International Journal of
Business Strategies
(IJBS)

**Business
Strategy**

Success!

Marketing

Teamwork

Plan

Opportunity

Inventory Management and Financial Performance of
Private Hospitals: A Positivist Evidence from Western
Uganda.

Muhindo Crammar

Rwakihembo John

Inventory Management and Financial Performance of Private Hospitals:

A Positivist Evidence from Western Uganda.

Muhindo Cranimar

Mountains of the Moon University,
School of Business and Management Studies

Email: muhcranmer12@gmail.com

Rwakihembo John

Mountains of the Moon University,
School of Business and Management Studies

Email: jrwakihembo.jr@gmail.com

ABSTRACT

Purpose: This study set out to empirically examine the relationship between inventory management and private hospitals' financial performance in Western Uganda.

Methodology: The study adopted a positivist approach and a cross-sectional research design to collect data from 32 Private hospitals in Western Uganda. The study used a closed-ended questionnaire to collect data and simple linear regression for data analysis.

Findings: Results revealed inventory management as a significant predictor of private hospitals' financial performance in Western Uganda. The study recommended that private hospitals adopt robust and scientific inventory management systems and models that aim to optimise stock levels and minimise costs if they are to achieve substantial financial performance.

Contribution to Practice and Policy: The study has deep-rooted the urgent need for private hospitals to adopt more stringent inventory management systems that will ensure adequate stock levels, minimise costs and enhance superior financial performance. However, the study was positivistic, thus subject to methods bias that could have affected the results' validity.

Keywords: *Inventory Management, financial performance, Private Hospitals*

INTRODUCTION

Inventory management is a set of controls and guidelines that monitor inventory levels and determine the quantity of stock, when to replenish or stock up, and how much to order (Chandra, 2018). According to Kamukama *et al* (2017), financial performance refers to operating efficiently, profitability, survival, grow and react to environmental opportunities and threats. Financial performance is measured by how efficient the enterprise is in using resources in achieving its objectives (Arthur *et al.*, 2013). Machiuka (2010) asserts that financial performance analysis reflects its financial position, competitiveness in the same sector, and thorough knowledge about its cost and profit centres.

Hospitals represent a significant proportion of health expenditures in Uganda, accounting for about 26 % of total health expenditure. Improving hospitals' financial performance in Uganda can result in considerable savings devoted to expanding access to services and improving care quality (Mujasi *et al.*, 2016). However, Ssenjonyo *et al.* (2018) posited that despite the government of Uganda's resource contribution to private health facilities, there are still considerable financial performance challenges regarding liquidity, profitability, and solvency. Private hospitals' financial performance in Uganda and the entire health sector cause worry (Kakooza *et al.*, 2015). For instance, according to the credit bureau assessment of the health sector report for the period 2017-2019 by Compuscan (Credit bureau and information services provider -Uganda), private hospitals experienced the worst performance compared with the banking sector's small and medium-sized enterprises (SMEs) lending portfolio (Banyan, 2019). Private Hospitals' failure to meet their debt obligations from financial institutions is an indicator of poor financial performance.

In today's competitive world, cost control remains a vital tool in ensuring sustainability in the market. Therefore, inventory management is an important mechanism that provides cost control in an organisation in the current fast-growing market. Inventory management aims to satisfy customer needs, keep inventory costs at a minimum level, and reduce losing sales from stock-outs. An optimal inventory level should be maintained; holding too small inventory can cause delayed services while having too much stock causes additional (Gitman, 2009).

Costs associated with inventory management include carrying or holding costs, ordering costs, and shortage costs. Holding costs relate to the costs of having physical items in stock. These include insurance, obsolescence, and opportunity costs associated with having funds elsewhere but are tied up in inventory. Ordering costs are the costs of placing an order and receiving inventory. These include determining how much is needed, preparing invoices, transport costs, and the cost of inspecting goods. Shortage costs result when demand exceeds the supply of inventory on hand (Gitman, 2009). These costs include opportunity costs of making a sale, loss of customer goodwill, late charges, and similar costs. The standard measure of inventory conversion period (ICP), according to Deloof (2013), is the time taken to convert inventory held into sales and is used as a proxy for inventory management policy. Therefore, managers in organisations that deal with stock must bear in mind the objective of satisfying customer needs and keeping inventory costs at a minimum level (Lwiki *et al.*, 2013).

