

Research on the Problems and Countermeasures of Minimart Inventory Management from the Perspective of Supply Chain

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Abstract. Inventory management is an important part of enterprise operations. By keeping inventory at a manageable level, one may cut expenses overall, prevent overstocking and out-of-stock situations, limit inventory fund usage, and quicken fund turnover. Compared to supermarkets, minimarts usually have characteristics such as a wide variety of goods, frequent circulation, a smaller warehouse, a lack of professionalism in inventory management and so on, which makes their inventory management different. Only by doing a good job in inventory management can minimarts not fall behind in competition with supermarkets, and can minimarts achieve healthy and sustainable development. This article mainly discusses the importance and existing problems of inventory management in minimarts, such as the costs of inventory management in minimarts are at a high level, less attention to inventory management, serious inventory backlog, overdue goods and insufficient inventory. Then propose improvement strategies that can help minimart have better inventory management to increase economic benefits.

Keywords: Inventory Management, Supply chain, Minimart.

1. Introduction

Any enterprise has limited resources and cannot obtain competitive advantages in all business areas. However, it can integrate its core competitiveness with the advantageous resources of numerous links, utilize the advantages of the supply chain, enhance its competitiveness, and increase economic benefits for the enterprise. Supply chain is a system that includes multiple objects such as supplier, purveyor, manufacturer, stockholder, carrier, retailer and terminal customer. In supply chain management, the biggest share of all current assets is the inventory of items in commercial firms; their value will have a decisive impact on the value of current assets. Correctly reflecting the value of inventory goods is extremely important for fairly estimating the value of current assets and fairly displaying the company's financial situation, operational effectiveness, and so on. The level of inventory management not only affects a company's competitive strength but also has a great impact on its product quality, price, delivery cycle, etc.

Small retail enterprises are an enterprise form that implements independent operation and accounting. All business management activities of the enterprise are the responsibility of one owner. In recent years, as one of the most rapidly developing retail formats, minimarts are widely liked by consumers for wider coverage, more convenience and e-government services. The inventory management of minimarts is the key to their successful operation, as it can directly affect the sales and profits of minimarts. Therefore, analyzing the problems in minimarts' inventory management and proposing countermeasures is of great significance for improving the operational efficiency and competitiveness of minimarts.

This article aims to identify some common problems in inventory management of convenience stores, combine existing knowledge, and come up with effective response measures to help convenience stores solve problems in future business management and enable them to achieve better development.

2. The Existing Research

2.1. Inventory Management Methods

Inventory control in supply chain management is an important content of supply chain management [1]. With the advancement of the marketization process, inventory management has transformed from a single backup protection function to an essential function for enterprises, which helps to survive and develop. Inventory management methods can be roughly divided into three types: Vendor Managed Inventory, Customer Managed Inventory and Jointment Management Inventory.

(1) Vendor Managed Inventory (VMI)

Vendor Managed Inventory is an inventory management model and approach where suppliers manage inventory on behalf of clients, create inventory strategies and replenishment plans for them, and replenish depending on sales data and inventory levels. Based on actual sales market fluctuations, a manufacturer or distributor replenishment system can be created by centrally monitoring the inventory and sales information of numerous merchants. The accuracy of retailers' sales forecasts can be increased, manufacturing and order lead times for manufacturers and distributors can be shortened, and the frequency and batch size of replenishments can be optimized by connecting supply and consumption. Donna Sabila Alzena et al. found through their research that inventory control using VMI ensures the availability of goods $\pm 70\%$ and can reduce the accumulation of goods $\pm 30\%$ at the retail level [2].

(2) Customer Managed Inventory (CMI)

Customer Managed Inventory is an alternative inventory control strategy to Vendor Managed Inventory. Many people in the distribution system think that because merchants are closest to the consumer market, they have the most influence over how the distribution system understands consumers' purchase patterns. Retailers should naturally control inventory as a result, and it should be the most important component. According to proponents of this viewpoint, participants in the distribution system who are farther away from the consumer market are less able to predict changes in consumer demand accurately. Deyu Sun established an agreement replenishment system based on customer managed inventory, achieving improved sales performance, increased customer profitability, and satisfaction in the consumer market [3].

(3) Jointment Management Inventory (JMI)

An inventory management strategy called Joint Management Inventory sits in the middle of Vendor Managed Inventory and Customer Managed Inventory. It refers to the combined management of inventory by suppliers and customers to determine inventory levels, as the name would imply. It combines the advantages of manufacturers or suppliers who are better knowledgeable about the manufacturing process with those of retailers who have access to consumer market data and are able to respond more quickly and precisely to customer consumption trends, leading to more accurate assessments of supply and sales. By using data from sales points and retailer inventory status, suppliers upstream of the distribution system are better able to detect changes in the consumer market. The sales point at one end of the system may more precisely manage inventory levels and financial investments thanks to the overall system view. The summary of information by sales points enables the system as a whole to react quickly to market developments. This management approach is mostly used in China for convenience shop inventory management. Retailers in the JMI environment can ask suppliers for advice or recommendations on various inventory control factors as well as the most recent product information. Retailers must choose their own merchandise, nevertheless, as an independent company. Xiaojuan Sheng proves that JMI has a practical effect on inventory cost saving [4].

