzed the processes which needed to be changed i.e. the bottlenecks and thus it implemented a strategy then in the end and evaluated the results [132]–[134]. The firm's performance got enhanced in the end because the organization was successfully able to understand the processes and to identify the loopholes [135]–[137]. And thus the Toyota model got popular and a lot of time companies started to follow and imitate the model of Toyota because it was the best in the market and companies knew they could certainly enhance their processes with the help

of Toyota's model because it guaranteed an increase in the firm's performance with the help of business process management and supply chain capabilities.

3.1 General Research Model

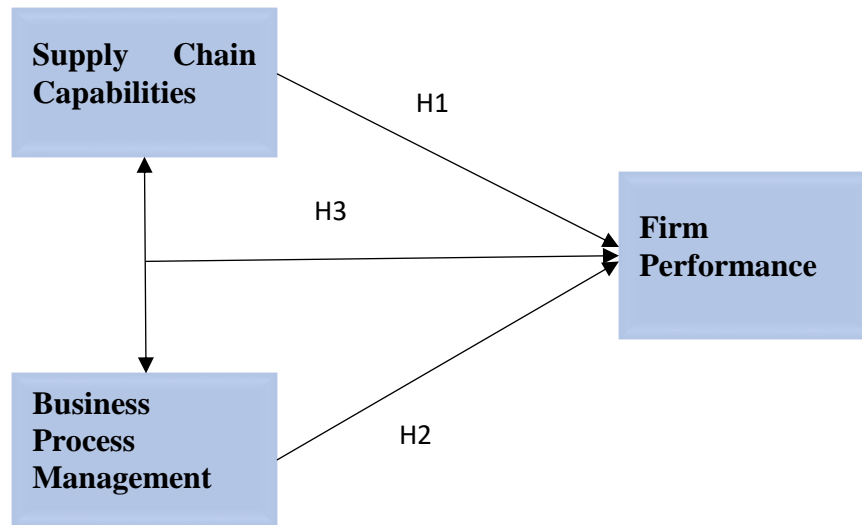


Figure 1: Conceptual Research Model

4. DISCUSSION

The top notch to evaluate the business performance the supply chain performance assessment in order to clarify current procedures, identify any gaps, and provide a research agenda for the future. This research also presented an overview and comparison of business process management and supply chain capabilities to improve the organizational performance. According to several studies, efficient supply chains use integrated measurement systems as a means of achieving their operational goals. This research shows that it is crucial to do additional study in order to establish the reliability of many measurement setups. The intricacy of these operations, makes it challenging to choose appropriate supply chain capabilities that could be implemented after analyzing the need of improvement in business processes that has a direct impact on firms' performance.

5. CONCLUSION

The study discovered that efficient supply chain management can lead to improved organizational performance. Only if the supply chain management is planned to meet the numerous planning, inbound, outbound, reverse, and order management requirements can it be effective. According to the research findings, the two main factors that have a major impact on organizational performance are supply chain capabilities and business process management. The theoretical results suggest while examining organizational performance the need of assessment and supply chain capabilities required to assess, particularly in the manufacturing companies because the efficient manufacturing always require strategies need to be productive.

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IMPACT OF BUSINESS PROCESS MANAGEMENT AND LEAN OPERATIONS ON COST OF QUALITY

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ABSTRACT

Business organizations are increasingly confronted with a variety of challenges in a world of intense globalization and digitalization, including rising costs, fierce competition, quickly advancing technologies, more demanding and unpredictable consumers, and, in social terms, shifting societal demands. The efficacy and efficiency of business organisation management are realized within this environment. This research is objected to study the previously investigated areas defining the relationship of cost of quality and business process management, the contemporary issue is to analyze lean operations impact on cost of quality to maintain business process management and cost effectiveness, and this research attempts to establish the relationship. Literature reviews and critical evaluation of the relevant scientific sources make up the research convenient.

