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ISSUES & CHALLENGES FACED BY WAREHOUSE MANAGEMENT IN THE FMCG SECTOR OF PAKISTAN

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ABSTRACT

The effectiveness and efficiency of warehouse management directly influence organizational performance. Currently, most of the businesses moving to third party logistics (3PL) concept to minimize the cost and increase the product flow. There are several types of research available for 3PL but in the Pakistani scenario, no past research has been conducted on the problems and challenges of 3PL warehouses. Exploratory research has been used in the qualitative approach. The phenomenology research design has been used to reveal the inner thought of perception in certain situations. Research reveals multiple challenges like fast movement inventory flow, space utilization, abnormal and non-seasonal trends, expire and slow-moving inventory, etc. These issues and challenges are directly affected by warehouse management and their KPIs. The study will help warehouse managers, strategic planners to overcome these issues. The 3PL business may plan their strategies according to the outcome of this study. Papers imply supply chain officials to get a competitive advantage in their effective and efficient warehousing.

Disciplinary: Business and Logistic Management.

1 INTRODUCTION

Effective and efficient supply chain management creates a positive impact on organizational profitability. Supply chain management is a competing process of product flow from the sourcing of raw material to customer satisfaction. The supply chain management objective is to enhance the value-added process for customers and reduce non-value-added processes for the organization. Several organizations have secured extraordinary profit by implementing supply chain management (Hübner et al., 2016). There are multiple functions under the umbrella of supply chain management like sourcing, operations, and logistics. Most of the time organizations do not have any particular supply chain management department but actually, every business is practicing on these functions.

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Good organizations are highly concerned to enhance product flow. By high velocity of a product, the industry can protect high product availability and profitability (Huo, 2012; Zhao et al., 2013; Zsidisin et al., 2015). Warehouse management is part of logistics (Faber et al., 2013; Hübner et al., 2016). Warehousing management is a key function of supply chain management. Logistics and warehouse management deal with downstream of the supply chain meaning the product flows after production to customer delivery. Providing fast product delivery at minimum cost is an important objective of warehouse management. There are multiple functions of warehouse management including product receiving, proper stacking, documentation, and dispatch (Ronald & Ballou 1999). All types of business mean large or small or medium size are using warehousing but competition is on efficient warehousing. In Pakistan, all businesses are using warehouse management but practices are different due to product nature, organizational wealth, organization size, nature of the business, customer expectation, etc. Practices and functions of warehousing may differ but the objective is the same throughout the globe to best customer services in minimum resources. All supply chain partners like suppliers, organizations, wholesalers, and retailers have warehouses in different capacities (Bartholdi and Hackman, 2016). These warehouses are responsible for managing all stock keeping units (SKU) differently because every SKU has a different function or flavor (Kembro et al., 2017). There are two types of warehouses, the first one is a raw material warehouse, and the second one is a finished goods warehouse. Manufacturing based business carrying both types of warehouses but service-based business only working on finished goods warehouses. Basic warehousing functions are the same in both types of warehouses but the nature of SKU and customers are different (De Leeuw and Wiers, 2015). There is huge academic work available on warehouse management but in the Pakistani scenario, there is space to explore. Fast-moving consumer goods (FMCG) are a highly emerging industry in Pakistan. Grocery, food, drinks, biscuits, and confectionary related products are fast-moving products. This research paper focuses on warehouse management of the Pakistani FMCG sector. Third-party logistics (3PL) is an emerging concept in warehousing (Kneymeyer and Murphy, 2005). An organization cannot manage all warehouses effectively and efficiently, so this is an option to outsource warehouse operations to third party contractors (Maltz 1994). Organizations can save the handsome amount and avail the high speed of product flow by the 3PL concept. As an identified gap, this study explores the issues and challenges faced by 3PL warehousing by the FMCG sector of Pakistan. The objective of the research is to investigate the real operational issues of warehousing by 3PL and bottlenecks. Research is fruitful for all types of organizations and 3PL organizations. Also, it identifies the best possible solutions for day to day hurdles in warehousing. This research is beneficial for all types of warehouse related managers from the first line to top managers. The supply chain management department and 3PL administrators are significant beneficiaries. This research is helpful for all entrepreneurs to understand warehousing hurdles and solutions. They can create good policies, action plans, and operational strategies for warehouses with the help of this research. There are some research limitations like data is collected from Sindh based 3PL warehouses, due to lack of time and financial support. The research addresses the following questions to improve warehousing operations in the 3PL FMCG sector:

RQ1. What are the key issues and challenges of third party logistics (3PL) warehousing for fast-moving consumer goods (FMCG)?

RQ2. How they solve these operational hurdles in 3PL warehousing for FMCG?

2 LITERATURE REVIEW

2.1 3PL WAREHOUSE DECISION MAKING/PLANNING

Faber et al. (2013) investigated organizing warehouse management,. using a questionnaire survey data from 215 Netherlands and Belgium warehouses. The study found that task complexity and market dynamics directly affect warehouse decisions and planning. Warehouse management system (WMS software) also directly relates to task complexity in the warehouse.

Rahman (2011) conducted an exploratory study of outsourcing 3PL services with an Australian perspective. It examines the logic behind outsourcing, relationship with a 3PL contractor, an average time of contract, service level, logistics cost, and employee morale. Questionnaire data collected from 210 organizations in Australia, most of the organizations outsource their warehouses, fleet, and order fulfillment. Organizations prefer 3PL due to low operational cost, high level of service with flexibility, and low fixed investment. The study identified that organizations are satisfied with the 3PL concept due to a high level of performance. They found a positive impact of 3PL on performance. However, it may negatively affect employees' morale.

2.2 WAREHOUSE DESIGN AND OPERATIONS:

Kembro et al. (2018) conducted a detailed study on adapting warehouse operations and design to Omni-channel logistics. The structured review tool was used to understand the effect of warehouse design and operations by changing the distribution channel. The research revealed several themes that influence the implication of Omni-channel logistics to Omni-channel warehousing. Two major themes were identified, value proposition and physical distribution network design. Strategy for channel distribution, new service requirements, complex distribution and return process, performance metrics, etc. directly affect the warehouse operations in Omni-channel distribution. Huq et al., (2015) highlighted the impact of extra space in warehouse operations.

2.3 WAREHOUSE WORKERS/ STAFF

Kim and Heij (2018) researched improving warehouse labor efficiency by intentional forecast bias, using data from 30 consumer electronic warehouses through a survey questionnaire. Study models depend on demand forecasting through past data and expert opinion, labor efficiency, warehouse operations, and forecast bias. From their study, warehouse personnel does over-forecast the number of order and quantity, which effect the warehouse efficiency. Optimal bias positively supports picking and loading time.

Glock and Grosse (2013) investigated the learning effects in the order picking process. Empirical data was utilized by focusing on German warehouses for manufacturer household products. Layout planning, route planning, and storage location assignments are key variables for this study. The study concluded that the performance of order pickers increases when several picking visits increase. There are major chances of incorrect picking or taking ample picking time when products are placed on new or disbursed locations. Layout and number of visits enhance worker learning which affects order-picking time.

Akhtar and Fischer (2014) investigates the performance of UK dairy-based warehouses by a supervision environment. Research describes the functional level coordination in warehouses and the

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effect of coordination on overall warehouse performance using structural equation modeling. The key variables were functional level coordination's' trust, supervision type, warehouse service quality, company growth, and satisfaction. They found that functional level coordination's trust and satisfaction increase by semi-autonomous management as compare to traditional supervision in warehouses. Warehouse services and quality levels are directly positively affected by satisfaction and trust. Company growth is slow in traditional supervision due to the low level of trust and satisfaction. Semi-autonomous supervision plays a vital role in modern warehousing practices.

2.4 WAREHOUSE LOCATION

Vanchai (2018) studied the identification of warehouse location in Thailand, finding minimum transportation costs to serve their customers, based on data such as distance within cities, population, freight rate, and average vehicle load and distribution time. Khan and Zaidi (2013) also identified the strategic importance of warehouse location.

