Relationship Between Out-Of-Stock Items And Retailers' Loyalty In The Pharmaceutical Items Supply Chain

Gobena Beri Deressa*, Prof. (Dr.) Ajay Trivedi

*Ph.D. Scholar - Faculty of Commerce, Parul University, Waghodia, Vadodara Gujarat, India

Dean - Faculty of Commerce, Parul University, Waghodia, Vadodara Gujarat, India

Abstract: Temporarily out-of-stock items in the pharmaceutical business can cause problems for multiple parties. It can result in possible sales losses for whole sellers and high dissatisfaction among retailers. Thus, the aim of the study is to look into the relationship between out-of-stock items and retailers' loyalty in the pharmaceutical items supply chain, in the case of Hawassa city, Ethiopia. A narrative study methodology was employed, as well as statistical and subjective study methods. A simple randomized sample procedure was used to acquire the relevant data from 86 participants. Parametric metrics like as incidence, %, means, and normal deviations was used to examine the acquired data . Besides, inferential statistics such as Correlation was applied to see the relationship between loyalty and out-of-stock. The study's finding showed that out-of-stock in the pharmaceutical business is a common phenomenon in the study area. These days many essential drugs are being out of stock. As a result, retailers were forced to purchase pharmaceutical items at another whole seller or substituted by another brand within the same product category. Therefore, pharmaceutical items out of stock strongly associate with retailers' loyalty because retailers' loyalty is determined based on the presence or absence of pharmaceutical items.

Keywords: Loyalty, Out-of-Stock, Pharmaceutical, Retailers, Supply chain.

1. INTRODUCTION

Out of stock is the time used to designate the process when the inventory of a specific item is exhausted from the shelf. The word is usually interchangeable with stock out. Out of stock generally refer to the product not available for sale elsewhere in the supply chain when required. There are consequential costs incurred when stocks are not available to meet demand. Moreover, out of stock is more costly than losing sales. In supply chain management, both overstock and out-of-stock items had their business industry problems because overstocking leads to cash flow problems, unnecessary discounts, and exposure to stock expiry. On the other hand, stock-outs lead to lost sales. Besides, stock-outs can seriously impact the business as it affects the retailer's trustworthiness and satisfaction.

Globally, the out-of-stock situation negatively affected the whole seller, retailers, and end-users in the supply chain management. It also consequential costs that range from losing customers to brand loyalty, even extending to the store shut down. Customer behavior in the short or long term is another indicator of the powerful effect the stock out. Customers want the best product at the right time in the right place at all times. However, the existence of stock-outs reduces customer service because customers may delay or cancels their purchase. Thus, stock-outs cause negative emotions for customers. As a result, customers can be annoyed and frustrated. Thus, it should be noted that stock-outs affect customers' loyalty to the store and their attitude to the brand [1]–[3].

It is very common to observe a situation in the Ethiopian market more frequently in pharmaceutical items. In Hawassa city, there are 110 pharmaceutical item retailers and 33 whole-sellers, including government-owned. Therefore, the study had the following research objectives. First, it assesses the out-of-stock situation of pharmaceutical items. Second, it assesses the loyalty of retailers towards whole sellers in pharmaceutical items. Finally, this study identifies the relationship between out-of-stock items and retailers' loyalty to the pharmaceutical [4]–[6].

1.1 Method of reducinf out of stock item

- *Reduces himan error:*

If you sell high-volume goods via several channels, be certain to reorder and acquire before you run out, and maintain enough backup stock on hand to tide you over until fresh items come from your supplier. By examining

your sales, present order numbers, and on-hand quantities, you can anticipate and establish your reorder point. Even if you don't use forecasting, a simple reordering point notice may help you solve out of stock problems. This may be done manually or with the help of warehouse management software such as SkuVault. SkuVault has replenishing reporting, which alerts you when inventory levels fall below the intended level. You can regulate and refill across three separate report kinds with this report: order, replace, and assembly. It may be used for sales prediction, repurchase point, and highest order amount, among other things .