Keywords: *Business Process Management, Lean Operations, Cost of Quality.*

1. INTRODUCTION

Combining business process management (BPM) and Lean operations is one of the most effective strategies to boost organizational performance and increasing cost effective manufacturing [1]. Lean operations uses statistical analysis to drive quality improvements, whereas business process management stresses process optimization and automation to achieve performance improvement [2], [3]. Although the two techniques were once thought to be mutually exclusive, several businesses have learned that integrating business process management and lean operations may provide impressive outcomes, and this study tries to establish this connection [4]. BPM has a solid foundation in software program that may be used to simplify and industrialize operations [5], [6]. BPM makes it possible to connect several groups or departments that have an impact on processes at the software level [7]. Lean analysis is used to assess business procedures and activities, paying special attention to how changes in any one area of the system affect the entire company and help to reduce the production cost [8]–[10]. Every business requires to eliminate cost by maintain product quality, there are various strategies that can be implemented to reduce the production cost by maintain business process management and quality management [11]–[16]. Furthermore, the significance of each variable in this research emphasized to study the relationship and impact of each variable with the beneficial outcomes for manufacturing industry.

1.1.Problem Statement

It is simple to see the effectiveness of combining lean operations and business project management can be once you have a fundamental understanding of both strategies. To figure out the strategic implementation to maintain cost of quality a combined strengths establish a synergy that instils a focus on quality and performance throughout the entire business.

2. THEORETICAL FRAMEWORK

2.1. Business Process Management

[17] Explained Business process management as a key factor towards improvement. It has always been a very important approach for the organizations against the top quality [18]. The concept has been derived from total quality management where the organization calculates the total cost which

it has to spend to retain or improve its quality [19], [20]. This has enabled the organizations to be proactive and efficient in the markets because competition is increasing and companies are finding it hard to survive the competition [21]–[23]. For this reason, literature provides a broad and detailed opinion on the cost of quality and its relation with business process management and lean methodologies [24]. As it has been said that cost of quality goes down when the organization has improved business process management systems [25]–[27]. The business process management allows the organizations to improve their quality by eliminating the bottlenecks or the errors in the organization [28]. This is an important phenomenon because it has become vital for the companies to understand the business process management systems and their effects on the cost of quality of the organization [29]–[31]. There are many different processes in a business and thus companies need to improve their processes by keeping the costs as low as possible and that's why a lot of companies have done well in the past and are still doing better than many other companies [32]. Consider the example of Toyota. The company has refined its processes in a way that its operational costs are very low [33], [34]. This has allowed Toyota to manufacture a large number of units at a very small flow time and tact time and thus its customers do not have to wait for the products to be delivered late [35]. The company's model has been studied by a lot of research companies in the world and this model has also been taught at many different universities around the world. This has led Toyota to earn a big reputation in the market [11], [36]–[38]. The business process management systems are compulsory to be understood by the organizations in detail to shrink their operational expenses [39]. When the operational expenses are decreased, the revenues increase significantly and as a result, the companies see a surge in their profits as well [40]–[42]. By keeping the Toyota model as a standard, many companies around the world have found out as the business processes are strengthened and improved [43]–[45], the costs of quality go down and that's why firms always better against their competitors when the cost of quality is low and thus the improvement through six sigma is always very high which make firms more productive.

2.2. Lean Operations

The companies are operating in a very complex environment because with the passage of time, the competitions are changing and thus organizations are finding it hard to sustain or retain the market share [46], [47]. The lean methodologies allow the organizations to improve their processes by eliminating the unnecessary costs and thus the cost of quality of will significantly go down [48]–[50]. This is because of the reason that companies are opting for improved performance and a

higher productivity and that's why in order to achieve a higher production at the workplace [51], [52], companies need to eliminate the unwanted and unnecessary costs so that the production is more efficient and effective at the workplace [53]–[57]. The delivery of the services gets strengthened and the stock levels go down [58]. One of the main problems which companies face is the stock level because a high stock level always increases the storage costs and thus it automatically reduces the revenues of the organization which ultimately decreases the profits [59], [60]. The non-value added steps during the operations should be eliminated and thus the lean principles focus on these non-value added steps i.e. waiting, production, processing, movement, transportation, inventory, waiting, and defects [61], [62].