2.2. The Existing Research of Inventory Management

The importance of inventory management was once overlooked, but with further research on the supply chain, it is believed that controlling the cost of inventory management plays a vital part in regulating the supply chain's overall cost.

The study of Sharma Deepak S. demonstrated that there was a significant relationship between return on asset (ROA) and inventory days [5]. By adopting a "make with buy" model, Darmawan Dani et al. were able to cut overall inventory expenses, including maintenance, ordering, setup, and procurement costs as well as the total cost of goods [6].

Huang Peiqing et al. elaborated on several measures that can be taken to improve supply chain management in response to potential issues in supply chain inventory, in order to accomplish the objective of enhancing end-user experience [7]. The study of Chunhao Wang et al showed that moderate implementation of inventory management has the most effective effect on improving enterprise performance. Further research has revealed certain variances amongst industries in the effect of inventory management on business performance, with industry scale and gross profit margin being the main factors affecting industry differences [8].

2.3. The Existing Research of Inventory Management in Retailing

Minimarts are an essential commercial form in modern cities, and inventory management is a crucial link in the operation process of minimarts. Reasonable inventory management can help to understand and grasp inventory status as soon as possible, and can promptly address inventory surplus and shortage issues in the warehouse, reducing inventory space occupation and total inventory costs. Inventory management controls the occupation of existing funds to a certain extent, accelerates capital turnover, and ensures the efficient operation of enterprises.

The operating characteristics of minimarts require minimizing the inventory of goods in individual stores; therefore, inventory management has always been a key and difficult point in minimarts operation and management [9]. Minshu Li pointed out that retail enterprises should take inventory management seriously, which can make the relationship between inventory goods, customers, and the market more harmonious, and to some extent ensure the economic interests of target retail enterprises [10]. Jiaquan Yang et al. found that retailers can influence manufacturers' wholesale price decisions by holding strategic inventory, thereby affecting retail price competition between traditional retail channels and electronic direct sales channels [11]. Therefore, the importance of inventory management in minimarts cannot be ignored.

Through a real sales data-based empirical investigation, Hau-Ling Chan et al analyze the real inventory decisions in a fashion retailing company. They found that inventory management decisions have a significant impact on sales [12]. Qing Li found a better optimal policy that required data on both the total amount of inventory and the inventory with a one-period remaining lifetime in order to maximize inventory management. [13].

3. Problems in Inventory Management of Minimarts

3.1. The Costs of Inventory Management in Minimarts are at a High Level

Due to the wide variety of products and the moderate quantity of goods that are needed in minimarts, they usually cannot get the lowest wholesale price, so the total cost of purchasing is relatively high. Due to the large inventory scale of minimarts, corresponding storage facilities are required to store goods, which requires payment of storage fees, including rent, equipment costs, and labor costs. Due to the need for minimarts to ensure a sufficient supply of goods and avoid out-of-stock situations, it is necessary to maintain a certain scale of inventory, especially seasonal products that can lead to phased inventory growth. For example, in summer, due to the high sales volume of some products such as beverages and ice cream, additional inventory is needed to meet customer needs, which will also lead to an increase in inventory procurement costs and capital occupation costs. Due to reasons such as unsold products or unreasonable procurement arrangements, the expiration of convenience store products, as well as damage during storage, will increase operating and management costs.

3.2. Less Attention to Inventory Management

Good inventory management requires a strict managerial system, suitable management methods, and a specially assigned person to take responsibility to ensure that inventory is at an appropriate level. Nevertheless, usually, minimarts do not establish relevant regulations and do not have dedicated employees for inventory management, not to mention professional training for employees in inventory management. Commodity inventory management is an important part of the current operational management of retail enterprises. Once minimarts and their staff neglect the management process and carry out work without clarifying their own responsibilities, it will directly affect the quality of inventory management work. Realistic issues such as discrepancies between the book content and the actual situation, and incorrect distribution of goods may arise as a result. In addition, the lack of sound supervision and assessment rules and regulations in retail enterprises is also a key factor affecting the quality of their inventory management work.

3.3. Serious Inventory Backlog

In real work, many minimarts like to hoard goods, believing that this can bring more economic benefits to themselves. At the same time, many minimarts blindly buy goods and are unable to make accurate sales forecasts therefore unable to develop correct procurement plans, this can also lead to a backlog of goods. However, this lack of planned backlog of goods not only fails to create more benefits for oneself but also affects working capital and increases inventory costs. Serious discrepancies in commodity turnover rate and failure to handle excess inventory in a timely manner are the main reasons for the backlog of goods.

