

RESEARCH ARTICLE

**EFFECTIVENESS OF INVENTORY MANAGEMENT AND PRODUCTIVITY OF
DAPI-MAMBURAO WOMEN PRODUCERS COOPERATIVE**

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ABSTRACT

This research delves into the assessment of inventory management effectiveness and productivity at the DAPI-Mamburao Women Producers Cooperative, situated in Sitio Dapi, Barangay Payompon, Mamburao, Occidental Mindoro. A total of 25 respondents participated in this study, employing a descriptive-correlation research design to comprehensively evaluate inventory management and productivity. The research instrument, a self-constructed questionnaire, was meticulously validated by five experts and rigorously tested for reliability using Cronbach's Alpha. Employing a 4-Point Likert scale, the study utilized statistical tools such as Mean and Kendall Tau Correlation Coefficient for data analysis. The study findings unveiled that most of the respondents demonstrated high proficiency in inventory tracking, demand forecasting, lead time management, and controlling inventory costs. Furthermore, most respondents exhibited commendable performance in areas like employee development, income generation, and resource utilization. Crucially, the research uncovered significant relationships between the effectiveness of inventory management and the extent of productivity. In light of these findings, the study recommends that the DAPI-Mamburao Women Producers Cooperative diligently monitor and manage their inventory, ensuring consistent production for organizational profitability and productivity. Additionally, it is advised that producers actively participate in training and seminars organized by the Cooperative Development Authority to enhance their inventory management effectiveness and drive productivity to new heights.

Keywords: inventory management, productivity, cooperative organizations, organizational profitability

INTRODUCTION

Inventory management has a great impact in a firm. Effective Inventory management is an important factor to the success and growth of organizations (Augustine & Agu, 2013). Inventory management is defined as the process of directing and administering the holding, moving and converting of raw materials through value adding process to deliver finished products to the customer (Relph & Milner, 2016). According to Schreiberfeder (2017) says inventory management replenishing stock in inventory with the right quantity, of the right item in the right location and at the right time. In other word inventory management minimize carrying cost of inventory and make arrangement for sale of slow-moving items and minimize inventory ordering cost.

However, ineffective inventory management is a disadvantage for the company. If inventory management is not maintained properly, the production cannot meet the customer's demand leading to loss of revenue for the firm (Oluwaseyi et al., 2017). Ineffective inventory leads to many problems such as overproduction, underproduction excessive stocks and delays in delivery of materials (Munyao et al, 2015). Inconsistencies of inventory levels can lead to losses because of over, under-stocking, expiry inventory; failure to meet demand and quota and low morale of organization. Even a too small problem in inventory can cause business failures. The importance of productivity in the workplace is a simple concept to understand. The more productive your members are, the more work they're getting done, and the more benefits you'll see. The necessity for high levels of productivity is something no business can ignore. It's inevitable that certain factors and take successful measures when they do occur, you can easily increase productivity (Zhenjing et al., 2022).

Data from the World Development Indicators database showed productivity among the Philippines employed labor force amounted to \$20,630 per worker in 2020, down five-point six percent from 2019 (World Bank, 2019). One of the main causes of decrease in employee productivity is simply the inability to focus on one task. The modern worker often tries to multitask and is not able to concentrates, losing valuable time doing several tasks. Or they simply do not train the employees properly or offer good advice, leading to employees being lost (Lui & Lui, 2022).

According to Cooperative Development Authority Republic act 9520 Article 6 and 7, the purpose of cooperatives is to generate funds and extend credit to the members for productive and provident purposes; to develop expertise and skills among its members; and provide goods services to its members to enable them to attain increased income, savings, investment, productivity, and purchasing power, and promote among themselves equitable distribution of net surplus through maximum utilization of economies of scale, cost-sharing and risk-sharing. One of those CDA sanctioned cooperatives is the Dapi - Mamburao Women Producers Cooperative.