The lean operations explain these wastes in detail and thus a lot of research studies have been done on these topics which explain that why companies should eliminate these wastes to minimize the cost of quality [63]–[66]. This has become important because elimination of these wastes has become an important issue for the organizations [67]–[70]. For example, if a company's manufacturing is to the north but its main market is to the south of the city, its creating a big transportation waste for itself because the transport expenses in this case will be significantly higher for the organization [71], [72]. For this reason, the lean principles define that the transport cost should be minimum for the organizations and thus the manufacturing plant should be closer to the markets where the products have to be delivered [73] so that the company could increase its revenues by lowering its transport costs [29], [74]. Also, the waiting time for many companies is significantly higher [75], [76]. The Toyota model has been adopted by many organizations in the world because Toyota, at an average, produces one car after every eight minutes [77]–[79]. This flowtime is very low and thus Toyota has become one of the widely used automobile companies in the world [80], [81]. Japanese have researched a lot on lean principles and their effects on cost of quality and that's why the lean wastes are widely eliminated in Japan and the concept is widely recognized in the Japanese literature reviews and research studies.

2.3. Cost of Quality

The phrase "cost of quality" (COQ) refers to a system that enables an organization to assess how much of its resources are allocated to operations that avoid poor quality, evaluate the quality of the firm's goods and services, and are caused by both internal and external failures. [82]–[84] explained the importance of cost of quality and its impact on operations. As the companies are focusing on cutting down costs and refining their processes, researchers have provided their

opinions [85] that lean principles play a very crucial role in refining of the processes [86]–[89]. The example of Toyota is there where the Japanese manufacturer cut down the waiting time and thus as a result the processes were refined and the flow time was decreased [90]–[92]. This has led us to the belief that lean principles have a direct relationship with business management processes too [93]. The more refined lean principles will be, the more effective and efficient and refined business processes will be. Lean methods are known as production strategy because they allow the companies to improve their productivity [94]. For example, when Toyota implemented the lean processes, it improved its production strategy and that's why its fixed costs went down [95]–[97]. Furthermore, researchers have seen that waiting time is one of the most crucial problems which companies are facing [98], [99]. For customers, waiting time is something which they do not want to prefer. Many restaurants around the world are shortening the waiting time of their customers by analyzing the patterns and the delivery timings [100]. As the waiting time will be shortened, the business processes will be strengthened and thus the company will earn its reputation and goodwill in the market [101]. The different lean principles have their separate importance and value in the companies [102], [103]. The main purpose is to remove the non-value added steps because the non-value added steps always increase the operational costs and decrease the revenues [104]–[107]. The Japanese research studies have been very exemplary because a lot of industries and markets are studying this model and implementing it at the workplace [108]. This has led the companies to analyze their operations and understand the bottlenecks that were hampering the operational production capacity [109].

Moreover, companies have realized that unnecessary production always results in storage costs being very high. For example, Dell had a very high storage costs because it always produced extra units in the market and kept them in the warehouses for the delivery [110], [111]. As the passage of time, Dell realized that its storage costs were high and its revenues were low so Dell implemented the make to order strategy. When the company would receive an order from the customer, it would manufacture a customized laptop for him/her and thus this made Dell as one of the most efficient laptop companies in the world. It studied the concept of just in time in detail and implemented the strategy because Dell did not want to see a surge in its storage costs [112]–[115]. This is the reason today Dell has captured a huge market around the world and thus its popularity and fame are growing day by day. For this reason, companies always wish to lower the storage

costs so that their processes are refined and thus these two have a direct connection in a way that more refined lean processes, the more refined business management processes will be [84].

3. LITERATURE REVIEW

3.1. Impact of Business Process Management and Lean Operations on Cost of Quality

In order for quality to have the desired long-term impact on the business, the expenses of performing a quality task, carrying out quality enhancements, and accomplishing targets must be carefully managed [116], [117]. It is better to determine these costs from an analysis of the costs of quality since they must be a true reflection of the quality effort [118]. The success of quality management can be evaluated using such an analysis, which also identifies chances for cost reductions and issue areas [119]. Lean principles, business process management and cost of quality all have a direct and indirect relation with each other. [120] explained with the help of refined processes, the cost of quality goes down because the company does not have to spend a huge cost for its processes improvement [121]. With the introduction of six sigma at the workplace, people and companies have seen a rise in its process improvement because it is directly linked with lean principles too [122], [123]. The lean principles state that defected products should be automatically removed from the pack and thus quality assurance should be done at each step [124].