According to Peterson and Joyce (2017), return on assets (ROA) can be maximised by either reducing the material cost or reducing the current assets tied up in the inventory or increasing profits. They (Peterson and Joyce) maintain that inventory management can increase profitability

by deciding inventory norms and control systems. Thus, firms should maximise inventory turnover, which will maximise current assets turnover and ROA (Pandey, 2015). Besides, inventory plays a significant role in the organisation's growth and survival because ineffective and inefficient stock management will mean that the organisation loses customers and sales will decline. Thus, prudent inventory management reduces depreciation, pilferage, and wastages while ensuring the materials' availability when required (Ogbadu, 2009).

From a theoretical perspective, inventory management's role in improving financial performance is supported by the Resource-Based View (RBV) (Orobia *et al.*, 2020). As coined by Barney in 1991, the RBV argues that organisations can sustain performance by leveraging the resources they hold (Barney, 1991). The RBV suggests that a firm's resources and its capability to convert these resources to provide sustainable competitive advantage are the keys to superior performance. Inventory is the most significant component of a firm's current assets; thus, efficient stock management can enable the firm to attain a competitive advantage (Mburugu, 2020). Congruently, inventory management and control are crucial to a firm because inventory mismanagement threatens a firm's viability (Saha and Ray, 2019). Too much inventory consumes physical space, creates a financial burden, and increases the possibility of damage, spoilage, and loss. In this context, proper inventory management has been linked to improved customer service hence sustainable competitive advantage (Lwiki *et al.*, 2013).

Empirically, scholars (Orobia *et al.*, 2020; Rahimah *et al.*, 2018) underscored inventory management as a predictor of an organisation's financial performance. Notwithstanding their contribution to the body of knowledge, extant studies bear inconclusive and contradictory results besides focusing on developed countries and different sectors, ignoring the health sector. For instance, a survey by Lwiki *et al.* (2013) revealed a significant positive relationship between the time taken to convert inventories into sales and profitability among manufacturing firms in Kenya. Accordingly, Rahimah *et al.* (2018) found that the number of sales inventory days determined the profitability of Malaysian public listed companies. Additionally, the debt to equity ratio, current ratio, and firm size also significantly affected its profitability. Similarly, Capkun *et al.* (2019), in their study, revealed a positive correlation between a company's inventory management and its financial performance. They also noted that degrees of correlation vary depending on the type of inventory and the financial performance reference. Masudin *et al.* (2018) also assessed inventory management and procurement practices' impact on an Organization's Performance. They found that Inventory Management improves organisational performance. On the other hand, Mburugu (2020) examined inventory management's effect on the financial performance of commercial and service firms listed at the Nairobi Securities Exchange (NSE). He established that inventory management, liquidity, and management efficiency positively and statistically influenced the NSE listed commercial and service firms' performance.

On the contrary, a study by Raheman and Nasr (2017) revealed a negative relationship between inventory management and financial performance by using inventory turnover, inventory handling, and gross profit margin and return on investment (ROI). Bratland and Hornbrinck (2013) revealed a null relationship between the Swedish firm's working capital policy and the stock return. Regarding the relation between risk and return, results indicated that working capital (WC) had a significant correlation with risk and that the aggressive policy of managing working capital is riskier. Besides, Daniel and Assefa (2018) discovered that financial performance was less

influenced by competitive advantage than by inventory management practice. Adamudanlami et al. (2015) found that inventory management is significantly related to the profitability of conglomerate companies in Nigeria. Seungjae Shin *et al.* (2015) revealed that a lower ratio of inventory-to-sales for a firm is associated with a higher profit margin for the manufacturing firms in the United States of America (USA). Small-sized firms can receive an immense benefit (as measured by profitability) from increased inventory efficiency compared to medium and large firms. On the other hand, Bieniasz (2016) proved that inventory management's effectiveness measured with the length of inventory cycles is enormously diversified in the food industry branches and was positively correlated with profitability in Poland.

