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# Warehouse Management Practices and Retail Supermarkets Performance: The Case of Ugandan Retail Supermarkets.

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**Abstract**

This study examined the role of warehouse management practices on the retail supermarkets' performance in Uganda. The study was guided by Dynamic Capabilities Theory and empirical literature to develop research hypotheses. The study employed a cross-sectional research design with a quantitative approach, and a structured questionnaire was used as the main instrument for data collection. The study used partial least squares structural equation modelling aided by Smart PLS to validate measures of constructs employed in the model and test the hypotheses using data from 100 key respondents from warehouse and operations units of retail supermarkets in Uganda. Findings indicate that order picking accuracy, receiving accuracy, and storage accuracy positively and significantly influence retail supermarkets' performance. This study contributes to the growth of retail supermarkets in the dynamic business environment by finding the role of warehouse management practices on retail supermarkets' performance. Moreover, these results have implications for Dynamic Capability Theory such that dynamism aspects can be reflected in order picking, receiving, and storage through integration, rebuilding and reconfiguration to match with changing business environment. Moreover, the study has implications for warehouse practitioners and policymakers as being dynamic in order picking, receiving and storage tend to shorten lead time, shorten cycle time and increase space utilization respectively.

**Keywords:** Retail supermarkets Performance; Warehouse Management Practices; Dynamic Capability Theory; Uganda

## Introduction

Organizational performance is a composite of profitability, timely service delivery, value for money, sales volume, quality service delivery, and reduced cost of service delivery (Richard et al., 2009; Mohololoholo et al., 2024; Olala et al., 2022). This usually results from a firm's ability to enhance the accuracy of warehouse activities, improve operational speed, and reduce time and inventory wastage (Jamila, 2025; Li et al., 2024; Wambua et al., 2015; Mukolwe & Wanyoike, 2015). Traditionally, warehouses were considered as cost centers, but in modern businesses are regarded as important elements and a vital link in the entire firm supply chain (Banabakova et al., 2018; Motorola, 2013). To achieve this, firms have to ensure the efficiency of all vital links within the organization, including warehouse management (ALShalawi & Bhatti, 2023; Buba et al., 2019; Lyu, 2024; Bowen, 2008; Mohamud et al., 2023). Warehouses play key roles in the supply chain, such as ensuring the right products, quantities, labels, and free damaged goods are loaded on the right vehicle and transported within the right time to meet clients' deadlines (Richard, 2014). Warehouses that are managed efficiently could lead to a reduction in the cost of production and value for money to both clients and the firm (Rahman & Kirby, 2024; Lizardo, 2009). Despite the benefits emanating from digitalization that have been widely acknowledged by different scholars, the debate exist on the practical application and its influence on Small and Medium-sized Enterprises (SMEs), specifically in the developing countries frinequalities due to access and affordability barriers, while others argue for targeted interventions and supportive policies to ensure an inclusive digital transformation.

Sustainability of the retail supermarkets depends on their supply chain performance and how efficient, accurate, and responsive the warehouse operations are (Saleheen et al., 2014). Adhering to efficient warehouse management practices that are accurate on order picking,

shipping, receiving, and storage is one way of attaining the organization's mission, goals, and, eventually, firm performance (Saha, 2018). For firms to be efficient and deliver quality services to their customers, they need to care for the warehouse practices that will stimulate these performances (Kros et al., 2006; Mahmoudinazlou et al., 2024). This situation motivated researchers to conduct this study.

Although there have been previous studies on the relationship between warehousing management practices and retail supermarkets performance, to the best of the researcher's knowledge, there is still little research that brings out specific studies in retail supermarkets. Existing studies on supermarket performance often focus on developed economies or more advanced emerging markets, where the retail environment is characterized by strong infrastructure, high consumer purchasing power, and mature supply chains while emphasize efficiency, technology adoption, customer experience, and competitive strategy (Reardon et al., 2003). However, these frameworks may not fully apply to Uganda's retail context, for several key reasons such as: the majority of Ugandan retail operates in the informal sector, with supermarkets representing a relatively small but growing portion, poor transport networks, unreliable electricity, and underdeveloped supply chains hinder supermarket performance in ways that are often not considered in conventional retail performance models (World Bank, 2020), low capacity to meet standards or scale and Uganda's local agro-processing and distribution systems are less integrated into formal retail than in countries like South Africa or even Kenya (Neven & Reardon, 2004).

