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Responding Customer Satisfaction through Logistics Service Qualities: A Study in Pharmaceutical Industry

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Abstract:

Now a day companies are struggling to react to the difficulties of customer satisfaction through the development of logistics service qualities. In this study, the purpose is to measure the quality of logistical service as a intervene factor in the relationship between logistics capabilities (LC) and customer satisfaction (CS). We used mixed method of research with 8 companies in the pharmaceutical industry. The collected data were analyzed by structural equation modelling and results shown that logistic service totally mediates the customer satisfaction and logistic capabilities of the company. As per the research problem, we use mixed method of research to fulfill the objective of our study. Firstly, we used a qualitative research design under which in depth interviews of five clients and mangers of one Pharmacy company (Pithampur, M.P) has been taken and recorded for further analysis. Secondly, by using questionnaire the survey has been carried out with 87 respondents of Pharmacy sector of Pithampur region. Structural Equation Modelling was used to analyze the collected data. The result of this study clearly indicates the mediation of logistics service quality among customer satisfaction and logistical capabilities of the companies. Number of respondents obtained (87 respondents) and the number of variables (31 measures) used in this study can be the major limitations. Further new research can be suggested in order to increase sample size and variables. For customer satisfaction, the managers of pharmacy companies should focus on logistical capabilities, to empower the company to be dynamic in the search for logistics solutions, integration and provision of reliable information to its customers.

Keywords: *Logistics capabilities, Logistics service quality, Consumer satisfaction, and mediator*.

Introduction:

In this present scenario, the competition is increasing and every company has only objective i.e. to satisfy the customer (Alhuwitat, 2017). Customer satisfaction is a positive or negative feeling or expression; which explain the customers' expressions, attitude and involvement towards products; after comparison with their expectations (Kottler, 2000).
Business corporations can give this satisfaction level when they have multi variety products and can be able to offer different services (Lee, 2000). Todays' there is no problem of availability of products because of multiple options are available, but the problem is to attract the customer (Henry, 2004). Customer attraction is the key of customer satisfaction; satisfaction of the customer convert gradually in to customer loyalty. Loyalty of the customer can only build up with the help of maintaining the customer relationship (Chen, 2008). Customer relationship is one of the step to maintain customer satisfaction and this could be possible if the company is able to give high quality of services and products (Mittal, 2010). Service quality includes so many factors or items to give satisfaction to the customer. One of the strongest variable of the service quality for the pharmaceutical companies is the logistic system of the company (Gajewska, 2015). The pharmaceutical company needs to focus on upper level transportation and logistics system to satisfy the customer (Ramanathan, 2011). Service quality is one of the very important factor to make the decision change if customer is not getting satisfaction; in which manufacture companies especially focused on logistic process (Kilibarda, 2016). In this logistic process, many other variables include like continuous intensive care, security and top-level quality (Yang, 2003). No single mistake is permitted in this process for the pharmaceutical companies. All these factors should be match with expectations and perception of the customers (Hartono, 2017). The moment company started giving all services of logistics, customers' expectations automatically increases (Chen, 2011). Customers' expectation can manage with the help logistic service quality (LSQ) (Sohn, 2017).

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Review of Literature:

Logistic Capabilities and Logistic Service Quality: LSQ is very important factor since last few years because it has shown the close and bound relationship with customer satisfaction (Feng, 2007). LSQ is strongly correlated with planning and availability of material with right flow (Juga, 2010). Planning to match with every factor of LSQ could be possible only after measuring logistic capabilities (LC) (Setiawan, 2017). LC is related to optimum utilization of all resources (Saura, 2008). LC of the company also show the unique and different from their competitors and output of LC is the ultimate customer satisfaction (CS) (Stank, 2003). CS enhancement is possible because if company understand the all the dimensions of LSQ (Cronin, 1989). In all the dimension of CS, company should understand it is not necessary that satisfied customer is also loyal, because one dimension may reason of one customer's satisfaction but it may not be related to another customer's expectation (Davis-Sramek, 2009). LC and LSQ are the base points for getting and enhancing CS (Gil-Saura, 2008). Company need to understand the reason of CS and can suggest the methods of identification of need of the customer (Stopka, 2016). For making the supply chain management (SCM) more strong in terms of reducing cost, to improve quality and attract and interact the customers, availability of material etc., pharmaceutical company needs focus on different operating areas like: marketing, selling and manufacturing etc.(Knop,2019). SCM is the most important key of LS (Fernandes, 2018). LS is depended to the LSQ applicable in the company (Panayides, 2005). LSQ play very important role in the process and measuring the performance of the company in terms of LC (Rao, 2015). LSQ is based on quality scale of functional process and the outcome (Uvet, 2020), which should be match with the service delivery process and expectation of the customers (Giovanis, 2013). Service delivery of functional process is depended to the LC and the outcome of this optimum utilization of LC through LSQ is CS (Chadya, 2014 & Uyet, 2020). SERVQAL scale measures the optimum quality level of functional operations with respect to manufacturing facility framework (Parasuraman, 1988). With the help of service quality scale, many researchers found the different items for distribution management and their service standards and added in the three different dimensions like: destination, procedure and period (Mathong, 2020, Masudin, 2020, Chen, 2019). To show LC, companies needs to focus on all the dimensions of physical distribution and LSQ. LSQ also includes without damage product delivery and on time delivery with the expectations of customers so that LC shows direct impact on CS because of company's best LC (Malgorzata, 2014).

H_1: Logistics Capabilities (LC) and Logistics Service Qualities (LSQ) are positively related.

Logistic Capabilities and Customer Satisfaction: Capabilities consist of collection of all the resources of the company and divided in to tangible and intangible facilities (Esper, 2007). All these resources and facilities used by the company to show their capabilities (Bienstock, 2010). Capability of the company never permit to do not use all the resources and approaches but it always give the line management of all the approaches and proper arrangement of all the strategies (Fawcett, 1997). With the help of company's capability, resources base could be modify, behave like regular and modify in to possessions (Glicor, 2012). Also with the help of capabilities of the company, resources could identify as per the required modification (Silva, 2014). If company use high level of logistic, capabilities so CS could be also increase (Malgorzata, 2014). Different levels of LC if company will apply then they could improve their performance and enhance CS (Daugherty, 1998). After sale, services and pre sales' approach are two major factors to increase CS (Liu, 2010). Pharmaceutical companys' LC also define the time and reliability measures (Goyal, 2013). Approachability attitude towards customer with the reliability are combination of high customer satisfaction (Meiduté-Kavaliausjeiné, 2014).

In the logistic area if company is using high technology or updating time to time with respect to technology, so it also increases the CS (Lynch, 2000). Use of technology always decrease the cost, more attract the customer and encouragement for showing LC. If company is using spending money on use of tech and data for suppliers and for customers, it always helpful to take reasonable returns from the market and increase the CS (Lin, 2016).

The relationship of LC and CS shows that, with the help of LC, company is trying to upgrade the different resolution for specific circumstances or problem (Malgorzata, 2014). LC and CS has direct relationship and both are correlated (winter, 2018).

H_2: Logistics Capabilities and Customer Satisfaction are positively related.

H_3: Logistics Capabilities and Customer Satisfaction relationship mediated through Logistics Service Qualities.

Logistic Service Quality and Customer Satisfaction: LSQ defines the standard measurements in the form of different factors, to show the performance of the company in terms of distribution and availability of the products. In order to measure the customer satisfaction, company needs to focus on the performance of LSQ. There is a direct relationship of CS and performance of the company (Saura, 2008). Different logistic factors give different impact on CS. Company needs

to understand which levels of quality measurement needs to follow in order to achieve CS for their customers (Mentzer, 1999).