2.5 INFORMATION SYSTEM OR TECHNOLOGY

Kembro et al. (2017) explored the network video technology and an innovative approach to improving warehouse operations. Multiple tools have been used to conduct this study like on-site visits, interviews, questionnaires, and workshops. Nine-companies were targeted to perform this research. The objective of this research was to explore video applications to expedite warehouse operations and strengthen transparency. After analyzing the data, the researchers concluded that video applications have a high level of potential to make faster and safer warehouse operations as compare to WMS, ERP, and RFID but organizations are reluctant due to investment, undefined return, and staff integrity. Sharma and Shah (2016) examines lean warehouse: transformation and assessment using real-time Delphi (RTD) and analytic network process (ANP). The quantitative and qualitative tool is applied to measure the effect of RTD and ANP on manufacturing firm. Researchers examined the role of lean issues, people issues, and implementation of ANP and RTD. The study finds out that warehouse performance can positively improve by integrating the people and lean issues. Efficient decision-making plays a vital role to create a high level of coordination and trust among warehouse workers.

3 METHODOLOGY

The qualitative method is selected as a research approach in this work. The qualitative method mainly focuses to investigate the data by analyzing employee behavior because ultimately human behavior creates a direct impact on problems and decision-making. Qualitative research is compulsory to respond to research questions because the purpose of this research is to explore managerial behavior in managing 3PL warehouses. The exploratory research purpose is selected to explore the hidden point of view of warehouse managers. It is helpful to collect insight information about challenges. In this research of phenomenology, in-depth interviews were conducted with 3PL warehouses managers, with observation, and discussions. Primary data was collected from first-line managers of 3PL warehouses in the FMCG industry. Four in-depth interviews were conducted from HQ Logistics represented as R1 in the analysis (serving IFFCO, Colgate & Dalda as a 3PL partner),

APL Logistics represented as R2 in the analysis (serving SHAN FOODS as a 3PL partner), I logistics represented as R3 in the analysis (serving Kolsan and Hilal as a 3PL partner) and Indus logistics supply chain (ILS) represented as R4 in the analysis. All questions are open-ended and provided them complete time to respond to his/her opinion without any disturbance. Because our objective is to explore insight operational challenges. Without open-ended questions and without open space to talk, no one can explore actual hurdles. In this study, Purposive sampling was used as a sampling technique because data gathered from the concerned field of people.

4 ANALYSIS

Research Question # 01: What are the key issues and challenges of third party logistics (3PL) warehousing for fast-moving consumer goods (FMCG)?

4.1 PRINCIPAL ORGANIZATION'S INTEREST/DELAY PAYMENTS

After a detailed analysis of input, the researcher found that yes difference of opinion and difference of preference exists within the principal organization's staff and 3PL's staff. It found a routine base challenge because the mindset is different. In warehouse operation, efficiency is the most important factor and for principal organization effectiveness is. Ultimately both are strategic partners, so coordination and understanding can minimize this challenge. In the case of an extreme situation, yes it would be harmful to both partners.

4.2 STACKING STANDARD/SKU PLACEMENT POLICY

Researchers identified this common challenge however most of the respondents argued that we are here to serve but complete all operations with standards in limited time is a big challenge for us. Ultimately order picking time and loading time will affect due to these policies. If we can cope up with this challenge, then we can use our ample time and human resources efforts.

4.3 SPACE LIMITATION/ OVER OR UNDER UTILIZATION OF SPACE

Over and underutilization of space exist in all said warehouses however intensity is different. All respondents argued that it is not possible to add or subtract space within 1-day notice or add or subtract space for 1 week. In the EID or other seasons, inventory movement is high but in offseason, we have to maintain a huge number of inventories. This problem is directly connected with planning or highly significant at the time of land purchase. They concluded that we can extend our human power support and technical support but not possible to support in space with all standards. One of the respondents also claimed that underutilization of space is also challenging for us because we are paying for complete space.

