A CONCEPTUAL MODEL OF LOGISTICS INFORMATION SYSTEM EFFECTIVENESS ON RETAIL OUTLETS TOWARDS CUSTOMER SERVICE QUALITY IN TIRUCHIRAPPALLI

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Abstract: **Logistics is the system of people and things that are intricate in getting a product from the manufacturer where it is made to the person who buys it. Information system is a collaborative arrangement of people, equipment, methods, and control, designed to create information flow in the required arrangement for the user to make the decision and to reduce the risk element. Logistics information system is an applications of logistics functions and carried out number of on time deliveries, and outstanding payments to enhanced efficiency. Major purpose of information system used in retail outlets is to understand and meet the customer requirements and needs. Barcoding and point of sale are commonly used in retail outlets then to identify the variables of logistics information system usage in retail outlets. While using LIS in retail outlets to gain perceived benefits. In addition to, the benefits of LIS effectiveness have influenced to customer service quality of how does a service meets or exceeds their expectations. The purpose of this paper to design a conceptual framework of LIS effectiveness on retail outlets towards customer service quality A pilot study was conducted in 10 retail outlets for tiruchirappalli region to identify the variables of LIS effectiveness and customer service quality in retail outlets are determined.**

Keywords: **Logistics Information System, Point of sale, Bar coding, Customer service quality.**

1. INTRODUCTION

Effective logistics management requires the actual status of goods and services to be communicated in real-time to the different groups of people tangled in the logistics practice. This helps to closer watch on inventory and to avoid losing customers. **Pieter Klaas Jagersma, (2011)**noted that Logistics information system aims at optimizing the total value and cost of generating information across an organization's value chain. Effective Logistics information is a difficult one, but it is manageable. Factors underlying the LIS usage is two different categories, one is organizational context and another one is functional context. In organizational context included user training, top management support, communication effectiveness and firm size. In functional context included information quality and system quality.

Rajiv Bhandari, (2013) Bar code scanning is the fastest and most accurate way for integrating corporate logistics and supply chain. Bar coding is a sequence of parallel lines of different thickness with spaces in between. These bars are information in the codified form, which can be read with the help of a scanner. The information include, nation code, manufacturer name, product details, date of manufacture, material content etc. These details are required at user end for inventory management. Benefits of used bar coding in retail outlets is to maximise sales and reduce stocks using the sales information, reduce paper work and processing time leading , reduce human error , increases logistics system productivity through speed, accuracy and reliability.

Priya S, (2013) POS refers to the area of a store where customers can pay for their purchases. The term is normally used to describe systems that record financial transactions. This could be a manual system, an electric cash register or an

integrated computer system, which records the data that comprises a business transaction for the sale of goods or services. The UPC data and price list are regularly (usually nightly) provided by the mainframe in the corporate headquarters. In each store, a computer that monitors the POS terminals maintains the UPC database and price list. Almost all sales information can be gathered by the front POS (Front POS) system in a more timely and accurate way. The rear POS (RPOS) system analyses sales information from the FPOS system, prints out the UPC barcodes, manages goods by product and places electronic orders. In addition, the RPOS system handles merchandise receiving and inspection, inventory control, physical counting, accounting and vendor management. Benefit of used POS systems is sales analysis can show which product is the best.

Service is assumed to be quality when it consistently conforms to customer expectations. **H.Tezcan & Mehmet Selami, (2013)** Stated the service quality of employees as distinct from the quality that the customers perceived. Service Quality is a blend of two words: service and quality. Services are behavioural rather than physical entities, and have been described as actions, performances, activities or processes. **Beverly K.K., Diane M. Strong, and Richard, Y.W, (2002)** Quality has been defined as fitness for use, or the extent to which a product successfully serves the purposes of consumers. Retailers can enhance the sales services by providing continuous personal empowerment programs on interpersonal communication skills and product knowledge. Staff empowerment will enable staff in the retail business to be more responsive to the needs of their customers. Customer service quality variables are reliability, responsiveness, access, communication, courtesy and tangibles.