3.4. Overdue Goods

When the sales speed of goods slows down and there is a large amount of inventory, it is easy to lead to expiration. For example, when a new beverage that is deeply loved by consumers appears, the sales of other beverages will decrease as a result. If a large amount of other beverages were previously stockpiled, it will be difficult to sell them now, leading to other beverages not being sold out within their shelf life. If the inventory management of minimarts is improper, it can also cause expiration. For example, if a product has a short shelf life but the minimarts do not adjust its procurement plan in a timely manner. Summer is usually hot, and the sales of ice cream also increase with the climb of temperature, but if the summer is not as hot in a certain year, the inventory of ice cream will not be sold out for a long time, they will face the risk of expiration. Products with short shelf life due to seasonal demand changes often fall into this dilemma Do not stock the shelves and build displays with effect also lead to expiration. For example, For example, simply placing new products on the shelves without placing the products at the back to the front, makes it difficult for consumers to buy products that have been on the shelves for a long time.

3.5. Insufficient Inventory

The phenomenon of insufficient inventory in minimarts is mainly due to inaccurate predictions of future demand. The supply chain of minimarts can affect inventory management. If the inventory management policies of minimarts are unreasonable, such as delayed purchase orders or insufficient order quantity, it will lead to a shortage of inventory. For example, failure to make timely or sufficient purchases when a new trend product appears will lead to a shortage of inventory. When people find that they can't buy what they want in a minimarts, they won't come back and choose other stores instead. This will not only affect the short-term profits of minimarts, but also affect their long-term development.

4. Optimization Strategies for Inventory Management of Minimarts

4.1. Reduce Inventory Management Costs in Minimarts

Making reasonable predictions of future demand for goods, rather than just relying solely on one's own experience. This can help minimarts effectively control inventory at a reasonable level, so then reduce inventory management costs. Strengthen employee training, and improving employees' skills and professional qualities also helps. It can reduce labor and management costs.

4.2. Pay More Attention to Inventory Management

Firstly, establish an inventory management system. In fact, the management of any enterprise cannot be separated from the constraints of the system, especially in the field of inventory management. There should be a system that can be followed, from the placement of goods to the procurement of all goods, in order to be done in an orderly manner. Well organized is the core content of the inventory management system, which is managed by regulations, and executed by systems, and then inventory management is effective.

Secondly, establish a warehouse management platform. Just having an inventory management system is not enough. Warehouse chaos is something we don't want to see, and the ultimate result is that we didn't have a smooth flow of information before the chaos. If we know clearly which goods should be purchased more and which goods are defective, then inventory management will not be blind. Therefore, Establishing a scientific management platform based on inventory management software is particularly important for the development of an enterprise.

Finally, strengthen the execution of warehouse management. With the system and warehouse management software, the most important thing left is execution. Strengthening execution is crucial for warehouse management work, as people complete all things.

4.3. Avoiding Inventory Backlog in Minimarts

Establishing and improving inventory management system, clarifying inventory goals and standards, timely following up on inventory situation to prevent excess. Strengthening communication and coordination with suppliers. Purchasing and delivering reasonably based on sales forecasts. In addition, avoiding excessive stocking and procurement. Accurately predicting sales volume and reducing inventory backlog risk based on historical sales data and market demand trends, combined with the experience of sales personnel and analysis tools. Adopting flexible and diverse sales strategies, such as promotions, discounts, etc. to increase product sales and reduce inventory backlog. Timely take stock to reduce the risk of inventory backlog. For long-term unsold products, price reduction promotions or clearance measures can be adopted.

4.4. Effectively Controlling the Inventory Period of Minimarts

For products that are about to expire, sell them as soon as possible through promotions and other means to reduce inventory backlog and expiration phenomena. Regularly count inventory, promptly handle expired products, and adopt principles such as "first in, first out" (FIFO) when clearing inventory to ensure the freshness of products.

4.5. Maintain Reasonable Inventory in Minimarts

By optimizing the inventory management process and strengthening monitoring, we can grasp the inventory status in real-time, ensure sufficient inventory, and avoid situations where inventory is insufficient due to improper management. Minimarts should develop accurate sales forecast plans based on historical sales data and market trends to ensure that inventory can meet sales needs. Minimarts should strengthen communication with suppliers, understand the supply situation, and ensure timely replenishment of inventory. Minimarts can increase product sales, increase inventory turnover, and avoid inventory shortages through promotions, discounts, and other methods.

Minimarts can adopt advanced inventory management systems to achieve automated and intelligent inventory management, avoiding issues of insufficient and excess inventory.

5. Conclusion

Convenience store inventory management is of great significance for business decision-making, as it can help enterprises understand inventory turnover, grasp inventory costs, and improve fund utilization. There are many problems with inventory management in minimarts, such as high costs, lack of attention, inventory backlog, expiration, and insufficient inventory. To improve inventory management in minimarts, measures can be taken to reduce costs, prioritize inventory management, avoid inventory backlog, control inventory deadlines, and maintain reasonable inventory. In summary, the improvement of inventory management in minimarts is of great significance for the business development of enterprises, which helps to improve their management level and operational efficiency. Therefore, convenience store enterprises should actively address these issues, improve their inventory management system, and further improve operational efficiency and economic benefits. However, this study is currently limited to the theoretical stage. The next step is to select some problematic minimarts and implement corresponding measures to verify the effectiveness of the measures.

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