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Research Paper

Influence of Warehouse Management Practices on Service Delivery in Zimbabwean Local Authorities

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Abstract

This study assessed the influence of warehouse management practices on service delivery by Zimbabwean local authorities. The study was underpinned by three theories: the theory of inventory and production, the application control theory, and the adaptive structuration theory of warehouse management practice problems. The study was informed by the post-positivism philosophy. The study employed a cross-sectional descriptive survey, and data were gathered from respondents using structured questionnaires. The reliability of the data was evaluated using Cronbach's alpha (α). Five hypotheses that passed the validity and normalcy tests were examined using structural equation modeling. For data analysis, SPSS® version 21 and AMOS® version 21 were utilized. The statistical analysis and results demonstrated a correlation between the independent variables (enterprise resource planning, order processing, inventory lead time, and materials handling on service delivery). The analysis revealed that the development and implementation of service delivery in local authorities have been hindered by issues with declining warehouse management practices. The study revealed that local authorities are struggling with service delivery due to fluctuating inventories, inaccurate forecasts, poor customer responsiveness, and inadequate technological systems, resulting in subpar services to taxpayers. The study concluded that warehouse management practices have a strong influence on service delivery for local authorities. The study recommended the adoption of some strategic stance toward warehouse management practices. It was also considered that local authorities should deliberately adopt electronic warehouse management practices to enhance service delivery.

Keywords: *Warehouse, Warehouse Management, Warehouse Management Practices, Service Delivery*

INTRODUCTION

Warehouse management practices have been identified as one of the biggest enablers and influencers of the business world today (Nwaiku & Ejechi, 2022). Despite the belief that information technology only benefits big organizations with financial muscle, studies reveal that it can also be beneficial to smaller businesses. For instance, implementing warehouse management practices could help boost a company's customer satisfaction and profitability. Kumar (2020) stated that the importance of warehouse management practices is acknowledged by organizations as a key component of their strategy to improve their competitive advantage and increase their service delivery. Owing to the rapid emergence and evolution of new business models, organizations need to develop effective and efficient warehouse management capabilities (Secretario & Naval, 2021).

This study focuses on how warehouse management practices affect service delivery by local authorities. The practice of systematically organizing and storing products on a large scale for easy access when needed is known as warehousing. According to Lwiki et al. (2013), warehousing is the practice of keeping or conserving large numbers of things from the moment of their manufacture or purchase until their actual use or sale. Warehouse management practices are crucial in establishing the ultimate demand for a product because of the increase in competition, the rise of consumer expectations, and the similarity of fundamental items that are supplied (Juma & Kilani, 2022). As it becomes more difficult for firms in the fast-moving consumer goods (FMCG) sector, particularly in the beverage industry, to compete on a pure product basis, innovative firms are

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seeking a competitive advantage elsewhere (Pfohl, 2022). Kumar (2020) asserted that an effective warehouse management practices system can give a company a significant competitive advantage. Market globalization has received a great deal of attention and has been thoroughly debated at many levels to improve the current corporate climate while offering a level playing field for marketing and commercial activity (Ayivi et al., 2022).

Warehouse management practices concentrate on the methods employed by organizations to ensure that stocks or raw materials and semi-finished goods are kept in a manner that gives the maximum possible quality of services cost-effectively (Handa et al., 2021). Hence, the art of inventory management is an important aspect of the effectiveness of the quality of the service to be delivered by an organization. Kotler (2013) proposed that inventory management encompasses all operations involved in generating and managing inventory levels under all conditions so that appropriate supplies are accessible at a reasonable cost. Inventories are critical for keeping the manufacturing wheels turning, the market operating, and the distribution system functioning. They act as lubricants and springs for the manufacturing and distribution systems of corporations (Handa et al., 2021).

From a global perspective, inventory management practices are vital because organizations ensure stock and assets are adequately managed and specific demand forecasting remains in place to avoid unanticipated procurement processes (Secretario & Naval, 2021). This will help the organization execute efficient procurement processes that identify supply and demand forces. Dobler et al. (2014) emphasized that well-managed inventory is crucial for a firm's efficiency and productivity because it ensures proper operations in sales, marketing, financial administration, and production. Technological advances have expanded the organization's ability to manufacture goods in better, faster, and adequate ways (Jhaveri & Gupta, 2021).