Moreover, there are limited studies on warehouse management practices that use dynamic capability theory to improve retail supermarket performance. Most of recent studies that have employed dynamic capability, such as Cao et al. (2024); Dehghan et al. ( 2023); Mahmoudinazlou et al. (2024); and Zhao et al. (2024) in recognizing its role in warehouses without explicitly associating it with warehouse management practices and retail supermarkets performance. Researchers have argued that warehouse management practices are crucial components in supply chain management and a potential drivers of performance (Jooste et al., 2015). Despite such growing shreds of evidence as per the literature and also the fact that retail supermarkets in Uganda adopted a warehousing facility model of business, retail supermarkets in Uganda still report stagnated profit growth, lower per-capita income (US$675 in 2015); smaller middle class as customers (70% in subsistence farming), poor turnover, and closure. This is evidenced by the fact that in the past 10 years, a number of retail supermarkets, such as Nakumatti, closed their stores in Uganda (Semakula, 2017). Also, Kampala Capital City Authority (KCCA) closed Tuskys' five stores due to rotten chicken and beef as well as expired goods on the supermarket's shelves (The East African, 2014).

Therefore, this study reviewed existing literature to ascertain the inter-relationships that exist between warehouse management practices and the overall performance of retail supermarkets in Uganda. Thus, this study aimed to answer the following research question: What is the influence of warehouse management practices on the retail supermarkets performance? Specifically, what is the influence of accuracy in order picking, receiving, storage, and shipping on the retail supermarkets performance?

## Theoretical Background and Review of Literature

### Theoretical Review

Dynamic Capability Theory (DCT) provides the theoretical foundation for the study. The main principle of the DCT is "the firm's ability to integrate, build and reconfigure internal and external capabilities to adapt to a constantly changing environment to achieve a sustained competitive advantage". This is an extension of the Resource-Based View (Teece et al., 1997; Teece, 2007). The theory has been applied in different fields of study, such as manufacturing, wholesale, distribution and retailing, and global aerospace supply chains (Barua et al., 2004). Due to the prominence of (socially) sustainable technologies and purposefully changing business settings, research on dynamic capacities in sustainability management, notably in Sustainable Supply Chain Management (SSCM), is still relatively immature and has accelerated in recent years (Amui et al., 2017). Clifford and Fugate (2010) emphasised the shift of the dynamic capabilities' focus from firm-centric to a supply-chain perspective, which few scholars noted. Generally, research on sustainable logistics strategies incorporates all transportation, warehousing, and inventory management processes, including third-party logistics management (3PL) (Ciliberti et al., 2008). Based on the highlighted limited studies on warehouse management practices and retail supermarkets performance that use dynamic capability theory and uniqueness context of Uganda for retail supermarkets, the study

proposed to use DCT to examine the warehouse management practices on the performance of supermarket business by identifying the warehouse capabilities (such as order picking accuracy, receiving accuracy, shipping accuracy, storage accuracy) and their benefits on the firm to gain sustainable competitive advantage.

## Empirical Review and Hypotheses Development

This study's variables, hypotheses, and conceptual model were formulated based on the extensive review of the previous research, as discussed below. The study was also informed by dynamic capability theory, as discussed above.

*The influence of order picking accuracy.* Order picking relates directly to consumer satisfaction, and any mistakes made at this point while delivering the order, be it sending forward a wrong order or a damaged item, will have a bad impact on firm value (Parikh & Meller, 2008). Habazin et al. (2017), in their study on the warehousing processes in the Croatian dairy industry, found that order picking accounted for the highest amount of costs within the warehouse activities and took the most operating time. However, the study also finds that minimization of movements, lifting, and other related picking practice tasks by adopting optimization processes will reduce picking order costs by a bigger magnitude, hence improving the firms' profitability and efficiency in meeting clients' orders. In another study, zhang (2016) zeros on distance reduction as a significant factor that would improve order picking accuracy and improve client satisfaction. The study asserts that most clients hate waiting for their goods at picking centers, and a reduction of travel distance by adopting a correlated storage assignment strategy (CSAS) would reduce an average travel distance by 2.08%, improving both clients' satisfaction and operational costs. Furthermore, van den Berg (1999), in the study on competitive warehouse performance, asserts that aligning internal item handling reduces the 55% costs related to order picking and storage activities. It creates a competitive advantage for the firm, and such firms have a 30% cost advantage over their competitors, making them financially successful. Relatedly, Petersen & and Aase (2004) highlight the importance of batching dimension in order picking accuracy by developing a simulation model that uses fixed order sizes. The results revealed that batching up orders saves time, reduces costs, and improves the efficiency of the operating firm. Based on this review, the following hypothesis was developed:

***H1****: Order-picking accuracy has a positive influence on retail supermarkets performance.*

*The influence of receiving accuracy*. Receiving is the last step that separates the purchasing function from the storage function. It requires lots of attention and curiosity since it involves counting stock in terms of number and quality from both functions (Odhiambo & Jaoko, 2016). According to Habazin (2017), receiving being the first practice with the warehouse management processes involves tasks like arrival notice, receiving preparation, inbound scheduling, unloading coordination, and accurate documentation, which require a lot of attention, and each has a direct implication on efficiency, timeliness and cost performance of the warehouse (Buzu, 2021). If there is poor handling of merchandise at the receiving point of the warehouse, the firm risks storing and shipping damaged or inaccurate goods to its clients, which will pose a bigger financial, image, and recovery cost to the firm (Frazelle, 2002).