Owing to the above contradictions and scanty literature on the financial performance of private hospitals in Uganda's context, as a contribution to this field, this study set out to establish the relationship between inventory management and financial performance of private hospitals in Western Uganda. This study, therefore, hypothesised that;

H₁: There is a positive relationship between inventory management and private hospitals' financial performance in Western Uganda.

METHODS

Research Paradigm, Design, Population, Sample and Sampling Procedure

Through a positivist approach, quantitative data were collected and analysed following scientific procedures. Positivism enabled the study to maintain the researcher's neutrality and participants throughout the research process (Zuckweiler *et al.*, 2016). A cross-sectional study design was followed to detect patterns between variables at a single point in time (Bell *et al.*, 2018). A sample of 32 hospitals formed the unit of analysis, given a population of 35 private hospitals in Western Uganda (MOH, 2018). The sample size was determined using Krejcie and Morgan's table (Krejcie and Morgan, 1970). Private hospitals in Western Uganda were preferred for this study since Western Uganda is the leading region with challenges in private hospitals' financial performance in Uganda (UCMB, 2018).

The researcher first stratified private hospitals by districts and randomly selected them from each district using a simple random sampling technique to minimise the sampling bias (Lavrakas, 2020). Respondents per hospital included Hospital administrator, Accountant, storekeeper, and pharmacist. These were purposively selected based on their technical knowledge about the study's purpose and their direct involvement with working capital management (Mulajje, 2019). The study used a self-administered questionnaire for data collection. A self-administered questionnaire was chosen because it discloses the respondents' direct feedback and allows anonymity of feedback (Lewis *et al.*, 2020). All private hospitals returned questionnaires, thus achieving a response rate of 100%.

Measurement of Variables and the Questionnaire Design

Inventory management was anchored on a five (5) point Likert scale (Likert Mcleod, 2019). The scale ranges from 1 (Strongly disagree) to 5 (Strongly agree). A 5-point Likert scale enabled the study to get a holistic view of people's perceptions and their level of agreement or disagreement on particular statements about inventory management practices (Mcleod, 2019; Orobia, 2020).

Control for Common Methods Bias

Cognizant of the negative effect of common methods bias (CMB) in questionnaire-based studies in social sciences (Field, 2006), the study controlled for CMB to avoid false internal consistency. First, the respondents' anonymity was protected so that their responses were more aligned to the study's purpose. Second, respondents were expressly assured that there are no right or wrong answers as long as the responses are honest. This aimed at reducing the respondent's apprehension over their responses hence reducing the possibility of editing their answers to give what they perceive as the best answers (Orobia *et al.*, 2020).

Consequently, the study ran Herman's single factor test in SPSS V.22 to confirm the existence or absence of common methods bias (Podsakoff *et al.*, 2003). All study variables were loaded into factor analysis, and the unrotated component matrix was observed. As noted by Hartman *et al.* (2010), the rule is that no single component should account for more than 50% of the total variance. This condition was met as all study variables accounted for less than 50% hence confirming the absence of bias in responses.

Reliability and Validity

The Cronbach's alpha coefficients were computed using SPSSv22. Inventory management items met the threshold of 0.7, indicating the questionnaire's acceptable reliability (Mohsen and Dennick, 2011). Content validity was also confirmed, considering that the variable (inventory management) yielded a content validity index (CVI) above the cutoff point of 0.7 (Lawshe, 1975 and Amin, 2005). Additionally, construct validity was also confirmed given that average variance (AV) from the exploratory factor analysis (EFA) was above 0.7 and average variance extracted (AVE) was above 0.5 (Middleton, 2016) hence confirming convergent and discriminant validity, respectively.

Data Analysis

After the treatment for missing values and outliers, the study tested and confirmed parametric assumptions of normality, linearity, and homogeneity of variance, as per the recommendations of field (2006) and Tabachnick and Fidell (2001). Congruently, with one independent variable (inventory management) in the model, simple linear regression was used in testing the effect of inventory management on financial performance (Tabachnick and Fidell, 2007). Consequently, the following analytical regression model for testing inventory management's impact on financial performance was specified.

$$FP = b_0 + b_1 \text{InvM} + e$$

FP = Financial performance, b_0 constant, $b_1 \text{InvM}$, Inventory management coefficient, and e the error term.