In the United States, organizations like Argos have started implementing warehouse management practices to improve their logistic operations South Africa, companies such as Transnova Africa, Dangote Cement, and Value Logistic have started adopting warehouse management practices to enhance their operational efficiency. The four top nations with warehouse management practices were from Europe, the fifth from Asia, and the worst five from Africa. The top five warehouse management practices in 2010 were Germany, Singapore, Sweden, and the Netherlands. The bottom six countries were Somalia, Eritrea, Sierra Leone, Namibia, Rwanda, and Zimbabwe (Maleshkova et al., 2020).

Effective warehouse management practices are essential to support local authorities in strategic planning and meeting their needs. In an international trade study, postulates that the majority of participants ranked the quality of warehouse management practices in Africa as poor to average (Parfenov et al., 2021). A survey undertaken by the Shippers Council of Eastern Africa (SCEA) highlighted the severe inefficiencies and cost structure of Kenya's warehouse management practices. They comprised logistics cost and efficiency measures, delivery time indicators, truck turn-around time, complexity indicators that indicated the level of complexity in conducting trade transactions, and customer perception measures (Wandie & Muathe, 2022). Kumar (2020) posits that the scope of inventory management practice includes managing the restocking lead time, replenishing goods, returns, and faulty items, demand forecasting, inventory carrying costs, asset management, actual stock, available actual space, demand forecasting, inventory valuation, inventory visibility, future inventory price forecasting, and quality management. With a balance of these criteria, it is feasible to achieve an appropriate inventory level, which is an ongoing process as business demands alter and react to the larger environment (Parfenov et al., 2021).

Issues of warehouse management practices in Zimbabwe have also been articulated by Sydow et al. (2020), who posited that the degree of macro-environmental uncertainty in Zimbabwe

is the major drawback for service delivery by government entities. In addition, Sydow et al. (2020) attributed poor warehouse management practices to a shortfall of inventory management technology based on the reality that technology advancement has long lagged. Sydow et al. (2020) in this regard therefore argued that it is the major reason for limited opportunities for government entities to engage in MRP systems. In a supportive dimension, it is also postulated by Sydow et al. (2020) that mostly government-owned and -controlled entities are greatly affected by the dynamics of the macroenvironment, especially when considering bureaucratic operational systems that are not easily adaptable to the changes. Maware and Adetunji (2019) in this case further argue that private entities' inventory management systems in Zimbabwe are better performing than those of government entities. The argument by Maware and Adetunji (2019) in this respect is that private entities are cost and profit-oriented; therefore, they swiftly review their inventory management systems according to environmental changes such that they maintain low costs while being efficient on stock holding.

Several studies have already been added to the body of knowledge of public sector inventory management practices. For example, a study by Mambanda et al. (2017) focused on the issue of total quality management (TQM) in inventory management by public entities. They indicated that inventory management practices have a significant relationship with service delivery. In addition, a study was conducted by Yusof et al. (2021) on auditing and performance of inventory administration, particularly in state entities. Furthermore, Mangwiro (2018) focused on the impact of inventory management policies on the corporate performance of urban councils. Kusrini et al., (2018) conducted a study on determining the KPIs (Key performance indicators) for warehouse measurement using a case study in the construction industry. Tiwari (2023) conducted a study on factors affecting warehousing operations in the supply chains of small manufacturing firms. All these studies are a clear indication that there is still a deficiency of literature on the effects of warehouse management practices on service delivery in local authorities. Therefore, the rationale for focusing the study on local authorities is to close the gap that was still open in the body of knowledge.

The shoddy and cost-ineffective warehouse management practices are increasing and impairing the service quality delivery of local authorities in Zimbabwe. Stockouts and redundancy of inventory have led to poor service delivery in these municipalities. The loss is felt in the form of lost revenues, poor customer satisfaction, skyrocketing operating costs, and various logistical inefficiencies for the department. Such items need to be replenished, stored, and returned if defective, and demand forecasting for better service delivery. There are shortages of items, excessive stock, large amounts of outdated stock, stock losses, and a lack of inventory tracking. Mazikana (2023) proclaims that the poor service delivery of local authorities is influenced by poor warehousing management practices, which account for between 2% and 5% of an organization's cost of sales. Declined service delivery levels by the municipalities in carrying out their mandate are a result of problems of fluctuating inventory levels, poor forecasting, and lack of proper inventory control systems due to poor strategic warehouse management practices and warehouse system techniques (Muchaendepi et al., 2019). Little research has been done in the body of knowledge about warehouse management practices in local authorities. Local authorities, like other government departments, are stuck to the traditional way of doing things. Computerized systems were introduced but to no avail. However, the major bottleneck to warehouse management practices alliances is information asymmetry and the lack of appropriate funding to adopt contemporary technologies. If current trends persist, the service delivery of the department will be severely compromised. Therefore, this study seeks to establish the influence of warehouse management practices on the service delivery of local authorities.