In a study by Buzu (2021) on the different warehouse management practices, it is asserted that when firms lack speciality and modern equipment to handle various tasks with receiving accuracy, such as inspection tools and handling tools, this inadequacy makes the receiving costly, time-consuming and ends up affecting organizational performance. In addition, Axelsson and Frankel (2014) concur that the receiving function signifies about 10% of the overall cost in a warehouse; however, with the adoption of a warehouse management system to handle the receiving accuracy tasks right from documentation up to forwarding to storage, will help to reduce receiving cost percentage and improve the functioning of other high-end activities within the warehouse.

Furthermore, in the study by Hailu (2019) on the warehousing management practice effect on organizational performance, using a survey of 60 employees of a public limited logistics company in Ethiopia, the study results revealed a significant positive relationship between receiving accuracy and organizational performance. The same study revealed that this relationship is moderate with performance because the receiving accuracy is far from the firm's clients, and its relationship to consumer satisfaction goes through a chain of other functions (Hailu, 2019). Similarly, in the study by Buzu (2021) on the effect of warehouse

management on performance using a sample of 101 employees of Modjo Dry Port, the study results analyzed a significant positive relationship between efficient receiving function and the performance of a warehouse. It details how items are received, signifies how they are handled and how they are referred to the next customer, hence, overall client satisfaction (Kusrini et al., 2018). Based on these reviews, the following hypothesis was developed:

***H2****: Receiving accuracy has a positive influence on retail supermarkets performance.*

*The influence of storage accuracy*. According to Yang (2012), storage is about material movement from a receiving area to a designated storage space for keeping. How efficiently companies store inventory has an impact on the performance of the organization. Scholars have depicted that storage is a core function in warehouse management, and its impact has far-reaching effects on the overall organizational performance (Mentzer & Konrad, 1991). For instance, Hailu (2019) found an impact of efficient storage function on organizational performance. Using data from 60 employees of a logistic firm in Ethiopia, study results revealed a moderately significant relationship between efficient storage function and organizational performance.

Relatedly, Musau (2018) assessed the relationship between warehouse management practices and the performance of textile firms in Nairobi. The study affirms customer satisfaction as a reflection of performance found in clients who stored their goods in the firm's warehouse. Firms' employees in this study argued that if customers are satisfied with the firm's storage practices, such clients will likely bring repeat business to the firm, which translates into profitability. Therefore, the established significant relationship is established between storage accuracy and performance. In addition, van Den Berg (2012) asserts that a firm's storage operations often influence the company's corporate performance using dimensions of cost and client satisfaction. It is asserted that if the firm keeps proper control of its storage facilities regarding stock handling and efficient delivery, this will boost the entire of firm's supply chain performance and improve firm value (van Den Berg, 2012). Similarly, Buzu (2021) relates that the dimension of storage accuracy correlates with the performance of the warehouse and overall organizational performance. Inventory accuracy is critical to managers in knowing how much stock is left in the storage and when to place a new order so that they do not fall short of the client's expectations. In this same study, correlation results between storage activity and organizational performance were found to be positive and significant.

***H3****: Storage Accuracy has a positive influence on retail supermarkets performance.*

*The influence of shipping accuracy*. Oftentimes, warehouses offer service quality that creates customer value using the shipping function (Frazelle, 2002). Shipping accuracy involves scheduling and assigning trucks to docks for the orders, packing after picking, and loading of trucks (Gu et al., 2007). It is the final activity within warehouse management that requires a lot of due diligence since it involves an interaction between the warehouse staff and the company's clients, and it directly links to client satisfaction (Rimiene, 2008). According to Nistor (2014), value is created through tasks like packaging, delivery, speed of activities, mode of delivery, and communication with the clients. The bonding between the firm and its clients depends on the observance of agreed-upon delivery details. The shipping activity ensures that what was agreed upon between the customer and the firm is what is being delivered (Kenyon & Meixell, 2011). This establishes trust and increases the relationship between the firm and its clients. In addition, Laird (2012) agrees that shipping is a major function within the supply chain since it physically links the firm to its clients, an interaction that is crucial for a firm's growth.

Furthermore, in his study, Hailu (2019) found a positive relationship between shipping done in the warehouse and organizational performance. The study agrees that this relationship yields more satisfaction in a scenario involving cross-decking goods in cases where clients had experienced initial delays due to logistical challenges (van Den Berg, 2012). Another study by Buzu (2021) found a positive significant relationship between shipping activity and organizational performance.

The challenge with shipping activity, however, is when this activity experiences initial delays within the predecessor activities. This affects the operation's actual shipping and compromises service delivery to clients. Secondly, as commerce grows, there is an increase in reversed goods to the warehouse, which is` estimated to be at around 30%, especially in the form of defects or wrong deliveries (Kripashankar et al., 2013). But how warehouses

handle these returned goods has an impact on overall performance in terms of client satisfaction and cost handling (Bartholdi & Hackman, 2008).