4.4 SLOW MOVING INVENTORY

It is a very mutual concern found within all warehouse representatives. It is negative because stuck stock occupied your space, finances, and involvement of human resources. It directly affects warehouse performance because you need extra concentration over these products with ample time of coordination. However, in the fast-moving consumer goods industry, the overall flow of the product is really fast and the ratio of slow-moving is very low but it exists. For smooth operations, we have to address such kind of challenge.

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4.5 SALES VARIATION

Quite significant and common problems found by warehouse managers. Because in the FMCG sector, all products are daily routine products for consumers, so we observed a lot of sales variations in EID, Ramadan, and other types of events. This problem reduces warehouse efficiency, increases overtime cost, the chance of error, extra picking time, and delay in operations. An unexpected change in demand will directly affect the flow of products because every warehouse has limited resources to address. The second one and most important factor is a delay in the documentation when you stretch yourself then you have to trade off on some operations like documentation. This is a really big challenge for warehouse staff to entertain all peaks of sales without compromising documentation.

4.6 HUMAN MANAGEMENT (UNDER AND OVER UTILIZATION OF WORKERS)

Understanding of products found common hurdles for warehouse executives. In a detailed discussion with warehouse representatives, it observed that warehouse effectiveness and efficiency will not improve without the involvement of warehouse workers. Picking and stacking are time tacking activities in the warehouse, if the worker is educated or trained then the warehouse can improve performance. If workers are not trained or educated, then the warehouse may face inventory loss and the wrong dispatch issue. At the loading dock, if the supervisor found any picking error then loading time will affect by at least 10 to 20 minutes.

4.7 TRANSPORTER AVAILABILITY AND COUNTRY'S INFRASTRUCTURE:

All respondents mutually agree on the significance of the transport contractor. Trust and coordination with the transporter is a major challenge in this regard. Most of the time transport is not on one page with the warehouse. Poor infrastructure also plays a vital role in this issue. Transporters are not willing to serve in these areas at a nominal cost.

Table 1: The responses of 3PL warehouse managers related to challenges.

Challenges	Respondent-1	Respondent-2	Respondent-3	Respondent-4
Delay in payments	√	√	√	√
Stacking standard	√	√	√	√
Space utilization	√	√	X	√
Slow-moving inventory	√	√	√	
Sales variation	√	√	√	√
Human management	√	√	√	√
Transporter	√	X	√	√
Law & order situation	√	√	√	√

4.8 LAW AND ORDER SITUATION OF COUNTRY

In Pakistan, the law and order situation is a major challenge for all types of businesses, Table 1. As an operations manager in the warehouse, we have to endure a smooth flow of material but strikes and blockage are major hurdles. As it's a purely external factor so we cannot directly influence or resolve.

Research Question # 02: How they solve these optional hurdles in 3PL warehousing for FMCG?

4.9 MAXIMUM UTILIZATION OF CAPACITY

The number of solutions found from respondents, it starts with planning to purchase a new warehouse or construction. This planning will lead you to success through operations improvement. One respondent is consciously underutilized for the best services but the respondent argued that we

can resolve this issue with a yearly meeting with the sales department. Rack placement and installation can also help to counter this space constrain. However, there is not any short term solution so proper planning can save such types of hurdles.

4.10 STUCK (SLOW MOVING) INVENTORY

Mutual answer discovered that state of the art technology and coordination is the only solution to deal with the stuck stock challenge. As a 3PL warehouses, they have to facilitate by on-time intimation and communication. On-time intimation can solve multiple problems. Stuck inventory would move to another warehouse as well. Transportation cost effect in this solution but as compare to opportunity cost, this decision is more appropriate. SOP (sales and operations planning) is also a good forum to cope up with a said topic.