LITERATURE REVIEW

This section provides a literature review, hypothesis, and their development.

Warehouse Management Practices

The warehouse management process involves improving the efficiency and effectiveness of a distribution center's operations. It involves working with other partners within the supply chain. Van and Berg (2012) suggest that a highly competitive warehouse management practice must use an integrated strategy that examines all potential avenues for optimization. The administration of a warehouse comprises four components: its people, its processes, its technology, and its business. Warehouse management practices attempt to find a balance between the benefits of retaining inventory and the costs of doing so. It is a critical organizational activity and function that aids in the establishment of policies aimed at optimal inventory investment. Juma and Kilani (2022) further indicated that companies with better warehouse management practices maintain an inventory supply to retain service delivery, and operational independence, and satisfy discrepancies in product demand. Good warehouse management practices also attract operational flexibility in production schedules (Esheiba et al., 2022).

Service Delivery

Service delivery is of paramount importance in the interaction between different government ministries and citizens (Jacob et al., 2020). Improving service delivery through increased accountability has been a significant implicit argument for the shift toward decentralization in industrialized countries (Dobler et al., 2014). In African countries, elected local policymakers such as councilors, in response to increased citizen attentiveness, focus on increasing service performance to be re-elected (Burinskienė, & Lerher, 2021). Cordero and Ramírez (2021), for example, presented service delivery as an interaction between policymakers, service providers, and impoverished individuals. As a measure of service delivery, the researchers used accessibility, availability, dependability, and service quality under those of the Zimbabwean municipalities.

Urban Local Authorities

In Zimbabwe, urban local authorities are administrative organizations in charge of urban governance and management. They are in charge of providing various public services and amenities to the inhabitants of their areas. Urban municipal governments play an important role in urban planning, infrastructure development, service delivery, and preserving law and order through the Zimbabwean Urban Councils Act Chapter 29:15, which provides the legislative foundation for their operation and establishes urban local administrations in Zimbabwe. The Act establishes these authorities' powers, functions, and responsibilities. These urban local governments are in charge of a variety of services, including water and sanitation, waste management, urban planning and development, road maintenance, health services, housing, and local economic development. Each city or town has its administrative structure, which includes a mayor or chairperson, councilors, and numerous agencies that handle various aspects of city government. Urban local governments are organized as councils, and their members are elected by residents in local government elections.

Theoretical framework

Theories underpinning the study

This study uses three theories: inventory and production theory, application control theory, and adaptive structuration theory to address warehouse management practice problems. The theory involves developing a mathematical model to describe inventory behavior, designing

optimal inventory policies, and developing a computerized information processing system to provide current inventory levels (Brunello et al., 2019). The theory is concerned with the creation and implementation of effective warehouse management practices that will reduce institutional costs (Wangari et al., 2023). Thus, Zimbabwean municipalities should engage in warehouse management practices that minimize inventory costs to avoid losses. The application control theory is used to decrease inventory volatility, address the forester effect, and optimize inventory control systems in entities. This model addresses the questions of when and how much to reorder despite uncertain demand. The theory provides reordering insights and demand uncertainty recommendations (Baudin & Netland, 2022). This theory is deemed significant to this study to comprehend the consequences of inventory approaches on warehouse management practices on the service delivery of municipalities. Finally, the appropriation process of adaptive structuration theory (AST) is an excellent model for analyzing the use and penetration of new technologies in municipalities (Jhaveri & Gupta, 2021). This theory is thought to apply to this study to comprehend the implications of warehouse management practices to achieve superior service delivery in municipalities (Barragan et al., 2022).

Development of Hypothesis

The following is the research hypothesis testing, which was used to determine whether the empirical data supported the theoretical model of warehouse management practices (WMP). Theoretical calculations predict that bivariate correlations between the independent variables enterprise resource planning (ERP), order processing (OP), inventory lead time (ILT), and material handling (MH) have some direct connections with warehouse management practices (WMP). The theoretical model for the study was developed using multiple linear regression with three predictors and three hypothesized bivariate correlations.