2. LITERATURE REVIEW

Effectiveness of Logistics Information System:

Lai K.H, Ngai E.W.T, Cheng T.C.E, (2005) Contended that a LIS is an information system that provides management with relevant and timely information related to logistics. Implementing information technology in retail outlets to bring number of benefits in that industry **E.W.T. Ngaia, Kee-Hung Laib, and T.C.E. Chengb, (2008)** Defined LIS as a computer-based information system that supports every aspect of the logistics management process, which involves the coordination of activities, such as scheduling, inventory replenishment and material flow planning **Srinivas and Krishna, (2009)** Through Information System, suppliers, manufacturers, and customers are integrated into a logistics network for efficient supply chain management. The global nature of logistics now requires information systems that enhance inventory control, track orders and materials and monitor resource utilization. **Bardi, (1994)** Discussed information systems and computer technologies are vital to the development of an organization willing to understand and attain to customers' requirements and needs. The ability of a company to optimize its logistics costs and levels of customer service is affected by the LIS it uses. Add that these systems are extremely important in reducing inventory and lead time along the supply chain. **Shivani Dubey and Dr.Sunayana Jain, (2014)** Examined the effectiveness and accuracy of distribution systems depend on the transfer of information. Logistics information system holds the whole system and coordinates all the components of logistics operations: planning and coordination and operation. Planning and coordination defines nature and location of customers that supply chain operations seek top match to planned product and services and promotions.

Point of sale:

Marijn G.A. Plomp, (2012) Discussed point-of-sale (POS) systems are computerised cash registers which are traditionally used by retailers to ring up customers' purchases. There are several advantages to POS systems. Besides the use of sales data from a POS system for marketing purposes, time consuming administrative activities like ordering, customer. The customer side of the model (marketing, sales, goods issuing, billing, and accounts receivable) can, together with the warehousing part, be automated with a POS system. All activities can be performed at the pay desk in the store, even with an isolated (stand-alone operating) POS system. The procurement tasks can also be implemented in POS systems. **Claudia Loebbecke, (2007)** Analysed retailers have thus considered an array of innovative information technologies (IT) at the point-of-sale (POS).Point of sale features are cash bill showing, overprinted bill, cash declaration Each function, as well as being captured on the till audit roll, produces a tear-off bill at the terminal. In the case of the credit sale bill, the terminal also overprints on to a multipart bill-set the details of the transaction. Each transaction is numbered serially as well as being dated and timed, so that security is very high. **S.Ramesh Babu, P.Ramesh Babu, and Dr.M.S.Narayana, (2008)** Discussed electronic point of sales is a computer based billing system mainly used by retailers that have a large number of regular sales, stock-keeping units, and customers. One of the important objectives of

automating point of sales is to streamline billing operations and increase efficiency. A basic EPOS, usually a standard PC with all its accessories (barcode scanner, weighing scales), handles payment quickly, updates inventory, and provide instant reports on sales and stocks.

Bar coding:

S.Ramesh Babu, P.Ramesh Babu, and Dr.M.S.Narayana, (2008) Analysed bar coding is the most widely used technology for product marking and identification system. Bar coding is a proven technology for automated data collection needs of the business. On retail products, the barcode normally contains the product ID (e.g. item code, product code etc.) which is required to be entered into the computer system to update the data at the time of billing, receiving or dispatch. With the barcode in place, the data is fed into the system automatically by scanning the barcode using a bar code scanner instead of punching the same through a keyboard. The fast checkout and reduced queues attracts more customers and ensures that customer visit the store again and again. Barcodes solutions play an important role in utilizing customized in-store marketing, increasing up-selling and cross-selling opportunities, quickly locating merchandise, easily monitoring inventory and checking prices. Barcode technology enables retailers to improve the customer's experience at the primary point of decision – the selling floor. The Bar Code scanners at point of sales help in the elimination of queues with fast checkout. Bar codes are widely used to implement automatic identification and data capture (AIDC) systems that improve the speed and accuracy of computer data entry. An advantage over other methods of AIDC is that it is less expensive. **Priya S, (2013)** Examined the Universal Product Code (UPC) is a specific type of barcode that is widely used in retail stores for tracking trade items in stores. Its most common form, the UPC-A, consists of 12 numerical digits, which are uniquely assigned to each trade item. Each UPC-A barcode consists of a scannable strip of black bars and white spaces, above a sequence of 12 numerical digits. No letters, characters, or other content of any kind may appear on a standard UPC-A barcode. The digits and bars maintain to represent each 12-digit number visually, and numerically.