- *Reduced human error:*

To keep your inventories accurate, you need to remove as little personal mistake as feasible. While it's impossible to totally eradicate individual mistake, you can considerably decrease it by putting in place sound procedures and processes. One of the easiest ways to reduce human error is to use scanners to record inventories, fulfil orders, and enter information into your stock administration system. When individuals type, there are bound to be mistakes. Screening might assist you avoid making mistakes. Scanner, in fact, might assist you enhance your efficiency by electronically reporting problems, in addition to avoiding personal mistakes. Another method a warehouse operation manager might limit human mistakes is to measure and monitor performance on a regular basis. Set maximum deficit targets and track progress against them on a regular basis. Embracing the concept of continuous improvement, in which you may continue to look for flaws and take corrective action, whether it's with people or processes, to enhance operations[7].

- *Conduct regular cycle count:*

According to the GS1 US Apparel and General Merchandise Initiative, which is made up of retailers, distributors, and suppliers, the typical retail business in the United States has an accurate inventory count on just 63 percent of its stock. That's a lot of money or stock that may have gone missing. Oversells and out-of-stocks result from inaccurate inventories. Greater than 30% of firms have sold things that seemed to be in stock but couldn't be found in the inventory. Inventory that is organized is correct merchandise, and stockpile that is correct is less prone to out-of-stocks. Cycle counts can help you keep track of your merchandise and warehouse's condition and enhance it [8].

2. LITERATURE REVIEW

S. U. Kucuk [9] stated that because many impoverished countries lack adequate distribution methods and technology, merchants must typically tackle the out-of-stock (OOS) issue on their own inside their shops rather than depending on their suppliers. Many OOS research have demonstrated, however, that OOS costs are dictated by customer reactions to the OOS item, which are primarily influenced by brand and store loyalty. In the framework of this research, the effects of in-store merchandising and shop attractiveness variables on customers' brand and store loyalty in out-of-store circumstances in Turkey's emerging retailing sector were investigated. For examining factors on 544 customers' reactions to OOS items in three various size shops, the Ordered Logit Model was proven to be the most suitable. The findings revealed that, in addition to the impact of in-store marketing in bigger size shops, in-store pricing often affects store loyal customers' brand-switching choices in three stores for a certain soft drink. In an OOS scenario, the variety richness of alternative shops may further impact customers' store-searching selections. As a result, merchants should seek to promote store loyalty by assisting with in-store merchandising assistance in order to prevent OOS expenditures.

A. C. Marqui [10] Stated that Out-of-stock (OOS) is a long-standing issue for all merchants. Any study, on the other hand, has categorized the reasons of OOS and the remedies that have been presented. In this context, this study presents a comprehensive assessment of the strategies used to minimize OOS situations, and it was discovered that cooperation and visibility are at the heart of the solutions. On the opposite side, advertising initiatives like selection, store/product loyalty, and distributing network are advocated in order to control OOS scenarios in order to cut costs without resolving the reasons themselves.

J. Ranjan and S. Puri [11] Proposed that Customer experience, pleasure, and service will become the limiting differentiators in the retail business. Retailers are under increasing pressure to enhance inventories movement and consumer care as a result of increased competition. Overstocking (generating to cash flow issues and unwarranted discountstock-outsed sales owing to stock outs may both be the outcome of poor logistics management. Stock outs may have a significant negative influence on a company's reputation and customer satisfaction. Before

implementing any retail inventory model, it's critical to determine the price of a retailer stock out. This paper provides retailers with significant insights about customer value, happiness, and loyalty that they can use to develop their logistics and inventory models. It looks at the link amongst consumer loyalty, consumer benefit, consumer happiness, logistical value, and out-of-stock situations first. Second, it looks at the impact of better inventories administration and transportation administration on customer service. Finally, this research offers retailers useful information on how to manage customer attitudes in stores by making better educated and sensible judgments about retailing item offerings and related ambient elements.

3. METHODOLOGY

3.1 Research design:

In this study, a descriptive type of research design was employed. Since the study aimed at collecting information from pharmaceutical items retailers on their attitudes and opinions concerning the out-of-stock situation of pharmaceuticals at wholesales and their loyalty. This approach has the distinct benefit of becoming a quick and efficient way to gather information from a big group easily and abundantly.