Effective inventory management must be utilized because it is a potential driver for enhancing the productivity of cooperatives. Therefore, the purpose of this study is to assess the effectiveness of inventory management and determine the productivity of DAPI-Mamburao Women Producers Cooperative. And proponents decided to conduct this research to help cooperatives achieve success cooperative by proper inventory management and to be

productive. This study was undertaken to determine the effectiveness of inventory management and productivity of DAPI - Mamburao Women Producers Cooperative.

METHODOLOGY

The research study was conducted at Dapi-Mamburao Women Producers Cooperative located at Sitio Dapi, Barangay Payompon, Mamburao, Occidental Mindoro. The respondents of the study are 25 producers who manufacturing the finish product of Dapi Mamburao Women Producers Cooperative. The researchers employed descriptive-correlation research design. In order to collect the most reliable and accurate data from the respondents, the researchers created a self-constructed questionnaire following the process of content validation, validated by five experts and conducted a pilot test to 25 individuals for the reliability test. After this process, the researchers accomplished letters and handed-over to the concerned officials for approval and we ask permission to respondents. Then, researchers distributed the research instrument, survey and interview was conducted among the respondents. Mean and standard deviation were computed from responses in inventory tracking, forecast demand, lead time, and inventory cost. To explore potential relationships between the level of effective inventory management and the extent of productivity of the Dapi - Mamburao Women Producer Cooperative, Kendall's Tau b correlation analysis was applied. This statistical method was employed to determine the presence and strength of associations between these variables.

By employing these methods, the study aimed to gain insights into the perceived level of effective inventory management and productivity within the cooperative, as well as any potential relationships between the two.

RESULTS

The study assessed the perceived effectiveness of inventory management among participants based on several indicators. The mean scores for these indicators were as follows: inventory tracking (mean=3.87±.264), forecast of demand (mean=3.80±.387), lead time (mean=3.88±.289), and inventory cost (mean=3.80±.445). The overall effectiveness of inventory management is high (mean=3.84±.346) [Table1]. These values reflect a moderate to high level of perceived effectiveness in the various aspects of inventory management. The relatively small standard deviations suggest that responses were consistent and clustered closely around the respective means, indicating agreement among participants. These findings provide valuable insights into the cooperative's inventory management practices.

Table 1. Level of effectiveness of inventory management.

Indicators	Mean	Std. Deviation
Inventory tracking	3.87	.264
Forecast of demand	3.80	.387
Lead time	3.88	.289
Inventory cost	3.80	.445
Effectiveness of inventory management	3.84	.346

The results in Table 2 reveal the perceived level of productivity across different indicators. Employee development is highly rated (mean=3.93±0.243), indicating effective efforts in this area. Income generation is moderately rated (mean=3.36±0.141), suggesting a moderate level of productivity. Resource utilization is perceived as highly effective (mean=3.95±0.202). Overall, the extent of productivity (mean=3.75±0.189) reflects a moderate to high level of perceived productivity.

Table 2. Extent of productivity.

Indicators	Mean	Std. Deviation
Employee development	3.93	.243
Income generation	3.36	.141
Resource utilization	3.95	.202
Extent of productivity	3.75	.189

Table 3 presents the relationship between the level of effectiveness in inventory management and the extent of productivity within the Dapi - Mamburao Women Producer Cooperative. Notably, there are significant correlations between various aspects of inventory management and productivity. Inventory tracking shows a strong positive correlation with forecast of demand ($r = 0.50, p < 0.01$) and lead time ($r = 0.69, p < 0.01$), as well as a weak negative correlation with inventory cost ($r = -0.17, p < 0.05$). Additionally, lead time is positively correlated with income generation ($r = 0.51, p < 0.01$) and resource utilization ($r = 0.39, p < 0.05$). Income generation and resource utilization also exhibit a strong positive relationship ($r = 1.00, p < 0.01$). These findings suggest that more effective inventory management practices are associated with enhanced productivity within the cooperative, particularly in aspects like employee development, income generation, and resource utilization.

Table 3. Relationship between the level of effectiveness of inventory management and extent of productivity.

