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Lead Time Management leads to Consumer Loyalty in Manufacturing Industry in Karachi

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Abstract:

Aim of the study: *This research study is carried out with the purpose to analyze the impact of lead time practices on customer satisfaction in manufacturing sector of Karachi. This study identified technology integration, working with multiple suppliers, JIT, and queue management system as lead time management practices.*

Methodology: *A sample of 150 individuals from the manufacturing sector in Karachi has been selected. Furthermore, data collected through adopted and structured questionnaire is analyzed by different statistical techniques i.e. descriptive statistics, confirmatory factor analysis, correlation analysis, and regression analysis.*

Findings: *Results of the study revealed that technology integration, working with multiple suppliers, and queue management system have significant positive impact on customer satisfaction. Whereas, JIT is found to have insignificant. It is suggested that implementation of lead time management practices would increase customer satisfaction.*

Key words: Just in Time, Working with Multiple Suppliers, Queue Management, Technological Integration, Customer Satisfaction

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1. INTRODUCTION

If a firm can give negligible proportion of time taken for a purchaser to get the thing, it gives the firm its novel offering point and keeps it over the redirection. Regardless if production network isn't regulated properly and isn't viably planned to give smooth voyaging every single through method it can come to fruition into being to a great degree repetitive making shoppers hold up.

The study recognized that the organizations great lead time management that is having different providers of different items, endeavoring however much as could be expected to diminish fluctuation, continually having a smooth work process in the manufacturing industry, having appropriate queue control to stay away from delays, speeding up a small number of procedures to keep away from delays, utilizing multi modular transportation to maintain a strategic distance from postponements as well as offering guarantee of the items for essentially influences consumer loyalty decidedly. These are the networks that had a solid negative impact on consumer dependability; Number of grievances, Repeat consumers, returned products, Warranty claims, and Consumer input moreover after deal benefit.

Various studies have concentrated on speed as the foundation of competitive advantage (Stalk and Hout, 1990; Blackburn et al., 1992). Organizations utilize three principle techniques in view of speed to draw in consumers: to serve consumers as quick as could be allowed; to urge potential clients to get a conveyance time “quote" before requesting, and to ensure a uniform transportation lead time for every single potential consumer (So and Song, 1998). Numerous organizations, particularly in the make-to-arrange fabricating segments, are receiving the third technique of promoting a uniform conveyance time for all consumers inside which they certification to fulfill most. While this system may pull in

different purchasers, there is a hazard that request may possibly beat the connection's ability to react. With this procedure, it is basic to have a few inside instruments set up to ensure that the ensured movement times are physically conceivable and reliably met.

According to Blackburn *et al.,* (1992) today's consumers around the world request a product, as they need it, when they need it, and at the most ideal cost. In the present very aggressive worldwide commercial center they are putting supplementary prominent incentive on quality and conveyance time. Suppliers of managements comparably have started to put more an incentive lying on quality and conveyance time in addition to organizations are attempting to pick up a focused edge and enhance gainfulness through cutting cost, expanding quality and enhancing conveyance. In focused businesses, short lead time will separate an organization from its rivals, prompting increment deals (Blackburn et al., 1992).

In the manufacturing industry, lead time management is critical since the part is profoundly subject to extremely late innovation which is able to do definitely diminishing lead times. Consumers are likewise exceptionally educated moreover their requests and desires are high. Consumers need moment arrangements with regards to media transmission managements. It is consequently essential for media transmission organizations to successfully deal with their lead times to accomplish more elevated amounts of consumer loyalty.

Problem Statement

The time it takes for a consumer to get an item or else management is extremely basic in deciding how fulfilled that consumer will be. In the event that associations are capable of have the capacity to keep up short lead times, they can be guaranteed of abnormal amounts of consumer reliability which will thusly prompt consumer devotion (Mandal, 2015).

There are various examinations that have been led on lead time management. For example Alp and John, 2003 directed an investigation on unique lead time management in supply chains. Miskelly (2009) similarly led a study on enhancing consumer loyalty with lean-six sigma. The study specified better lead time management as one of the methods for enhancing consumer loyalty. Another examination was additionally done by Petri (2012) on the effect of consumer arrange lead time-construct choices in light of the company's capacity to profit. The investigation set up that lead time choices effect on the organization's capacity to influence supplementary to benefits. Bosire et al. (2011) led an investigation on the consequence of outsourcing on lead time as well as consumer managements among grocery stores in Nairobi. The investigation affirmed that outsourcing significantly affects lead time.