RESULTS

The study ran a simple linear regression analysis to establish the relationship between inventory management and financial performance. Results are indicated in Table 1 below:

Table 1: Effect of Inventory Management on Financial Performance

	Standardized Beta
Inventory Management	0.53***
<i>Model Summary</i>	
R	0.53
R-Square	0.28
Sig (ANOVA)	0.001

Note: *** $P < 0.001$, Dependent Variable: Financial Performance

Results in table 1 indicate that the regression model (ANOVA) was significant at $p < .001$ level, demonstrating that results were not generated by chance thus, confirming inventory management as a strong predictor of financial performance among private hospitals in Western Uganda. Results further revealed that inventory management had a significant positive effect ($\beta = 0.53$, $p < 0.001$) on financial performance. This implies that a unit change in inventory management would increase financial performance by 0.53 units, accounting for 28% ($R^2 = 0.28$) of the variance in private hospitals' financial performance in Western Uganda. Results support the hypothesis that inventory management is positively associated with financial performance (H1).

DISCUSSION OF RESULTS

This study provides notable findings for the inventory management-financial performance matrix. It was established that inventory management is a strong predictor, accounting for 28% of the variation in private hospitals' financial performance in Western Uganda. By implication, these results mean that when private hospitals adopt robust inventory management systems, they will improve their financial performance. For instance, with solid inventory management systems, private hospitals can hold optimal stock levels, minimise costs and meet clients' demands on time. This will increase their sales and consequently substantial financial performance. Results agree with Gitman (2019), who posited that inventory management aims to satisfy customer needs and of this study keep inventory costs at a minimum level and reduce losing sales from stock-outs. An optimal inventory level should be kept; holding too small inventory can cause delayed services while holding too much stock causes additional holding costs. Likewise, Peterson and Joyce (2017) recognised that return on assets (ROA) could be maximised by either reducing the material cost or reducing the current assets tied up in the inventory, or increasing profits. They (Peterson and Joyce)

noted that inventory management could increase profitability by deciding inventory norms and control systems.

Additionally, this study's findings are consistent with previous investigations' results (Orobia *et al.*, 2020; Rahimah *et al.*, 2018; Rahimah *et al.*, 2018; Capkun *et al.*, 2019) that found a positive relationship between inventory management and financial performance. Likewise, in their study, Lwiki *et al.* (2013) revealed a significant positive relationship between the time taken to convert inventories into sales and profitability among manufacturing firms in Kenya. Furthermore, the above results support the RBV, which postulates that sustainable firm performance is contingent on a business's unique offerings and its development over time by nurturing its core competencies (Orobia *et al.*, 2020; Barney 1991). This study, therefore, notes that when private hospitals adopt efficient inventory management systems, they will attain a competitive advantage through reduced inventory costs and wastes, efficient service delivery, which, in turn, will enhance financial performance.

Conclusion

This study provides empirical evidence for a framework that identifies inventory management as a fundamental aspect of a firm's financial performance. Based on data obtained from private hospitals in Western Uganda, it can be deduced that inventory management is a significant predictor of financial performance that cannot be ignored in the health sector. The study has deep-rooted the notable role robust inventory management systems play in ensuring that hospitals maintain optimum stock levels to minimise the associated costs and improve service delivery hence attaining sustainable competitive advantage.

Study Implications

By implication, this study provides empirical evidence to support the literature regarding inventory management's relationship with financial performance. The results of this investigation will unravel and shed light on the understanding of how the efficient management of the inventory among private hospitals can immensely enhance their financial performance. It has unearthed the need for private hospitals to adopt scientific inventory management techniques and decision models to avoid stock-outs, minimise costs and improve service delivery.

Study Limitation and Recommendations for Future Research

Despite the success demonstrated, a significant limitation of this study is that based on the quantitative approach, the study could have missed out on respondents' views that could have rigorously explained the quantitative data to enhance the results' interpretation. Future studies may therefore triangulate methods to minimise the methods bias to obtain more credible results. Nonetheless, the study was still able to portray the predictive power of inventory management in explaining private hospitals' financial performance that had remained elusive all along.