Variable	N	M	SD	1	2	3	4	5	6	7
Inventory tracking	25	3.87	.26	-						
Forecast of demand	25	3.80	.39	.50**	-					
Lead time	25	3.88	.29	.69**	.50**	-				
Inventory cost	25	3.81	.45	.17**	.42**	.17	-			
Employee development	25	3.93	.24	.10	.56**	.13	.23	-		
Income generation	25	3.36	.14	.45*	.37	.51**	.39*	.39*	-	
Resource utilization	25	3.95	.20	.45*	.37	.51**	.39*	.39*	1.00	-

DISCUSSIONS

Demand forecasting enables an organization to take various business decisions, such as planning the production process, purchasing raw materials, managing funds, and deciding the price of the product. An organization can forecast demand by making own estimates called guess estimate or taking the help of specialized consultants or market research agencies

[Yunishafira, 2018]. Lead time plays an important role in the success of a business. Reduced production time increases the productivity and fast production process helps in providing satisfaction to customers and to generate more and more profit [Zygiaris et al., 2022]. Successful inventory management minimize inventory, lowers cost, and improves profitability. An optimal inventory level can be based on consideration of the incremental profitability to the opportunity cost of carrying the higher inventory balances [Oluwaseyi et al., 2017].

Inventory management plays an important role in every company as any ineffective inventory system will result in the loss of customers and sales. Effective inventory management can generate more sales for the company which directly affects the performance of the company [Bin Syed et.al, 2016]. Further, providing employee development opportunities to workers provides companies with ways to retain talent, as well as ensures that there are always new people coming in with fresh ideas. Employee development brings a lot of excellent advantages and develops employees' skills and knowledge to benefit your business [Tan & Olaore, 2021]. Another, the greater the amount of capital held by the cooperative, the greater its ability to purchase more efficient technology, invest in staff training and education and make other improvements to the running of the business [Sacchetti & Tortia, 2020]. Profitability can be improved your profitability by getting the most from your existing resources. Higher firm productivity leads to higher profitability [Molinos-Senante et al., 2022].

This study was conducted within the specific context of the Dapi-Mamburao Women Producers Cooperative, which may limit the generalizability of the findings to broader cooperative settings. The sample size of 25 producers is relatively small and may not fully represent the entire cooperative. Additionally, the research employed a descriptive-correlation research design, which provides insights into associations but does not establish causation. The data collection relied on self-reported measures and responses from the participants, which may be subject to response bias. Furthermore, the study did not investigate external factors or market dynamics that could influence inventory management and productivity.

Considering the study's findings and limitations, several recommendations emerge for both the Dapi-Mamburao Women Producers Cooperative and cooperative organizations in similar contexts. Firstly, to enhance the effectiveness of inventory management and productivity, cooperatives should broaden their scope by including a more extensive and diverse sample of cooperatives in future research, ensuring a better understanding of the variations in practices and contexts. Longitudinal studies could further investigate the causal relationships between inventory management and productivity over time, contributing to a deeper understanding of these dynamics. To gain a comprehensive perspective, future research should also examine external factors, such as market demand, economic conditions, and competition, which could impact inventory management and productivity. Moreover, the implementation of specific employee development programs designed to enhance skills and knowledge may lead to increased productivity and cooperative performance. Lastly, a focus on capital allocation and resource optimization is essential, allowing cooperatives to invest in technology and staff training to improve overall productivity and profitability. By addressing these recommendations, cooperative organizations can bolster their inventory management

and productivity, ultimately leading to enhanced cooperative performance and long-term sustainability, thereby benefiting their members and the broader community.

CONCLUSIONS

This study highlights the effectiveness of inventory management and productivity at the DAPI-Mamburao Women Producers Cooperative. Most members demonstrate proficiency in inventory management, which positively correlates with productivity. These findings underscore the importance of streamlined inventory management for consistent production and profitability. The cooperative serves as an exemplar, and the recommendations emphasize the value of continuous monitoring and training. These insights offer cooperative organizations a path to operational efficiency, benefiting both members and the broader community. Effective inventory management is pivotal for cooperative success, contributing to economic and social well-being.

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