4.11 SALES VARIATION (UNPREDICTABLE DEMAND)

Segregated assign area for fast track, direct loading from the container, postpone documentation and coordination found a common solution to cope up with unpredictable demand. In the FMCG sector, you can expect such type of sales peaks in every month or quarter. The good 3PL warehouse can prepare themselves to solve this problem. Extra vehicles and loaders hiring are also a good option. Transporter also plays a key role in this regard. This is all about trade-off to overcome these sales peaks.

4.12 RESOURCES TO IMPROVE OPERATIONS FOR SENSITIVE PRODUCTS

Multiple solutions were found to deal with product sensitivity. As a 3PL warehouse, this is our basic and first responsibility to make keep them safe. Especial handling equipment. Customized racks, stacking standards and proper loading techniques are an easy solution to deal with this challenge. In the FMCG sector, product sensitivity is high with fast product flow so special care is not an easy job. However, mutual efforts from labor training to technology, we can ensure safe transactions in the warehouse. All respondents mutually agreed on all the above outcomes and importance.

4.13 COORDINATION WITH STAKEHOLDERS

In Pakistan, they have not favorable conditions of law and order especially in northern areas and Balochistan. Table 2, planning found one of the key solutions to deal with the external challenge. With the help of concern stakeholders, we can set our priority and serve them accordingly. However, still, there is a difference of opinion among all respondents because it matters situation to situation. We cannot generalize the law and order situation or any other external challenge.

Table 2: The responses of 3PL warehouse managers in solving routine challenges.

Solutions	Respondent-1	Respondent-2	Respondent-3	Respondent-4
Planning	√	√	√	√
Follow-up on slow-moving	X	√	√	√
Fast track area	X	√	√	√
Follow standards	√	√	X	√
Coordination	√	√	√	√
Worker education	√	X	√	√

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4.13.1 WORKER UTILIZATION

Except for one respondent, all agree on the training concept. Most of the organization have their senior dedicated loaders. All senior leaders are responsible to guide newcomers. Punishment policy is also found as a solution for high labor productivity. It would be fire workers as well. As concluded almost all are using product tags but in a few warehouses it found useful but in few, it does not. Picture printing tags found one of the creative models to expedite labor productivity.

5 CONCLUSION

Research questions have been addressed with multiple factors. Several issues faced by warehouse management professionals, especially when someone is working in a third party warehouse. This research revealed multiple challenges and suggested their solutions. Managing a huge inventory is the most fundamental challenge in operations. Product movement is so fast that it is not easy to maintain all relevant documents, batch-wise inventory, and FIFO implementation. However, ownership of operations is also a critical issue in this whole scenario. Warehouse space also directly affect the performance because at third party warehouse under and overutilization is highly harmful to service and performance. If the warehouse is being underutilized, it reduces the overall efficiency and if the warehouse is being over-utilized, it will reduce the service level. The study reveals that fluctuation of demand creates a bundle of problems for warehouse operations. The fluctuation of demand may occur due to a competitor's market image, unplanned events like holidays, or substitute unavailability. In this non-seasonal product demand, customers need their product without any delay whereas the warehouses have their limited capabilities. Proper forecasting and collaborative planning is the only solution to counter this fluctuation in demand. Warehouse capacity has a limit so with mutual efforts warehouses can best utilize their capacity. Warehouse planning like warehouse design should be planned for at least future 5 (five) year sales. Stock picking time is directly affected by the warehouse layout. We can reduce picking time by effective warehouse layout and space utilization. High picking time is very dangerous for warehouse operations. As a 3PL warehouse, they have to take care of product shelf life and product sensitivity. In this regard, warehouse staff should highlight slow-moving products with the help of information systems and discuss with concern stakeholders daily. Worker education is also the most important challenge because most of the workers are uneducated. All stakeholders should on one page and work as business partners, not as a contractor. The policy implication of this research would be highly beneficial for all stakeholders like 3PL owners & operational managers, principal organizations, distributors, potential investors in the 3PL business, FMCG sector, and researchers. With the help of findings, decision-makers can increase their effectiveness and efficiency.

6 AVAILABILITY OF DATA AND MATERIAL

Data can be made available by contacting the corresponding authors

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