The relationship between LS and CS is only possible at high level, if standards of quality to be measured on the basis of regularity of services delivery, timing (Juga, 2010). The relationship of CS is positive with respect to LS, if company used the advance information technology tools. Expenses done by customer on the logistics services and then measures on their own expectations of LSQ is directly correlated to CS (Rahman, 2008). LSQ measures on different scales as per customer to customer and their expectation and the type of the company (Kilibarda, 2016). Pharmaceutical company is especially focused LSQ on the factors like quantity delivery without damage, Timings, correct quantity, no delay, right product (Kahnali, 2015). With the help of logistic quality standards company can manage CS and this is the direct correlation (Meidute-Kavaliauskiene, 2014).

H_4: Logistics Service Qualities and Customer Satisfaction have positive relationship.

Research Methodology:

Research Design: Mixed method of research was used to justify the hypothesis of this study. Authors considered qualitative design of research through personal interviews with six customers and six executives of pharmaceutical companies located in Pithampur Industrial area of Madhya Pradesh. The interview was carried out to know, identify and evaluate the adequacy of the measurement scale used for the three construct in this study.

Measurement and Scale: Authors developed preliminary structured questionnaire as a result of the interviews taken considering all three variables. Finally, the questionnaire was developed with 34 items including 14 items for Logistics Service Quality, 10 items for Logistics Capabilities and 10 items for Customer Satisfaction.

Sample: In this study, authors used judgmental sampling technique and considered the pharmacy companies located in Pithampur area of M.P to respond this survey.

In Feb 2021, the softcopy of the questionnaire was emailed to 180 company managers involved in logistics activities who are suppliers and buyers. After so many follow-ups, we received only 87 responses, which were included for further analysis.

Table -1: Descriptive Statistics

	Descriptive Values			Correlation		
Latent Variable	Mean	Std. Dev	Factor Loadings	LC	LSQ	CS
Logistic Capabilities	4.39	0.73	0.808	----	0.648	***0.801***
Logistic Service Qualities	4.01	0.83	0.819	----	----	***0.814***
Customer Satisfaction	4.28	0.79	0.876	0.735	0.580	***0.826***
Cronbach's Alpha (α)				0.836	0.815	0.901
Average Variance Extracted (AVE)				0.753	0.765	0.712
Composite Reliability (CR)				0.902	0.934	0.941

Note: To assess the Discriminant Validity, the square root of AVE values (written in last column with Bold & Italic) are used.

Results Analysis:

Demographics Details of the Respondent: From the interviewees, more than 40 percent were company owners where as 70 percent of the respondents were in a top management level in the company. Most of the respondent were having higher education certification with 35 percent having business management degree. Respondents were having work experience more than 5 years in that same pharmacy company. Respondents were able to measure different logistical services provided by the company as well as company's expectations and satisfactions with these services. Due to the high level of position in the company, respondents were able to evaluate various logistical services provided and the satisfaction of the company with these services. Maximum respondents are from Pithampur Industrial Area of M.P, which are categorized as small and micro companies in Pharmaceutical sector. Some retailers, dealers and workshop managers were also responded to this survey around 36 percent.

Measurement scale Validity: As recommended by Hair et al. (2009) at least 5 measurement per variable / construct can be considered for further analysis. Factor analysis was employed for all these 34 measures and out of which 24 measures

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remained and used for SEM. The descriptive statistics, factor loadings and AVE values were shown in Table -1. Factor loadings and AVE values are higher than 0.7, which indicate good convergence and validity of the measures and scale. For reliability, the internal consistency were calculated indicating CR index higher than 0.90. Also, Cronbach's α value were greater than 0.70 for all variables. (Refer Table-1)

Measurement Model: The relations between all the three construct and its statistical significance was evaluated by SEM using Smart PLS Professional software and the results shown in figure -2. From the Model, the variable LC was related to LSQ with a coefficient equal to 0.68 and statistically significance for ($\alpha \leq 0.01$). Whereas the relationship between LC and CS has marked a coefficient of 0.56 and was statistically significance for ($\alpha \leq 0.01$). It has been marked that the variable LSQ had a positive relation with CS having coefficient of 0.65 and significant for ($\alpha \leq 0.01$). The result indicate that for making any affect in CS from LC point of view , the variable LSQ has to be included. Structural Model supported this result, where mediation of LSQ reduced the coefficient to 0.14 with significance level ($\alpha \leq 0.05$) between LC and CS.