The studies accessible have not specifically contemplated the impact of lead time consumer on consumer loyalty. The examinations additionally have an inclination give attention on the assembling area than the management division. This leaves a gap in consumer service and lead time in the management area that should be filled. This investigation will subsequently try to address this gap by noting two critical inquiries: What are the lead time management practices in the manufacturing industry and what is the connection between lead time management practices and consumer loyalty?

Research Objectives

This study will attempt to achieve the accompanying two goals:

i. To construct the lead time management rehearses in the manufacturing industry
ii. To determine the connection between lead time management practices moreover consumer fulfillment in the manufacturing industry.

Value of the Study

The manufacturing industry in Karachi will similarly profit by the innovation of this research since they will get archived and substantiated sightings on the impact of lead time management resting on consumer loyalty.

Different organizations, particularly in the manufacturing business, will have the competence to figure out the importance of lead time management in enhancing the level of consumer reliability. Production network professionals will profit by this study since it considers supply chain management in the manufacturing division.

2. LITERATURE REVIEW

Lead Time Management

Lead Time means the measure of time that falls by between when a course of action begins and when it is finished. Lead time is analyzed intently in manufacturing also supply chain management as companies need to decrease the measure of time it takes to pass on goods to the market. A more customary meaning of lead time in the store network management domain is the time from the minute the consumer puts in a request (the minute you learn of the prerequisite) to the minute it is gotten by the consumer. Without completed products or middle of the road (work in advance) stock, it is the time it takes to really make the request with no stock other than crude materials. In the assembling condition, lead time has an indistinguishable definition from that of Supply Chain Management, however it incorporates the time required to dispatch the parts from the provider (PMI, 2008). The transportation time is incorporated on the grounds that the assembling organization has to know when the parts will be accessible for Material Requirements Planning (MRP). It is additionally feasible for lead time to incorporate the time it takes for an organization to process and have the part prepared for assembling once it has been gotten.

The time it takes an organization to empty an item from a truck, investigate it, and move it into capacity is non-inconsequential. With tight assembling requirements or when an organization is utilizing Just in Time fabricating it is essential for production network to know to what extent their own particular inside procedures take (PMI, 2008)

Lead time incorporates exercises like request situation, data stream time, the materials development time, an opportunity to deliver the item, the ideal opportunity for installment, the strategic time for the consumer to find the item. Time has risen as a prevailing and self-reliable factor of the conflict (Bartezzaghi, 1994). By shortening the lead-time, we can bring down the wellbeing stock, decrease the misfortune caused by stock out, increment the management level to the consumer, and pick up the upper hands in business (Ouyang,Chen and Chang, 1999).

Latest work has been given to distinguishing the data expected to decide lead times (e.g., sequencing rules, entry times, preparing times, shop clog level, and so forth.) and creating guidelines to allot due dates (Baker 1984, Baker and Bertrand 1981, and Wein 1991).

A few investigations utilize reenactment as well as relapse to examine the execution of assembling frameworks under various due date setting managements (Kianfar.F, 2009). However citing a shorter lead time doesn't influence firms to pick up an aggressive edge unless they are really equipped for satisfying those prerequisites (Spearman, 1999).

The Japanese experience of utilizing Just-In-Time (JIT) generation demonstrates that there are favorable circumstances related with their endeavors to control lead-time. Japanese makers are known for their solid and enduring organization with their providers. This lessens lead-time and is one of the wellsprings of achievement of their JIT theory.

Add up to lead-time is comprised of time gave to handling orders, to getting and producing things, and to transporting

things between the different phases of the supply chain. Be that as it may, lead times can regularly be decreased if things are transported instantly after they are produced or land from providers (David Simchi et al., 2000). Lead-time ordinarily incorporates two parts: Information lead times (i.e., the time it takes to process a request) and Order lead times (i.e., the time it takes to create and dispatch the thing). Data lead time can be decreased by utilizing extremely complex and present day correspondence framework while Order lead time can be diminished through effective production network management (Simchi-Levi, David, 2000).

Alp and John (2003) make plain that the most ideal approach to enclosure a supply chain against arbitrary vacillations sought after is through adjustment of lead times in the framework progressively. They contend this should be possible from first to last having adaptability in the supply chain lead times by working with various providers, utilizing numerous transportation choices, having the choice to give a hand certain procedures, or having distinctive conceivable courses for a unit to experience the production network.