***H4**: Shipping Accuracy has a positive influence on retail supermarkets performance.*

Taking into consideration on all hypotheses developed based on the empirical and theoretical literature review, the following conceptual framework (Figure 1) was proposed for this study. In the conceptual framework shown in Figure 1, warehouse management practices are independent variables with an influence on retail supermarkets performance which is a dependent variable.

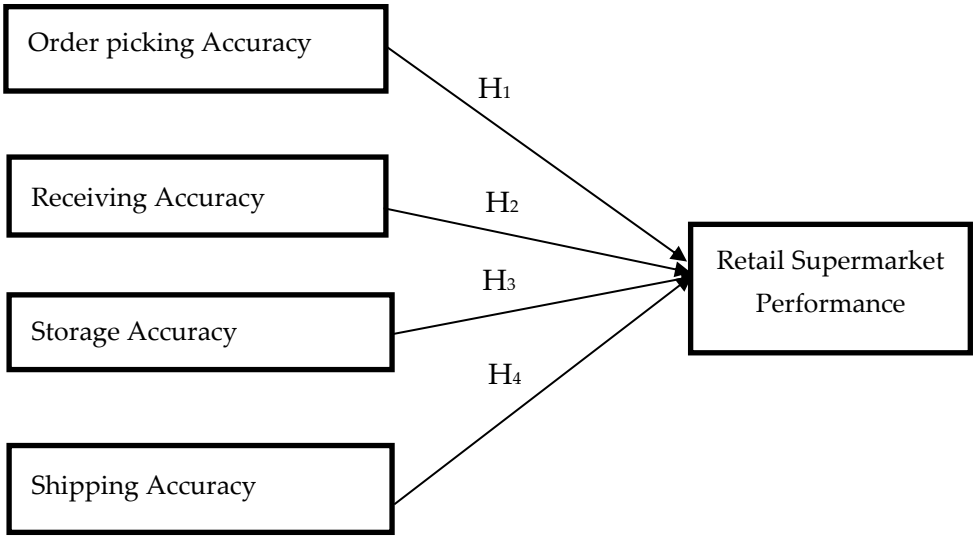


**Figure 1**: Conceptual Model of the Study

## Methodology

This study employed cross-sectional research since data were collected directly from the population under study at one point in time, and an explanatory research design was used to explain the pattern of the link between warehouse management practices and the performance of supermarket businesses in Uganda (Saunders et al., 2023; Creswell, 2009). All warehouse operation managers of retail supermarkets registered with the Uganda Revenue Authority were considered as the study population. Given the relatively small size of the target population of 100 warehouses, the entire population was included in the study, i.e., a census survey was conducted instead of sampling. This approach is based on the recommendation that when the target population is 100 or fewer, a census survey is a more suitable and effective method for achieving an appropriate level of precision (Hailu, 2019)). The primary data were collected by administering questionnaires. The unit of inquiry was the operations managers or warehouse managers working in those selected retail supermarkets. The research model consisted of five latent variables. Storage accuracy consisted of five items that were adapted from Buzu (2021); order-picking accuracy consisted of five items that were adapted from Muter and Oncan (2022); receiving accuracy consisted of five items that were adapted from Kusrini et al. (2018) and Buzu (2021); shipping accuracy consisted five items that were adapted from Kusrini et al. (2018) and Buzu (2021); and retail supermarkets performance consisted five items that were adapted from Eckert (2007), Cheng et al. (2016). Constructs and their corresponding indicators are clearly presented in Table 1.

**Table 1: Constructs and Indicators**

| Constructs | Indicators | Source(s) |
|---|---|---|
| Retail Supermarkets Performance | Retperf1: The supermarket has increased its clientele chain over the years<br>Retperf2: The supermarket has registered increased revenue over the years | Eckert (2007), Cheng *et al.* (2016) |