Customer Service Quality:

Goetsch, D.L and Davis S.B, (2003) Defined quality is a dynamic state associated with, products, services, people, processes, and environments that meets or exceeds customer expectation. **Choi, J. P., (2001)** Investigated the influence of overall service quality on customer satisfaction and members repurchase intentions at fitness clubs in Seoul, South Korea. He also examined the influence of customer satisfaction on the level of their repurchase intentions. He found that the perceived service quality factor was the most influential predictor of Customer Satisfaction and their repurchase intention. **Caruana, A, (2002)** Examined the concept of service loyalty and proceeds to distinguish between service quality and customer satisfaction. Results indicated that customer satisfaction does play a mediating role in the effect of service quality on service loyalty. For **(Deming's Quality Points)**told quality comprises lack of defect or reduction of variations. **(Juran's message)**Defined quality as a product or service potential to be utilized, and he points the following most popular quality definitions:

1. Quality is matching specifications.

2. Quality is a stage where consumer/user specifications are met.

3. Quality is a fair exchange of a value at a price

4. Quality is potential for utilization.

Gronroos and Christian, (1978) Discussed when a service provider knows how the service will be evaluated by the consumer, so it will be able to suggest how to influence these evaluations in a desired direction. **Lehtinen, Uolevi and Jarmo R. Lehtinen, (1982)** Deliberated basic premise is that service quality is produced in the interaction between a customer and elements in the service organization. They use three quality dimensions: physical quality, which includes the physical aspects of the service (e.g., equipment or building); corporate quality, which involves the company's image or profile; and interactive quality, which derives from the interaction between contact personnel and customers as well as between some customers and other customers. They further differentiate between the quality associated with the process of service delivery and the quality associated with the outcome of the service.

Conceptual Framework:

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┌──────────────────┐        ╭──────────────╮        ┌──────────────────┐
│    LOGISTICS     │        │              │        │    CUSTOMER      │
│   INFORMATION    │───────▶│ Retail outlets│───────▶│    SERVICE       │
│     SYSTEM       │        │              │        │    QUALITY       │
└──────────────────┘        ╰──────────────╯        └──────────────────┘
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3. DISCUSSIONS

For using Logistics information system influenced benefits for retail outlets. From pilot study to identify the benefits of using bar coding and point of sale in retail outlets. Following variables are considered for retail outlets such as Inventory control and updation, sales analysis, sales volume comparison and customer preferences, shorter checkout waiting time, quick response, free errors, report on sales and stocks, billing purpose and transaction simplification. From customer service quality, following variables are considered to measure such as responsiveness, access, reliability, communication, tangibles, understanding the customer and courtesy. In a pilot study variables are identified for logistics information system usage in retail outlets then impact towards customer service quality. All retail outlets first identified how many systems are using for billing purpose in Point of sale. Each computer was connected to point of sale terminals maintain Universal Product Code data and price list. Point of sale and barcoding was used in retail outlets for store automation purpose. UPC tags attached packages of goods and UPC data and price list provided by mainframe in the Corporate Headquarters. By the away of POS and barcoding all sales information gathered and determine the best seller of product. In tiruchirappalli region 10 retail outlets visited and realized the above stated information. Data collection from retailer's via structured questionnaire using 5 point likert scale ranging from 5- strongly agree to 1- strongly disagree in order to measure the effectiveness of LIS. Data collection from customer via questionnaire using the same scale ranging from 5- strongly agree to 1- strongly disagree to measure the service quality regarding LIS effectiveness.

4. CONCLUSION

This paper has designed only a conceptual framework of Logistics Information system effectiveness on retail outlets towards customer service quality in tiruchirappalli region. From the pilot study conducted in 10 retail outlets to identified logistics information system usage variables and Customer Service Quality variables. Furthermore, the future research will be conduct a survey in more retail outlets to collect real time data from retailer's and customer responses in terms of customer service quality via questionnaire towards LIS effectiveness. After the data collection and analysis to measure the perception of customer service quality in retail outlets regarding LIS effectiveness. From the result of data collection will be proceed in another research paper.

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