In other words, Lean operations enables an organisation to drastically boost customer satisfaction while drastically reducing waste and improving efficiency by reducing the variability in its goods and services [125]–[128]. Users of lean operations go through a rigorous training process that progresses through various stages of increasing sophistication based on experience and success [129]. Professional Lean production practitioners and consultants typically work toward obtaining experience at various levels, improving their capacity to assist in directing the development and use of the lean operations strategies [130]. This has allowed a lot of organizations to strengthen and improve their processes and has let the companies to be more efficient and productive at the workplace [131], [132]. This is important because since the competitions are growing in the markets, companies are looking for different types of ways to be more production in the market and to achieve the competitive edge in order to beat the customers and retain the market share because the demands are continuously changing and people are adopting new strategies and wishes with time [4]. Lean principles have got a worldwide support and recognition because these

principles have shortened the problems and issues of Companies and have allowed a surge in profits [133].

The example of Nokia is in front of everyone where the Finnish giant did not refine its processes and thus it saw a decline in its market share. Its cost of quality continued to increase and it eventually went out of the market [134], [135]. This was because of the reason that lean principles were not implementing and Nokia did not conclude that its products were being produced in overproduction capacity as their demands were simply not in the market. And thus Apple and Samsung overtook Nokia in the market and now they're the world leaders in a true sense [136], [137]. For this reason, the adoption of lean has become has important concern for companies around the world and thus many organizations are putting their efforts to refine their businesses processes because competitive advantages are not easy to achieve and little efforts have to be put by the organizations as the example of Toyota has suggested that the Japanese automobile's model is being studied at the global level. This literature review has provided opinions and examples from academic published journals around the world.

3.1 General Research Model

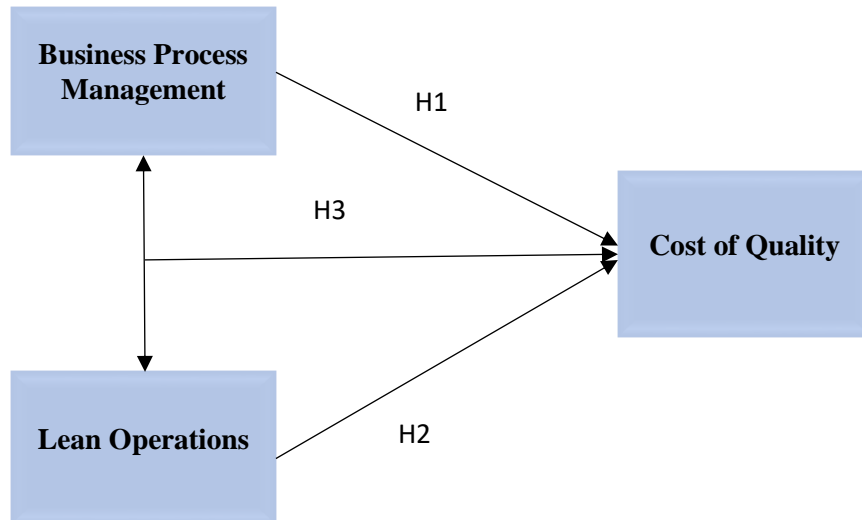


Figure 1: Conceptual Research Model

4. DISCUSSION

It is simple to see how effective is relating lean operations strategies and BPM to reduce cost of quality and maintain the competitive advantage. Their combined strengths establish a synergy that instills a focus on quality and performance throughout the entire business. It is acknowledged that BPM is a crucial component of most quality management systems. The quality management paradigm, which largely relies on a systematic approach to BPM, concentrates on all organizational activities. Through modelling and analysis of inputs, outputs, and performance, BPM excels at understanding processes and workflow. However, it is less proficient at analyzing data linked to extremely complex or diverse issues. In order for quality to have the desired long-term impact on the business, the expenses of performing a quality task, carrying out quality enhancements, and accomplishing targets must be carefully managed. It is better to determine these costs from an analysis of the costs of quality since they must be a true reflection of the quality effort. The success of quality management can be evaluated using such an analysis, which also identifies chances for cost reductions and issue areas to meet the organizational objectives.

5. CONCLUSION

A scientific research based evidences has been discussed and concluded. In this research it can be said that, business process management and lean operations require a sizable investment from a company or organization, and their comprehensive implementation takes time. Since significant organizational change is frequently necessary, the majority of businesses start with an experimental plan and gradually increase their use over several years. However, the significant business advantages that may be produced by combining BPM and lean production are well worth the time and effort in order to reduce production cost and maintaining business quality.

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