| | | |
|---|---|---|
| | Retperf3: The supermarket has been able to open different branches in other areas over the last five years.<br>Retperf4: The supermarket has reduced warehouse operating costs even when items in the store have increased<br>Retperf5: The supermarket has increased the number of perfect orders received from suppliers to the warehouse over the years | |
| Receiving Accuracy | Recaccu1: This supermarket has a Standard Operating Procedure (SOP) for receiving goods.<br>Recaccu2:Most of the time, our warehouse workers perform appropriate inspections of goods at the receiving stage<br>Recaccu3: Most of the time, our warehouse workers confirm that all the goods that arrived are perfectly matched with what was originally ordered<br>Recaccu4: Warehouse personnel inspect received materials at a reasonable time<br>Recaccu5: Most of the time, our warehouse has enough space to receive goods that arrived. | Kusrini *et al.* (2018) and Buzu (2021) |
| Storage Accuracy | Stoaccu1: Most of the time, our warehouse team appropriately uses available storage areas for storing goods.<br>Stoaccu2: Most of the time, our warehouse team effectively minimizes total goods damage stored in the warehouse.<br>Stoaccu3:There is enough space between goods storage and the walking way in our warehouse.<br>Stoaccu4: Most of the time, incoming goods are stored in their identified storage locations.<br>Stoaccu5: Warehouse personnel utilize reasonable warehouse spaces for goods handling. | Buzu (2021); |
| Ordering Picking Accuracy | Ordaccu1: Our warehouse personnel are skilful in performing order-picking process.<br>Ordaccu2: Most of the time, our warehouse workers are performing order-picking process error-free.<br>Ordaccu3: Our warehouse design/layout is convenient for an easy order-picking process.<br>Ordaccu4: Our inventory management system facilitates the order-picking process.<br>Ordaccu5:The supermarket has adequate shelves for the goods in the warehouse to facilitate the order-picking process. | Muter and Oncan (2022) |
| Shipping Accuracy | Shpaccu1: The warehouse team has enough awareness about how the movement of goods has an impact on the satisfaction of customers.<br>Shpaccu2: Our personnel serves customers at a reasonable time (i.e., from when an order is received at the storage facility until the order is shipped to the client).<br>Shpaccu3: Most of the time, goods are delivered to the company customers as per the order specification<br>Shpaccu4: Our warehouse personnel usually perform perfect order delivery lead time to the company customers.<br>Shpaccu5: The supermarket has installed a tracking system for its goods in transit | Kusrini *et al.* (2018) and Buzu (2021) |

## Findings and Discussion

### Sample Characteristics of Respondents

The results show that 60 per cent of respondents were male and 40 per cent were female. The observed disparity could probably point to more males operating and managing the warehouses than females. Moreover, the age distribution of respondents featured the 18 – 35 year and the 36 to 45-year age groups as the most dominant, comprising 48.0 per cent and 47.0 per cent respectively, while those above 45 years were the least represented, accounting for merely 5.0 per cent. This shows that a higher number of respondents are youthful, which tallies with the demographic nature of the workforce in Uganda. The majority of the respondents, that is 65 per cent, were found to have a first-degree level, followed by 30 per cent who had a secondary and diploma education level, and the remaining 5 per cent had a master's degree. This education profile indicates that most of the employees in the warehouses were highly educated and could comprehend the subject on which data was being collected from them, hence guaranteeing relevant responses. Since 65 per cent had a degree level and 5 per cent had a master's, this means that responses were well-guided. 54.0 per cent of respondents had been working with the warehouse for 2 to 5 years, 36.0 per cent had an experience of 6 – 10 years, and the least percentage had over 10 years of working experience. This implies that most of the respondents had worked with the warehouses for a period long enough to have experience on the subject that the study was investigating, and hence, assuring the reliability of the responses.

### Assessment of Measurement Model

For indicator reliability, as in Figure 2, results indicate that all indicators retained had factor loadings above 0.5 which is acceptable. The assessment of internal consistency reliability, as in Table 2, indicates all variables have satisfactory values of the composite reliability test (greater than 0.7), the values, as in Table 2, range from 0.717 to 0.936. Convergent validity was assessed by considering the factor loadings of the indicators and the average variance extracted (AVE). As seen in Table 2, the AVE values for all the constructs are above 0.5, confirming the measurement model's convergent validity.

Discriminant was assessed by using the Fornell-Larcker criterion as shown in Table 2. As seen in Table 2 the square root of the AVE on each construct (first value in the column) is greater than the correlation coefficients of that particular construct and all other constructs an evidence of conceptual distinctiveness among the variables in the study.

**Table 2: Composite Reliability, AVE and Fornell-Larcker Criterion**

| Variable | Composite Reliability | AVE | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Order Accuracy | 0.900 | 0.645 | **0.803** | | | | |
| 2. retail supermarkets performance | 0.887 | 0.612 | 0.534 | **0.782** | | | |
| 3. Receiving Accuracy | 0.859 | 0.554 | 0.380 | 0.545 | **0.744** | | |
| 4. Shipping Accuracy | 0.799 | 0.507 | 0.373 | 0.449 | **0.720** | **0.712** | |
| 5. Storage Accuracy | 0.936 | 0.747 | 0.159 | 0.305 | **0.313** | **0.271** | 0.864 |

**Note:** Bold numbers on the diagonal show the square root of the AVEs; Numbers below the diagonal represent construct correlations

## Structural Model Assessments

As summarised in Table 3, the results revealed no collinearity since, for all independent variables, the variance inflation factor (VIF) values were below 5 (Hair et al., 2019). The coefficient of determination (R2) is 0.438, implying that the variation of all independent variables combined leads to a variation in the performance of the retail supermarket in Uganda by up to 43.8%. For this study on assessing the structural model, predictive relevance (Q2) results were also assessed. The Q2 for retail supermarkets' performance was above zero (Q2=0.235), providing a clear indication of the existence of path model predictive relevance for each given endogenous latent variable.