Jader (2012) demonstrates that the chance to make smaller lead time in benefit conveyance lies in the management procedure itself. He additionally proposes that for an association to have the capacity to decrease lead time, it ought to incorporate lead time lessening as an organization methodology. This will empower the organization to address lead time issues all the more productively.

Factors Influencing Lead Time

Lead-time is the time it takes for the customer to get his request from when he put it. This incorporates every one of the exercises that happen once the request is set. The production network; is a stream of procedures that incorporates crude material, stock, work in advance and each progression that is incorporated for an item from purpose of birthplace to the point

of utilization. Each segment of the production network that the item is put through requires a specific measure of time to process. Which consequently will cause included time that the purchaser should hold up to get the item they requested?

If a firm is having stock issues making them increment expenses and time because of the measure of stock sitting in the stockroom, for this situation it is relied upon for the firm to discover new ways and models to manage their stock issues however regardless of how productive they influence their stock to demonstrate and have no additional costs the additional elements pushing the time will at present be resolved to cause issues in various ways. These variables can be the absence of consistency in work process, the absence of decent variety of machines or individuals so on.

Once a firm perceives what factor they need to focus on and how it will affect their lead-time, they can build up a goal and work towards it with an appropriately composed plan and process stream. The most extensively renowned components that impact the ideal time taken to obtain the products and further clarified in this investigation are stock control, innovative reconciliation, to make a focused edge, limiting additional undertakings and expenses in assembling the cost, strategic ramifications on the time, supply chain management abilities and just in time.

Consumer Loyalty

Consumer Loyalty is the capacity of an association to meet the desires for a client. It contrasts relying upon the circumstance and the item or administration. A client might be happy with an item or administration, an experience, a purchase decision, a salesperson, store, service provider, or an attribute or any of these. A couple of definitions rely upon the discernment that shopper fulfillment or disloyalty occurs in view of either the attestation or disconfirmation of individual presumptions about an administration or thing. To maintain a strategic distance

from challenges originating from the kaleidoscope of client desires and contrasts, a few specialists ask organizations to "concentrate on an objective that is all the more firmly connected to client equity". Instead of asking whether clients are fulfilled, they urge organizations to decide how clients consider them responsible (Rodrigo, 1996).

At the point when seen benefit quality is not as much as expected management quality client will be disappointed (Jain and Gupta, 2004). According to Cronin and Taylor (1992) loyalty super ordinate to quality-that quality is one of the management measurements figured in to consumer loyalty judgment.

3. CONCEPTUAL FRAMEWORK

3.1 Technological Integration

Technology plays significant role in supply chain management as it allows firms to enhance the complexity and volume of information that is required to be communicated with suppliers or other partners. It provides firms with real time information regarding supply chain such as delivery status, production planning and scheduling, inventory level etc. Moreover, it also facilitates the arrangement of forecasting and scheduling operations amid suppliers and firms which enables them to have better coordination (Paulraj, Chen, & Flynn, 2017). The system of technologies such as mobile and wireless technologies, radio frequency identification (RFID), and electronic data interchange (EDI) in the competition also help firms to achieve success in terms of operational efficiency, financial performance and customer satisfaction (Tseng, Wu, & Nguyen, 2011).

It is also noted that information communication technology, knowledge management and information sharing could enhance the customer services by making rapid decisions to customer demands in order to achieve competitive advantage

(Shavazi, Abzari, & Mohammadzadeh, 2009). A study carried out by Otiso, Chelangat, & Bonuke (2012) concluded that service delivery through information communication technology have a significant impact on customer satisfaction.

3.2 Working with Multiple Suppliers

The situation of working with multiple suppliers has received less attention from researchers and academicians (Minner, 2003). Firms have many sourcing alternatives such as; single sourcing, sole sourcing, dual sourcing and multiple sourcing. When there are several suppliers available to supply total worth of goods or services it is called multiple sourcing or working with multiple suppliers (Larsson, 2005). Some firms purchase or order many of their components from multiple suppliers, as it prepares the firms for turmoil without building fast depreciating inventory. Working with multiple suppliers helps firms with reduced costs by using multiple suppliers. The turmoil in supply of components can increase or decrease the dependence on multiple suppliers (Bhattacharyya, 2011).