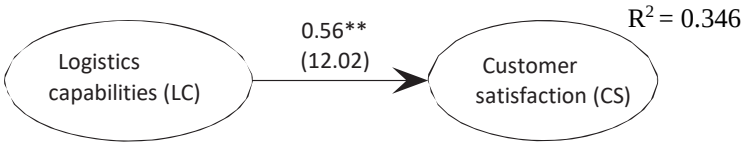

Figure - 1: Relationship between LC and CS without LSQ

For H_1, it was found that the LC and LSQ having a structural coefficient 0.68 and *t* value of 10.02 which is significant for ($\alpha \leq 0.01$). The findings of this study suggested that companies having specific LC have improved in inducing CS through these capabilities. The result of the study indicate that LC positively influence the logistic service quality in order to improve the logistics service provided by the company.

For H_2, it was observed that LC have a positive impact on CS with the company, supported by coefficient 0.56 and *t* value 12.02and statistically significance for ($\alpha \leq 0.01$). The findings of this study suggested that companies having specific LC have improved in inducing CS through these capabilities. (Refer figure-1)

For H_3, it was evidence that by including the variable LSQ in the model of the relationship between the LC and CS, the structural coefficient was reduced to 0.15, which is not statistically significance for ($\alpha \leq 0.05$). This result says that LSQ has a mediating effect in the model.

For H_4, it was marked that LSQ has a positive relation with CS with the company, supported by coefficient 0.65 and *t* value 7.54 and statistically significance for ($\alpha \leq 0.01$).