**Table 3: Estimation Results of the Structural Model for Retail Supermarkets Performance**

| Relationships | $\beta$ Coefficient | Std. ($\beta$) | t-Value | 95%CI | $f^2$ | VIF |
|---|---|---|---|---|---|---|
| Order Picking Accuracy->Retail Supermarkets Performance | 0.372 | 0.072 | 5.142* | 0.239;0.522 | 0.205 | 1.199 |
| Receiving Accuracy->Retail Supermarkets Performance | 0.342 | 0.165 | 2.071** | 0.024;0.669 | 0.095 | 2.199 |
| Shipping Accuracy->Retail Supermarkets Performance | 0.028 | 0.143 | 0.198 ns | -0.288;0.271 | 0.001 | 2.133 |
| Storage Accuracy->Retail Supermarkets Performance | 0.131 | 0.066 | 1.975** | 0.001;0.251 | 0.027 | 1.115 |

Note: *p<0.01, **p<0.05, ***p<0.1, ns= not significant

Coefficient of Determination (R2) = 0.438 Predictive Relevance (Q2) =0.235

Effective size (f2) measures the effect of the specific predictor on an endogenous construct (0.02 small, 0.15 medium, 0.35 large (Cohen, 1988; Hair, Risher, et al., 2019).

The findings of this study, as indicated in Table 3, show a significant positive relationship between order picking accuracy and the retail supermarkets performance of retail supermarket business (β=0.372, t value = 5.142) with effective size ($f^2$) value = 0.205, revealing that the magnitude of the relationship being medium. There is a significant positive relationship between receiving accuracy and the performance of retail supermarket business (β=0.342, t value = 2.071) though the effective size ($f^2$) value = 0.095 which is far above the small effective size threshold. A significant positive relationship between storage accuracy and the performance of retail supermarket business (β=0.131, t value = 1.975) with the effective size ($f^2$) value = 0.027 which is far above the small effective size threshold. Furthermore, this study indicated an insignificant positive relationship between shipping accuracy and the performance of retail supermarket businesses (β=0.028, t value = 0.198). These results are further confirmed by the effective size ($f^2$) value = 0.001, indicating that the magnitude of the relationship between shipping accuracy and Retail Supermarkets performance is not relevant.

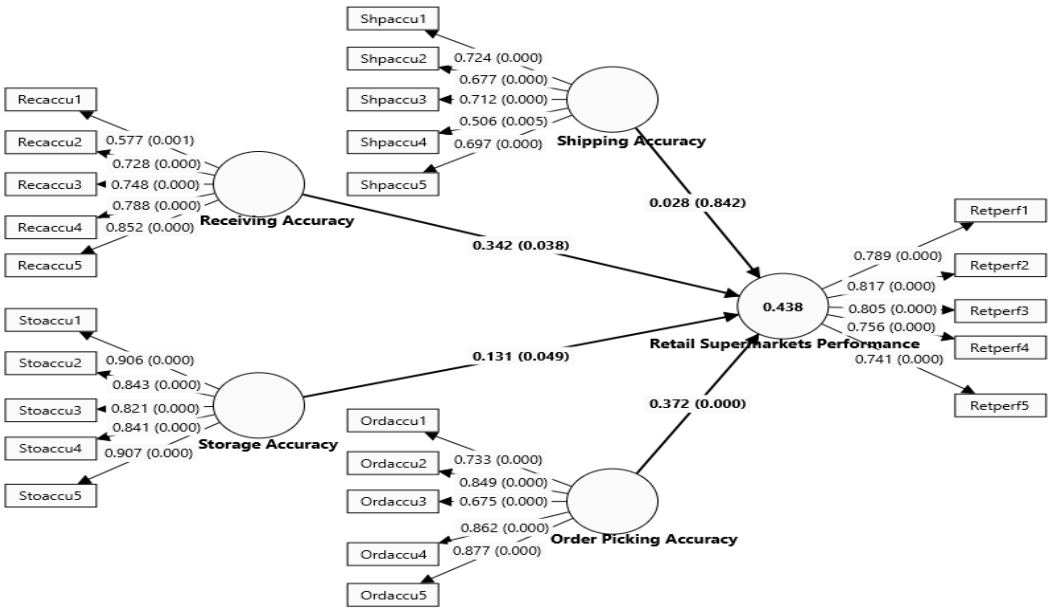


**Figure 2**: The Study Structural Model

## Importance Performance Map Analysis (IPMA)

To identify the issues that need to be improved in order to increase retail supermarkets' performance, an importance-performance map analysis (IPMA) was conducted with retail supermarkets performance as an endogenous target variable. As an extension to the path coefficient results, the importance-performance map analysis considers the performance of the latent variable score and also identifies the exogenous variables that have an importance or total effect by explaining the endogenous target construct variance (Ringle & Sarstedt, 2016). Before computation for the performance values first all the prior assumptions were checked. First all indicators were inspected to check if they move in the same directions and it shows that all work in the same directions. Also all the outer weights were positive hence satisfied the requirements for computation of the performance values.