The demands of customer increase and they become more specific with time, therefore firms are required to initiate initiatives in order to coordinate responsibilities across supply chain that could possibly lead to improvement in services and lower costs as well as customer satisfaction. Firms are also required to manage multiple suppliers and establish successful relationships with them as well as customer to reap benefits of integrated and much more focused supply chain strategies (Pohja, 2004). The study of Mandal (2015) revealed that the score of good customer satisfaction is higher with multiple sourcing as compared to single sourcing.

3.3 Just in Time (JIT)

JIT can be described as a revolutionary production management system that emphasizes on producing highest value product on time. It can be accomplished by

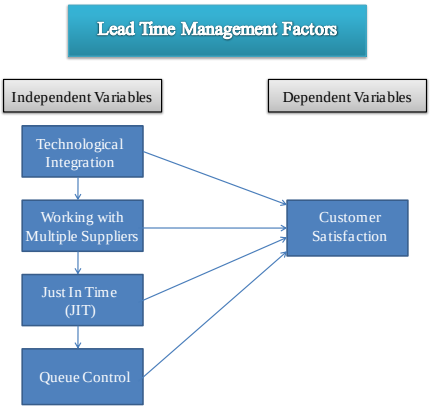
acknowledging and eradicating the likely non-value-added activities through the process of continuous improvement which leads to higher productivity, reduced delivery times, improved quality, reduction in costs, increased customer satisfaction and higher profit (Dolcemascolo, 2006). One of the primary goals for any firm is the satisfaction of ultimate customer. If a firm cannot reach perfection in this area, then all the procedures are considered useless. The truth is that the adoption and development of JIT is an expensive and enduring process, but if a firm could deal with such challenges, it is possible to achieve higher level of workflow and customer satisfaction (Sharma & Gangrade, 2015). A study conducted by Sharma & Gangrade (2015) to investigate the implementation of JIT for achieving the goal of customer satisfaction revealed that firms in order to find ways to improve quality, reduce cost, and increase customer satisfaction could adopt JIT system as it is such a tool that that can be used to achieve competitive advantage.

3.4 Queue Control

The supply chain network deals with different sources of uncertainties related to; (1) supplies i.e. quality, availability, delivery times etc.; (2) processes i.e. human performance, machine breakdown, transportation times; (3) and demands i.e. Batch sizes and types, and arrival times. These uncertainties along with several other factors affect the firm's performance as well as customer satisfaction. Some firms use inventories to hedge such uncertainties. However, inventories are placed at different places which incur different results and costs. Therefore, effective approach to deal with complex supply chain network problems which involve queue control system (Liu, Yao, & Liu, 2003).

Since many years, the queuing models have been employed to examine the problems of supply chain network. They were used to solve diverse machine interference problems in the 1940s. It is also used to investigate the tradeoffs

regarding the available number of servers versus customers waiting time. The queuing models estimate the ideal number customer order service point to minimize business costs. Firms uses queuing models to increasing customer satisfaction by reducing delay in services (Bhaskar & Lallement, 2010). A study carried out by Yusuf, Blessing, & Kazeem (2015) in their study revealed that customers are highly dissatisfied when firms have not implemented any queuing models.



Hypothesis

H Lead time management has no impact on consumer loyalty in the manufacturing industry in Karachi.

H_1 Lead time management affects consumer loyalty in the manufacturing industry in Karachi.

4. RESEARCH METHODOLGY

Here the research design, target population, data collection, t, Instrument validity and reliability test, data collection, and data analysis.

4.1 Sample Selection

There are around 150 respondents in Karachi will frame the committed population of this study. This survey will include a record of all the manufacturing enterprises in Karachi.

4.2 Data Collection

Data gathering will be done through an organized poll from organization supervisors and consumers. The analyst will target senior managers and supervisors from supply chain offices. The survey will have following segments: **Section A** manage the profile of the organization, **Section B** contains data on the lead time management perform between the manufacturing companies furthermore **Section C** looks for information on the association between lead time management practices and consumer loyalty.

Questionnaire sent to the respondents with a demand to return subsequent to finishing the same. Before applying this technique, for the majority part a Pilot Study for testing the market research is conducted this uncovers the shortcomings, assuming any, of the survey

4.3 Data Analysis

The data gathered will be broke down utilizing statistical package for sociologies (SPSS), and as per appealing data following research questions. Means and frequency scores will be figured. Descriptive statistical data will be utilized with a specific end goal to empower the research to abbreviate, sort out, assess and work out the numeric data. Qualitative data calculate approximately individual sentiments and dispositions will likewise be estimated utilizing inferential measurable techniques as indicated by the goals. Regression analysis will be done to build up the connection between lead time management practices and consumer loyalty.