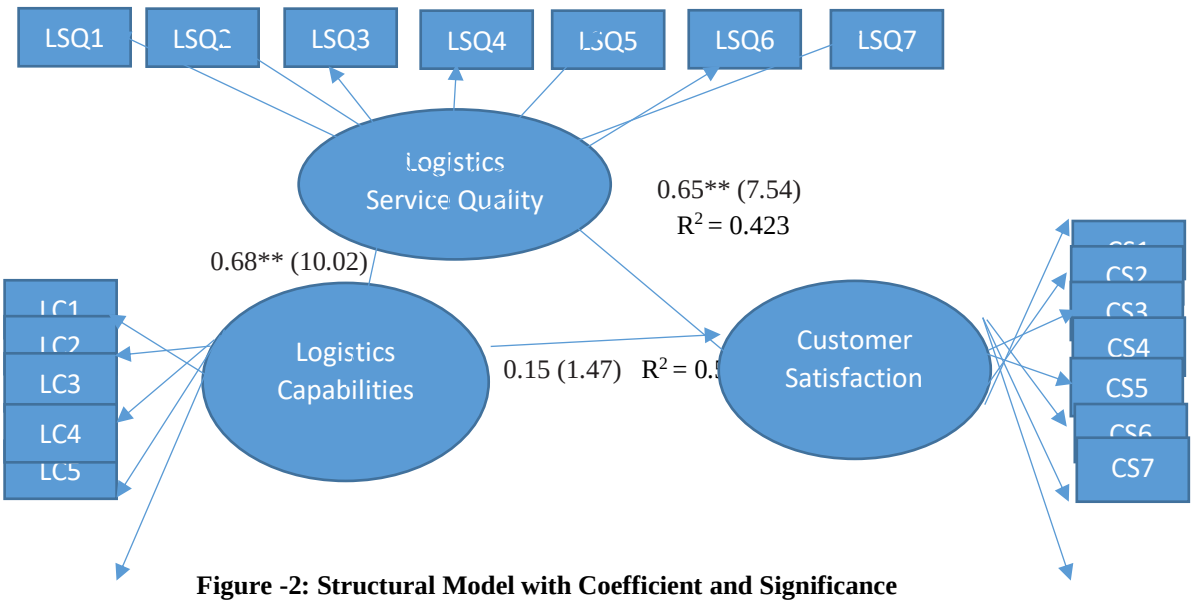

Figure -2: Structural Model with Coefficient and Significance

Note: Mediation estimated by SmartPLS software –bootstrap with n = 87 and 1,000 replicates. Presentation of t-value between relatives (...). *≤0.05 – Level of significance – t value≤1.96; **≤0.01 – Level of significance – t value≤2.58.

Discussion & Conclusion:

This study aims to establish the impact of LC on the relationship between LSQ and CS in the Pharma market. However the result showed that LSQ mediate the relationship of LC and CS. Theoretically the result of this study were consistent with the resources which implies company's capabilities do not help to implement its strategies. As the Pharmaceutical, companies have to be more focused on their logistical capabilities for improving customer satisfaction. Logistics services provided by these companies should be considered for high quality to maintain the image in the market. The study findings supported the research hypothesis, which was to determine the impact of Pharmacy companies' LC on the relationship between the LSQ given and customer satisfaction. Panayides and So (2005) and Saura et al. (2008) discovered that the LSQ influenced CS, much as Lynch et al. (2000) discovered that LC influenced the LSQ and Esper et al. (2007) discovered that these LC had an impact on CS.

Because the LSQ only accounted for 54.6 percent of the variance in the CS construct, it is likely that there are many more factors that influence CS in the context of logistics services. Similarly, LC explained 43.7 percent of the variance in the LSQ construct, implying that there are other influences on LSQ.

Table -2: Assessment of SEM

Relationship	**Structural coefficient**	**SE**	***t* value**	**Hypothesis**	**Decision ($\alpha \leqslant 0,05$)**
LC→CS Without Mediation	0.56	0.54	12.02**	H_2	Accepted
With Mediation					
LC → CS	0.15	0.094	1.47*	H_3	Rejected
LC → LSQ	0.68	0.054	10.02**	H_1	Accepted
LSQ → CS	0.65	0.088	7.54*	H_4	Accepted

Note: *≤ 0.05 – Level of Significance - t value ≤ 1.96; **≤0.01 – Level of significance – t value≤2.58.

The pharmacy companies must be invested in its LC to increase their customer satisfaction in association with Logistics services provided by the analysis of the correlation coefficients of the variables. It has been observed that two logistical capabilities had positive influences in all dimensions of the logistics services quality. One capability is the company's pro-activeness in search for logistics solutions and other is to integrate information with company's customers.

Therefore, Pharmacy companies can develop these two capabilities to become the leader in the market. Pharmacy companies should invest in these two logistics capabilities to promote the logistical services provided in terms of available information and quality in the service provided to customer. Further, aspect of LSQ such as delivery accuracy also having impact on CS. Other aspects of LSQ such as employee friendly attitude, reliable order information and agility in order confirmation influenced all the dimensions of CS of Pharmacy companies. To improve the customer satisfaction the managers and owners of pharmacy companies should be focused on investments in Logistics Capabilities. Through which the companies can be active in finding logistics solutions, reliable information and integration to its customers. The perceived customers LSQ is resultant of the service capacity of the company as well as information quality provided to the customers by the company. Through these logistics services provided by the company, customers' satisfaction achieved which leads to continue to do business and recommending other company for doing business. Company can get a competitive advantage by improving customer satisfaction. Pharmacy companies can be focused to get higher financial returns by improving LC and LSQ dimensions as it leads to increase customer satisfaction. The Limitation of the study is number of respondents (87) which are less to analyze the hypothesis. This study has been done only one location of Central India. These variables can be considered in any other industry where logistics is important and results can be compared with Pharmacy Industry.

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