References

- Adamudanlami Ahmed Et Al. (2015). Effect Of Inventory Management On Financial Performance: Evidence From Nigerian Conglomerate Companies. *Nigerian Journal Of Accounting And Finance, Volume 7, Number 1 & 2, 2015*, 96-107.
- Amin, M. E. (2005). Social science research: Conception, methodology and analysis. ISBN 9970-05-019-2: 43-384
- Arthur.S., Turyahebwa. A., Byamukama. E. and Novembrieta. S (2013). Financial Performance in the Selected Microfinance Institutions in Uganda. *International Journal of Engineering Research & Technology (IJERT)*. Vol. 2 Issue 2, February- 2013, ISSN: 2278-0181.
- Barney, J. (1991), “Firm resources and sustained competitive advantage”, *Journal of Management*, Vol. 17 No. 1, pp. 99-120
- Bayan (2019). Credit assessment report. Comparative financial performance between hospitals and SMEs. Credit bureau of Uganda 2019.
- Bell, E. *et al* (2018). *Business Research Methods*. Fifth Edition. ISBN: 9780198809876.Oxford University Press.
- Bieniasz, Z. G. (2016). Empirical Analysis Of The Influence Of Inventory Management On Financial Performance Of Food Industry In Poland. *Inzinerine Ekonomika-Engineering Economics, 2016, 27(3), 264–275, 264-275*.
- Bratland, E., & Hornbrinck, J. (2013). An emperical study of the relationship between working capital policies and stock performance in sweden. Umea University School of Business, 3-80
- Capkun, et al.(2019).The effect of inventory management on profitability: evidence from the Polish food industry: Case Study *Agricultural Economics – Czech*, 66, 2020 (5): 234–242 <https://doi.org/10.17221/370/2019-AGRICECON>
- Chandra, S. M. (2018). *Determinants Of Bond-holder Wealth Effects InCorporateRestructurings: Evidence From Spin-Offs As Compared To Mergers And Acquisitions*.Michigan: Ann Arbor.
- Daniel and Assefa (2018). *Competitive advantage, Mornitoring And Evaluation Technical Support (Mets) Programme* Makerere University School Of Public Health.
- Deloof, M. (2013). Does Working Capital Management Affect Profitability of Belgian Firms? *Journal ofBusiness Finance & Accounting*, Vol. 30 (3), pp. 573-587.
- Field, A. (2009), *Discovering Statistics Using SPSS (2nd Edition)*, Sage.
- Field, A. (2006), *Discovering Statistics Using SPSS (1st Edition)*, Sage.

- Gitman L. J., (2009). Principles of Managerial finance (12th edition). Boston, MA: Pearson Prentice Hall.
- Hartman, N., *et al* (2010), Common Method variance and marker Variables: A review and Comprehensive CFA-marker technique. *Organizational Research Methods*, 13 (3), 477-514.
- Kakooza. JB & Tusiime. I. & Odoch. H & Bagire. V, (2015). "Management Practices and Performance of Public hospitals in Uganda," *International Journal of Management Science and Business Administration*, Inovatus Services Ltd., vol. 1(7), pages 22-29, June.
- Lavrakas, P. (2020). *Sage Research Methods*. Retrieved September 19, 2020, From Sage Research Methods Website: <https://Methods.Sagepub.Com/Reference/Encyclopedia-Of-Survey-Research-Methods/N516.Xml>
- Lewsi, M. *et al.* (2020). *Sage Research*. Retrieved September 19, 2020, From Sage Research Website: [Http://Methods.Sagepub.Com/Reference/The-Sage-Encyclopedia-Of-Social-Science-Research-Methods/N902.Xml](http://Methods.Sagepub.Com/Reference/The-Sage-Encyclopedia-Of-Social-Science-Research-Methods/N902.Xml)
- Lwiki.T, Ojera. P., Mugenda. NG and Wachira. V. K (2013). The Impact of Inventory Management Practices on Financial Performance of Sugar Manufacturing Firms in Kenya. *International Journal of Business, Humanities, and Technology* Vol.3 No.5; May 2013.
- Machiuka N. (2010). A Survey of Business Growth Strategies Used By Commercial Banks Kenya. *International Journal of Business and Management*, 2(1), 25—32.
- Masudin, Ilyas and Kamara, Mohammed S. and Zulfikarijah, Fien and Dewi, Shanty K. (2018) *Impact of Inventory Management and Procurement Practices on Organization's Performance*. Singaporean Journal of Business Economics and Management Studies (SJBEM), 6 (3). pp. 32-39. ISSN 2301-3621
- Mburugu. V. (2020) Effect of Inventory Management on Financial Performance of Commercial and Service Firms Listed at the Nairobi Securities Exchange, University of Nairobi Research Archive
- McLeod, S. (2020). *Simply Psychology*. Retrieved September 06, 2020, From Simply Psychology Website: <https://www.simplypsychology.org/Likert-Scale.html>
- Middleton, (2016) A Framework Of Place Branding, Place Image, And Place Reputation: Antecedents And Moderators. *Qualitative Market Research: An International Journal*, Vol. 19, No. 2, pp. 241-264.
- Ministry Of Health (MOH). A master list of all health facilities in Uganda by end of 2018. Health Facilities Inventory Uganda 2018.