DATA ANALYSIS AND INTERPRETATION

Response Rate

The research had focused on 150 people who are engage in manufacturing industry in Karachi, planning to get the required data from the chose organizations. Along with

questionnaire accumulation just 66% (99) of the directed surveys were filled.

Category	**Study Sample Size**	**Returned**	**Percentage**
Manufacturing Industry in Karachi	150	99	66%
Total	**150**	**99**	**66%**

CFA (Confirmatory Factor Analysis)

WWMS1	.585						
WWMS2	.611						
WWMS4	.648						
WWMS5	.641						
JIT1		.564					
JIT2		.557					
JIT3		.531					
QM1			.856				
QM2			.852				
QM3			.854				
QM4				.801			
CS1					.679		
CS2					.720		
CS3					.739		
CS4					.628		
CS5					.671		
CS6					.764		
TI2						.655	
TI1						.577	
TI3						.695	
TI4						.703	

Confirmatory factor analysis was applied for measuring the items validity. Results suggest that four items of independent variable working with multiple suppliers are loaded in their respective column and one item WWMS-3 eliminated due to irrespective loading. All three items of independent variable Just-in-time are loaded into their respective column. Similarly, all four items of Queue management are loaded together in a single column. Next, it is observed technological integration items are also loaded in their respective column and same is the

case with dependent variable customer satisfaction. However, in overall process twenty one items are valid and being used in present study.

Reliability Analysis

Variable	Cronbach's Alpha	Items
Working with Multiple Supplier	.789	4
Just in Time	.812	3
Queue Management	.632	4
Technological Integration	.681	4
Customer Satisfaction	.854	6

In the process of reliability four items of working with multiple suppliers (independent variable) have cronbach's Alpha value = .789 > 0.60. It supports internally consistency amid the responses. Three items of just-in-time (independent variable) have cronbach's Alpha value = .812> 0.60 however response are internally consistent. Same is the case with queue management and technological integration, their cronbach's Alpha values are = .632> 0.60 & .681> 0.60 respectively. Items of dependent variable customer satisfaction are also pass the reliability criteria cronbach's Alpha value = .854> 0.60.

Correlation Analysis

Correlations

		CS	JIT	WWMS	TI	QM
CS	Pearson Correlation	1	.032	.608**	.551**	.091
	Sig. (2-tailed)		.750	.000	.000	.371
	N	99	99	99	99	98
JIT	Pearson Correlation	.032	1	.024	-.066	.487**
	Sig. (2-tailed)	.750		.812	.516	.000
	N	99	99	99	99	98
WWMS	Pearson Correlation	.608**	.024	1	.630**	-.049
	Sig. (2-tailed)	.000	.812		.000	.632
	N	99	99	99	99	98
TI	Pearson Correlation	.551**	-.066	.630**	1	-.178
	Sig. (2-tailed)	.000	.516	.000		.080
	N	99	99	99	99	98
QM	Pearson Correlation	.091	.487**	-.049	-.178	1
	Sig. (2-tailed)	.371	.000	.632	.080	
	N	98	98	98	98	98

**. Correlation is significant at the 0.01 level (2-tailed).

Customer satisfaction maintains positive relationship with all four independent variables including working with multiple suppliers, just in time approach, queue management and technological integration. Results posit strong positive relationship with independent variables working with multiple suppliers and technological integration. Values of correlations are .608 and .551 respectively and the significance level of correlation is more than 99 percent. For other two independent variables just in time and queue management correlation values are 0.032 and 0.091 along with significance p values 0.750 and .371 (both values are insignificant).

Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.651[a]	.424	.399	.65616

a. Predictors: (Constant), WWMS, QM, JIT, TI

Results posit the 39.9 percent variation in customer satisfaction due to independent variables working with multiple suppliers, just in time approach, queue management and technological integration.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.465	4	7.366	17.109	.000[b]
	Residual	40.041	93	.431		
	Total	69.506	97			

ANOVA supports the fitness of model based on four independent variables working with multiple suppliers, just in time approach, queue management and technological integration and one dependent variable customer satisfaction.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.166	.738		-.225	.822
	QM	.337	.161	.192	2.101	.038
	JIT	.084	.129	.059	.651	.517
	WWMS	.479	.112	.432	4.277	.000
	TI	.323	.116	.284	2.779	.007

First coefficient of model predicts .192 unit changes in customer satisfaction due to independent variable queue management. It is direct significant (0.038 < 0.05) change caused in customer satiation due to queue management. Other coefficient of working with multiple suppliers predicts .432 unit changes in customer satisfaction due to independent variable working with multiple suppliers. It is direct significant (0.000 < 0.05) change caused in customer satisfaction due to working with multiple suppliers. Next, it is observed that technological integration causes .284 unit changes in customer satisfaction. It is direct significant (0.007 < 0.05) change caused in customer satisfaction due to technological integration. Lastly, no significant change is observed in customer satisfaction due to independent variable just in time.

Discussion

Results of the study revealed that the factors of lead time management i.e. technological integration, working with multiple suppliers, and queue control have significant and positive impact on customer satisfaction. Whereas, JIT as lead time management factor is found to be insignificant in this research study. Research participants responded that use of advance tools helps them in processing information, conveying data, and establishing correspondence among suppliers as well as customers, which results in a smaller number of complaints, less returned goods, and good consumer feedback. Findings of this study are also in line with previous findings of by Otiso,

Chelangat, & Bonuke (2012) that service delivery through information communication technology has a significant impact on customer satisfaction.

The second variable "working with multiple suppliers" is found to have significant and positive impact on customer satisfaction. As the participants of this research study revealed that they are involved in working with different suppliers that facilitates in fulfilling requests and needs on time and easier to work which results in high customer satisfaction. This finding is also parallel to previous findings of Mandal (2015) that the score of customer satisfaction is higher with multiple sourcing as compared to single sourcing.

This study finds that JIT has insignificant impact on customer satisfaction. It is revealed through the responses of research participants that JIT as lead time management factor provides assistance in increasing productivity, reducing costs regarding inventory and warehousing, makes delivery effective in terms of quality and time, and make available sufficient quantities that customer demands. However, it has no impact on customer satisfaction with the services. Findings of this study are not similar to previous study conducted by Sharma & Gangrade (2015) to investigate the implementation of JIT for achieving the goal of customer satisfaction revealed that firms in order to find ways to improve quality, reduce cost, and increase customer satisfaction could adopt JIT system as it is such a tool that that can be used to achieve competitive advantage.

Lastly, it is observed that Queue management as a factor of lead time management has significant and positive impact on customer. The responses from the participants of research study shows that queue management enable the staff to serve customers in a better way, guide customers to fast and appropriate holding up line, keep customers well informed regarding their pause status, and facilitate more consumers in a minimum required time more effective which result in a

strong relationship with customers and making them more satisfied from the products and service offerings. Results of this study are also similar with previous findings of Yusuf, Blessing, & Kazeem (2015) that customers are highly dissatisfied when firms have not implemented any queuing models.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

From the findings of this question paper it manifestly demonstrates that there is a measurably huge solid positive connection between reiteration of consumers and assurance warranty in manufacturing companies in Karachi. Despite the fact that in a similar report there understood that there was a pathetic negative connection between after sale and number of complaint in a manufacturing organization.

Key Findings

From the findings of this survey greater part of manufacturing organizations in Karachi that their organizations attempted however much as could reasonably be expected to decrease variability, the organizations additionally concurred that they definitely took after their consumer lines and ensured that there was appropriate line control to stay away from postpones that could prompt consumer disappointment. Greater part of the manufacturing organizations likewise facilitated a few procedures to maintain a strategic distance from delays and ensured their organizations were fulfilled.

For this current analysis breakthrough it is obviously understood that there is a positive important connection between lead time management practices and consumer loyalty. Greater part of the companies has demonstrated that having suitable queue control in a manufacturing industry it expands gainfulness and consumer loyalty where each consumer is esteemed and considered in benefit conveyance.

Conclusion

This study is carried out with the purpose to investigate the impact of lead time management practices i.e. technology integration, working with multiple suppliers, JIT, and queue management system on customer satisfaction of manufacturing firms in Karachi. Lead time management is critical in the manufacturing industry as it is intensely subjected to extremely late innovation which is able to do definitely diminishing lead times. Consumers are likewise exceptionally educated moreover their requests and desires are high. A sample of 150 individuals from the manufacturing sector of Karachi has been selected for the study. Multiple statistical tools such as descriptive statistics, ANOVA, correlation analysis, and regression analysis are used to analyze collected data from the sample. This study concludes that lead time management practices, i.e. technology integration, working with multiple suppliers, and queue management system are found to have significant and positive impact on customer satisfaction. However, the only lead time management practice namely JIT is found to be insignificant to customer satisfaction.