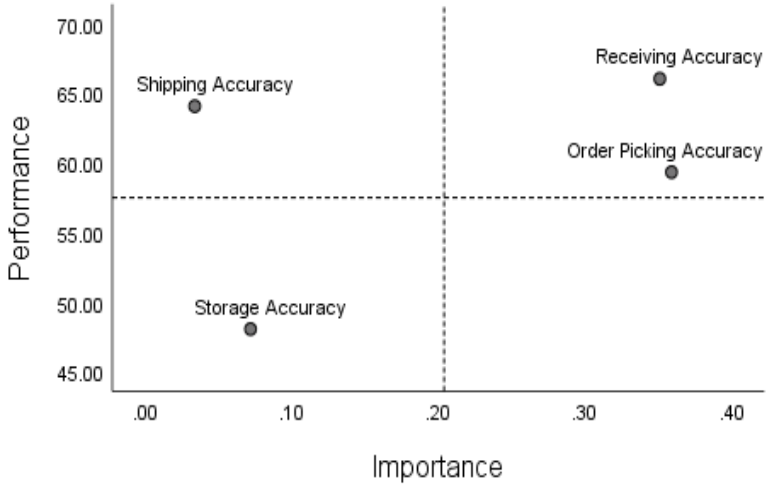


**Figure 3:** IPMA at Construct level on Retail Supermarkets Performance as a Target Construct

Results, as shown in Figure 3, indicate that receiving and picking accuracy constructs are very important and appear to perform well, while the shipping accuracy and storage accuracy constructs seem to be of less importance. Furthermore, considering the indicator level, results shown in Figure 4 indicate that the majority of receiving and picking accuracy items are very important and seem to perform well, whereas most of the shipping accuracy indicators appear to be of lesser importance. Based on these results, managers are encouraged to focus more on receiving and order picking activities, as they are crucial for enhancing organisational performance.

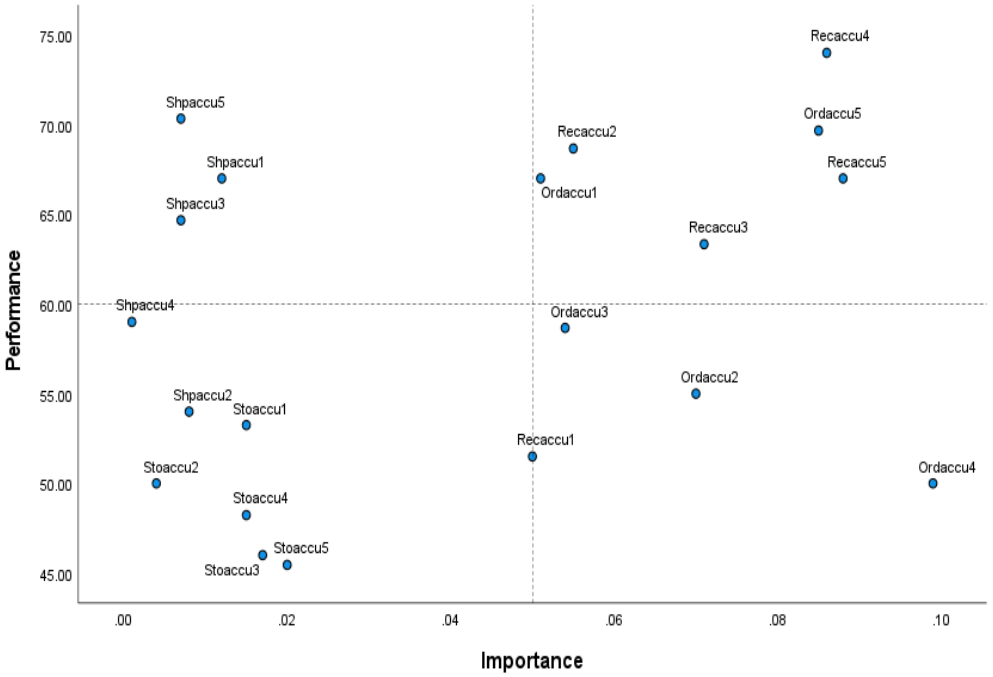


**Figure 4:** IPMA at indicators level on Retail Supermarkets Performance as a Target Construct

## Discussion of the findings

This study developed a model representing the relationship between warehouse management practices and retail supermarkets performance from four independent variables and one dependent variable. The discussion of findings is based on the objectives of the study, namely to determine the influence of warehouse management practices (receiving accuracy, storage accuracy, order picking accuracy, and shipping accuracy) on the retail supermarkets performance in Uganda.