3.2 Instrument used:

The population of this study was private drug stores in Hawassa city. According to Hawassa City Administration Health Department (2019), there were 110 private drug stores. Thus, Yamane (1967) formulation was used to compute the example scope as follows:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{110}{1 + 110(0.05)^2}$$

$$n \approx 86$$

Where: n = Sample size

N = Total Population

e = Sampling Error

After determining the sample size, individual respondents from the sampling Simple random selection methods were used to choose the frames. In a straightforward randomized sample, technique (lottery method), each drug store was numbered by putting every numeral on a different sheet of paper in a logical and sequential way These bits of papers was combined and placed in a box, from which number was picked randomly until the sample size reaches the required sample size fulfilled.

3.3 Sampling:

This study employed both closed-ended and open-ended questionnaires as an instrument for data collection. The questionnaire comprises three parts. The first part was centered on the general information of the respondents. The second and the third part of the questionnaire were focused on pharmaceutical items' out-of-stock situation and retailers' loyalty, respectively. A five-point scale were used in designing the questions. The internal consistency of the research instrument was tested using Cronbach's alpha coefficient. The information gathered was evaluated utilizing description analytics and inferential statistics with SPSS software.

4. RESULTS AND DISCUSSION

This section deals with the analysis of data gathered on pharmaceutical items out-of-stock situations in Hawassa city.

Table 1: Diagrammatic Representation of Perception of Retailers on Pharmaceutical Items Out-of-Stock Situation.

Items	SDA	DA	N	A	SA	Mean	SD

Existence of stock out because of item expiration	3.5%	12.8%	16.3%	31.4%	36%	3.84	1.157
Absence of enough pharmaceutical items	4.7%	8.1%	8.1%	36%	43%	4.05	1.126
Total absence of pharmaceutical items	3.5%	5.8%	8.1%	37.2%	45.3%	4.15	1.035
Whole sales dash board becomes out-of-stock	3.5%	14%	20.9%	45.3%	16.3%	3.57	1.035
Poor inventory system	4.7%	11.6%	31.4%	34.9%	17.4%	3.49	1.060

Note: SDA= Strongly disagree, **DA**= Disagree, **N**= Neutral, **A**= Agree, **SA**= Strongly agree, **SD** = Standard Deviation

As Table 1 shows, sampled respondents agreed that they have encountered out-of-stock because of pharmaceutical items' expired date (Mean= 3.84, SD=1.157), encountered a shortage of enough items (Mean= 4.05, SD= 1.126), and completely lost some pharmaceutical items (Mean = 4.15, SD= 1.035), the whole sellers' dashboard becomes stock out (Mean= 3.57, SD= 1.035), and whole sellers have inaccurate stock-out and existing items (Mean = 3.49, SD=1.060). The result indicated that there is an out-of-stock situation in the study area's pharmaceutical items. The qualitative data results also proved that pharmaceutical items out-of-stock are a common situation in the pharmaceutical business. Currently, many essential items are out-of-stock and have become a serious issue in the city. Respondents added that out-of-stock happened due to foreign currency constraints at the upper stream case of the supply chain, resulting in an imbalance of demand and supply. They also argued that out-of-stock declines sales volume.

4.1 Retailers' Loyalty:

This section deals with the analysis of data gathered on pharmaceutical items retailers' loyalty. Therefore, the results are presented in Table 2.

Table 2 Diagrammatic Representation of Perception of Retailers on their Pharmaceutical Items Loyalty

Items	N	R	S	F	A	Mean	SD
Item switch	10.5%	12.8%	32.6%	26.7%	17.4%	3.28	1.204
Category switch	54.7%	29.1%	8.1%	5.8%	2.3%	1.72	1.002
Delay purchase	26.7%	24.4%	24.4%	20.9%	3.5%	2.50	1.196
Lost sale	27.9%	46.5%	15.1%	7.0%	3.5%	2.12	1.011
Store switch	4.7%	5.8%	16.3%	40.7%	32.6%	3.91	1.070