- Mujasi, P.N., Asbu, E.Z. & Puig-Junoy, J. How efficient are referral hospitals in Uganda? A data envelopment analysis and tobit regression approach. *BMC Health Serv Res* 16, 230 (2016). <https://doi.org/10.1186/s12913-016-1472-9>
- Mulajje, M. (2019). Working Capital Management And Financial Performance Of Small And Medium Enterprises In Kampala Capital City Authority: A Case Study Of Kawempe Division Urban Council. Kampala: Kyambogo University Library.
- Pandey I., (2015). Financial Management, 9th Edition, KAS publishing house New Delhi.
- Peterson R., & Joyce E., (2017). Decision Systems for Inventory Management and Production Planning. New York: John Wiley & Sons.
- Podsakoff, P.M., Mackenzie, S.B. and Lee, J.Y. (2003), Common Method Bias in Behavioral Research: A Review of Literature and Recommended Remedies, *Journal of Psychology*, 88(5), 879-903.
- Raheman, A., & Nasr, M. (2017). Working Capital Management and profitability: case of Pakistani firms. *International Review of Business Research Paper*, 3, 279-300
- Rahimah, M, *et al.* (2018). Working Capital Management And Its Effect On Profitability: Empirical Evidence From Malaysian Capital Market. *Insight Journal Vol. 1, No. 1: 2018; Published By Uitm Caw. Johor, Malaysia E-Issn*, 71-87.
- Saha. E and Ray. P.K (2019), Modelling and analysis of inventory management systems in healthcare: A review and reflections, *Computers & Industrial Engineering*, Volume 137, 106051, ISSN 0360-8352, <https://doi.org/10.1016/j.cie.2019.106051>.
- Seungjae Shin Et Al. (2015). Effect Of Inventory Management efficiency On Profitability: Current Evidence From The Us Manufacturing Industry. *Journal Of Economics And Economic Education Research Volume 16, Number 1, 2015*, 98-98.
- Ssendangire, D. (2018). *Working Capital Level, Working Capital Financing Approaches, Firm Size Nd Profitability Of Manufacturing Firms In Uganda*. Nairobi: University Of Nairobi.
- Stoner (2003). Financial Management Practices And Business Performance Of Small And Medium Enterprises In Western Uganda. (2003). *African Journal Of Business Management*; Vol. 7(38), Pp. 3875-3885, 14 October, 2003; Doi: 10.5897/Ajbm2013.6899; Issn 1993-8233 © 2003 Academic Journals; [Http://www.Academicjournals.Org/Ajbm](http://www.Academicjournals.Org/Ajbm), 3878-3889.
- Sprague, Linda G. & Wacker, John G., 1996. " Macroeconomic analyses of inventories: learning from practice," *International Journal of Production Economics*, Elsevier, vol. 45(1-3), pages 231-237, August.
- Tabachnick B. G., and Fidell. L.S. (2001), *Using Multivariate Statistics*, 4th Edition, HarperCollins.

Tabachnick and Fidell (2007).Experimental Designs Using ANOVA. Library of Congress

Control Number: 2006920045 ISBN 0534405142

Uganda Catholic Medical Bureau (UCMB). An assessment of the performance of private not for profit health facilities 2018.

Zuckweiler *et al* (2016).Perspectives in Business Informatics Research: 19th International Conference .