The findings of this study have supported hypothesis H1 by statistically validating that *"there is a significant positive influence of order picking accuracy to the retail supermarkets performance".* This means that the higher the level of order-picking accuracy in a supermarket warehouse, the higher the level of its performance. The significance of hypothesis H1 empirically confirms that owners and managers of retail supermarkets should focus on the part of their resources and efficient handling of order picking to be able to increase retail supermarket performance. The findings are consistent with the study findings by Axelsson & Frankel (2014), Muter & Oncan (2022), Grosse et al. (2015), and Chen et al. (2010). This finding is consistent with the dynamic capability theory, whereby the warehouse functions as an internal firm resource, and order-picking accuracy is a capability the company uses to satisfy its customers' dynamic demands to gain a sustainable competitive advantage (Teece et al., 1997; Teece &Pisano, 1994; Teece, 2007).

The findings from this study have supported hypothesis H2 by statistically establishing that *"there is a significant positive influence of receiving accuracy to the performance of retail supermarket business".* This means that the higher the level of receiving accuracy in a supermarket warehouse, the higher the level of performance. The significance of hypothesis H2 empirically confirms that owners and managers of supermarkets should use part of their resources to efficiently receive goods at the warehouse to increase performance. These study findings are consistent with dynamic capability theory and previous empirical studies (Teece, 2007; Hailu, 2019).

The findings of this study have supported hypothesis H3 by statistically establishing that, *"there is significant positive influence of storage accuracy to the performance of retail supermarket business".* This means that the higher the level of storage accuracy in a given warehouse of supermarket, the higher the level of performance. The results from this study are similar to study findings of Hailu (2019), and Buzu (2021). The significance of hypothesis H3 empirically confirms that owners and managers of supermarkets should spend part of their resources on efficient handling of storage of goods at the warehouse to be able to increase performance. The study supports dynamic capability theory, which is an extension of the resource-based view. It demonstrates that a warehouse, considered an internal resource, along with storage accuracy, recognized as a capability, enables firms to adapt to changing customer demands in pursuit of sustainable competitive advantage.

The findings of this study have not supported hypothesis H4 by statistically disapproving that, *"there is significant positive influence of shipping accuracy to the performance of retail supermarket business".* The results suggest that an improvement in the shipping accuracy of retail supermarkets in Uganda may not necessarily translate into enhanced performance. The results from this study are contrary to the study findings of Hailu (2019), and Buzu (2021) who concur that there is a positive significant relationship between shipping activity and organizational performance. Theoretically, Dynamic Capabilities Theory does not positively impact shipping accuracy in relation to supermarket performance in Uganda since the results analyzed an insignificant relationship. This unexpected result may be due to several factors, but possibly could be attributed with external disruptions such as supply chain delays or local logistical issues that could have weakened the link between accurate shipments and retail supermarkets performance outcomes. These findings suggest that while shipping accuracy is operationally important, its impact on performance may be indirect or context-dependent, warranting further research.

## Conclusion, Implications and Areas for Future Studies

This study makes several theoretical implications. In effort to add knowledge to the existing body of literature, this study has focused on the role of warehouse management practices on the retail supermarkets performance in Uganda. Even if many studies have investigated about warehouse management practices on organizational performance in other areas like

construction firms and other firms, less attention has been given to warehouse management practices in Ugandan supermarkets.

Furthermore, the study sets a theoretical and empirical background for future research on this topic in the retail supermarket business. Dynamic Capabilities Theory has been applied in different fields of study. Notably in areas of manufacturing, specifically in wholesale and distribution, information technology, and global aerospace supply chains. This study has contributed significantly to the developing economies' context by showing that such theory can also be applied in warehouse management practices on retail supermarkets performance. Therefore, by expanding the usage of Dynamic Capability Theory in another domain, the present study broadens its use and application to the understanding of theory creation. This theory provides a better explanation of how a warehouse is not only a resource to the organization but also one of its capabilities that improve a firm's performance, hence achieving sustainable competitive advantage.

The study findings are important to owners of retail supermarkets and government regulators of warehouses to set standard operating procedures (SOPs) and enforce compliance policies in order to reduce damaged goods and spoilage. This will in turn, improve on profitability of firms, hence improved organizational performance.

Considering technology as an emerging strategic tool in the contemporary business world, other studies should investigate more on the influence of automation and information technology in warehouse management on organizational performance. And secondly, given that this study only used quantitative approach, other studies can employ qualitative approach in order to achieve a deeper understanding on role of warehouse management practices on retail supermarkets performance and as well consider more studies in small, medium and large enterprises to assess if better results can be obtained. Findings from small, medium, and large businesses could differ due to differences in organizational structures, technology capabilities, strategic priorities, operational complexity, and resources between these businesses.

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