Note: N= Never,   **R**= Rarely,   **S**= Sometimes,   **F**= Frequently,   **A**= Always,   **SD** = Standard Deviation

The results of Table 2 indicated that they sometimes substitute the same brand for a different size or variety (Mean= 3.28, SD=1.204), rarely switched to substitute products from another product category (Mean= 1.72, SD= 1.002), often switched to substitute products from another product category (Mean = 3.85, SD= 1.153), rarely postponed buying items not to buy it from another whole seller (Mean=2.50, SD=1.196), canceled the item they need to purchase (Mean = 2.12, SD=1.011), and often purchase items at another whole seller (Mean = 3.91, SD=1.070).The result indicated that store switch is the priority for pharmaceutical item retailers during their purchase practice, followed by brand and item switch. On the other hand, they rarely use category switch, lost sale, and delay purchase. The results of the qualitative data also indicated that retailers become loyal depend on different situations. The retailers' loyalty depends on stock availability, credit facility, good marketing management, and whole sellers' benefits packages.

The relationship between out-of-stock and retailers' loyalty was analyzed using the correlation coefficient. A correlation expresses the strength of the relationship between two variables in a single value between -1 and +1. If the value of a correlation coefficient is zero, there is no relationship between the variables. Bhattacheriee (2012) further classified the strength of correlation coefficient between ±0.81 and ±1.00 as very strong, between ±0.61 and ± 0.80 as strong, between ±0.41 and ±0.60 as moderate, between ±0.21 and ±0.40 as weak, and between ±0.00 and ±0.20 as none. Therefore, in this section, the correlation between pharmaceutical items out-of-stock and retailers loyalty was presented in Table 3 as follows:

Table 3: Diagrammatic Representation of the Relationship between Out-of-Stock and Retailers Loyalty.

		Out-of-Stock	Retailers Loyalty
Out-of-Stock	Correlation coefficient	1	-.604[**]
	p-value		.000
	N	86	86
Retailers Loyalty	Correlation coefficient	-.604[**]	1
	p-value	.000	
	N	86	86

The results of Table 3 showed that there is a statistically significant negative correlation between pharmaceutical items out-of-stock and retailers' loyalty (r= -0.604, p<0.01). The correlation coefficient between out-of-stock and retailers' loyalty was -0.604, indicating a strong relationship. This implied that whole sellers have available pharmaceutical items, retailers become loyal to whole sellers, or vice versa. The qualitative data results also revealed that the pharmaceutical item retailer's loyalty highly depends on the presence of items/ products at a store.

5. CONCLUSION

Pharmaceutical items out-of-stock is a common situation in the pharmaceutical business of Hawassa city. At this time, many essential items are out-of-stock and become a serious problem in the city. Therefore, whole-sellers should be active enough to stock drug items because they are not luxurious products that people buy when they get money. The availability of a poor inventory system was also one reason for out-of-stock. Whole sellers' had inaccurate data for stock out and existing pharmaceutical items at the back of their dashboard. Therefore, whole-sellers should improve their inventory management system with software-aided packages that can easily flag the reordering appointment and advisable to arrange stock out registration ledger at the sales point.

Pharmaceutical item retailers' loyalty depended on stock availability and their direct benefits such as credit facility, good marketing management, and promotional item. Store switch is the priority for pharmaceutical item retailers during their purchase, followed by the brand switch and item switch. They rarely use category switch, lost sale, and delay purchase. Retailers become loyal depends on different situations. Some pharmaceutical item retailers become loyal if they get enough items from a certain whole seller or stock availability and others become loyal if they get an item at a low price. Therefore, there has to be trust and continuous communication between retailers and whole sellers about the available stock in the warehouse to minimize the stock out frequency.

Pharmaceutical item retailer's loyalty highly depends on the presence of items/ products at a store. As whole sellers have available pharmaceutical items, retailers become loyal to whole sellers. Therefore, to fulfill the demand of retailers and assure the level of their loyalty, whole-sellers should conduct the demand-based survey and find the way they can generate enough foreign currency from the commercial banks of Ethiopia to smoothen the flow of pharmaceutical items through the supply chain.

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