Suggestions for future research

In view of the findings of the study, additionally explore has been prescribed on more lead time rehearses that influence consumer loyalty other than the ones distinguished in the learning. Different zones of further research on supply chain methodologies that assembling organizations can adjust to build consumer loyalty.

Ethical Consideration

There are different moral issues will be looked while collecting the data. It is obvious to keeping up the secrecy of the gathered data and keeping the data as being given by test as private. This is because this is the ethically imperative concern to safe the data. As its consequence there are numerous challenges

being looked as the researchers while leading its future study and analysis.

Research Limitations

The study was restricted to limited lead time rehearses that influenced consumer loyalty. Different practices that affected consumer loyalty were not contemplated henceforth constraining the assessment to few practices.

REFERENCES

1. Y. López, A. Novoa, M. Guevara, and A. Silva, "Breast Cancer Diagnosis Based on a Suitable Combination of Deformable Models and Artificial Neural Networks Techniques," in Progress in Pattern Recognition, Image Analysis and Applications, 2008, pp. 803-811.
2. Jader, J. (2012) Lead Time Reduction: Improving the Consumer's Service Experience.
3. Ahuja M., Mahlawat S., Masood R. Z. (2011).Study Of Service Quality Management with SERVQUAL Model: An Empirical Study Of Govt/Ngo's Eye Hospitals In Haryana.Indian Journal of Commerce & Management Studies., 2(2)
4. Alp M. & John N. (2003) Dynamic Lead-time Management in Supply Chains. Graduate School of Business, Columbia University, New York.
5. Anderson E.W., Fornell C., Lehmann D.R., (1994). Consumer satisfaction, market share, and profitability: findings from Sweden, Journal of Marketing, 58, July.53-66.
6. Atallah, S. (2005) Overview of Trends in Multimodal Transport. World Free Zone Convention-IZMIR 2005 International Conference.
7. Blackburn, J.D., Elrod, T., Lindsley, W.B., Zahorik, A.J., 1992. The Strategic Value of Response Time and Product Variety. In: Voss, C.A. (Ed.), Manufacturing Strategy— Process and Content. Chapman and Hall, London (Chapter 13).

8. Bloemer J. M., and Kasper H., (1995). The complex relationship between consumer satisfaction and brand satisfaction, Journal of Economic Psychology, 16: 311-29.
9. Boulding W., Ajay K., Richard S., Valarie A. Z., (1993). A Dynamic Model of Service Quality: From Expectations to Behavioral Intentions, Journal of Marketing Research. 30 (2): 7–27.
10. Bartezzaghi, E., Spina, G., & Verganti, R. (1994). Lead-time models of business processes. International Journal of Operations & Production Management, 14(5), 5
11. Beamon, B. Measuring supply chain performance. International Journal of Operations and Production Management, 19,3 (1999), 275-292.
12. Daya, B. M., & Raouf, A. (1994). Inventory Models Involving Lead Time as a Decision Variable. *The Journal of the Operational Research Society,45*(5), 579-582
13. D. Magon (1979) Stock control when the lead time cannot be considered constant. J.Opl Res. Soc. 30, 317-322.
14. Christopher, M. (2000) ―The agile supply chain competing in volatile markets‖, Industrial Marketing Management, Vol. 29 (1) pp. 37-44.
15. Gunasekaran, A. Patel, C. and Tirtiroglu, E. (2001) ―Performance measures and metrics in a supply chain environment, International Journal of Operations and Production Management, Vol.21, , pp.71-87.
16. Dooley, F. (n.d.). Logistics, Inventory Control, and Supply Chain Management. Retrieved from http://www.choicesmagazine.org/2005-4/supplychain/2005-414.html
17. H. (2013). Effect of Lean/JIT practices and supply chain integration on lead time performance. *Journal of Supply Chain Management Systems, 2*(2), 37-41
18. Henri, J. Janne, H. (nd) Reducing Service Process Lead Time through Inter-organizational Process Coordination. http://www.cck.go.ke/industry/information