The structural model was evaluated using five criteria: the chi-square ($\chi 2$) likelihood ratio statistic, goodness-of-fit index (GFI), normed fit index (NFI), comparative fit index (CFI), and root mean square error of estimate (RMSEA). Because the chi-square test for the model was not statistically significant $\chi 2$ (33, N = 125) = 41.11, p =.157), the model fit the data. All but one index had good fit indices from the model. The recommended target values were obtained using the other fit metrics. The GFI had a value of .94, which denotes a good fit. The NFI was .80, which is less than the desired level of 0.95. The RMSEA was 045 and the CFI was .95. Overall, the fit indices show that the model and data fit each other well. Based on these findings, it was decided to stick with the null hypothesis that the theoretical and observed covariance matrices are equivalent. Table 1 displays the observed model's fit indices.

Table 1. Fit Indices of the Observed Model (N = 125)

Fit Index	Observed Model	Recommended Level	References
$\chi 2$	41.11, p = .157	Non-significant	Hair et al., 2009
GFI	.94	≥ .90	Myers et al., 2013
NFI	.80	.95	Myers et al., 2013
CFI	.95	.95	Hu & Bentler (1999)
RMSEA	.045	≤ .05	Schumacker & Lomax, 2004

We propose the following hypothesis based on the above arguments:

H_1: Enterprise resource planning has a positive influence on service delivery

When properly implemented, an Enterprise Resource Planning (ERP) system can be used to manage and integrate all of an organization's business functions into a unified whole (Yusupov &

Umetbayev, 2022). An enterprise resource planning system is typically composed of a set of software tools and applications that are designed to help manage various aspects of a business. These tools include financial and accounting, human resource management, sales and distribution, and production planning (Boykin, 2001).

H_2: Order processing has a positive effect on service delivery

Order processing and inventory management are intertwined. Customer service and satisfaction are dependent on order processing (Anampiu, 2020). Receiving, recording, filling, and assembling products for shipping are all part of this process. The period between the receipt of an order and the shipping of products must be reasonable and as quick as possible. Order processing refers to the set of tasks involved in fulfilling a customer's request for products or services (Ayivi, et al., 2022). The processing procedure begins with the customer's approval of the order and does not end until the customer receives the products and confirms that the order was delivered precisely and completely. Companies frequently devote a significant amount of time and attention to developing an effective order processing strategy, improving the likelihood of developing a long-term working relationship with their clients (Shehu & Aliyu, 2023). Order processing refers to communication messages that set the physical distribution process in motion. It involves activities such as planning, execution, communication, and specifications regarding the delivery of products to customers (Pérez, 2023). Order processing is connected with information system technologies to allow for a seamless flow of operations. Information systems are crucial for order processing, inventory visibility, and delivery schedules, but they must be compatible with the supply chain network system for continuous information flow and improved warehouse management flexibility and responsiveness (Amani & Okdinawati, 2023).

H_3: Inventory lead time has a positive effect on service delivery

Pérez (2023) proclaims that literature on operations research and inventory management reveals contradictory impacts of lead time. While some suggest that lead time positively influences organizations' readiness to handle disruptions, others argue that it has contradictory effects. Vyas-Doorgapersad and Kemp (2020) discovered that inventory level is positively associated with procurement lead time in all eight of the industrial segments studied using field data from US public corporations between 1992 and 2002. Shorter lead times allow businesses to adapt dynamically to changing client demand and reduce the motivation for them to have extra inventory on hand (Nwaiku & Ejechi, 2022). Firms would be adversely impacted by the disruptive impact, such as production halt, stockout frequency, and backorder rate when faced with supply interruptions caused by delivery problems or supply shortages. Supply chain members with longer delivery lead-time increase stock levels to counteract the prediction error of relative lead-time demand, raising the degree of abundance to attenuate the disruptive influence and reduce the intensity of the first impact (Nisa & Rahmawati, 2023).

H_4: Materials Handling has a positive effect on service delivery

Throughout the manufacturing, distribution, consumption, and disposal processes, materials, items, and products are moved, stored, controlled, and protected (Meru & Kinoti, 2022). Materials handling allows production to flow because it offers static elements like materials, products, equipment, layout, and human resources dynamism. The importance of material handling arises from its close connection to the production process. When there is an imbalance, additional stock is created or supply is disrupted. When the flow is too slow, the transit time is too long, and the system is unable to provide clients when they need it. Material handling contributes 30–75 percent of a product's total cost along the manufacturing chain, and efficient material handling can

save 15–30 percent on manufacturing system operations costs (Parilla et al., 2023). Figure 1 depicts the proposed conceptual framework for the study, which is based on the aforementioned objectives and objectives.

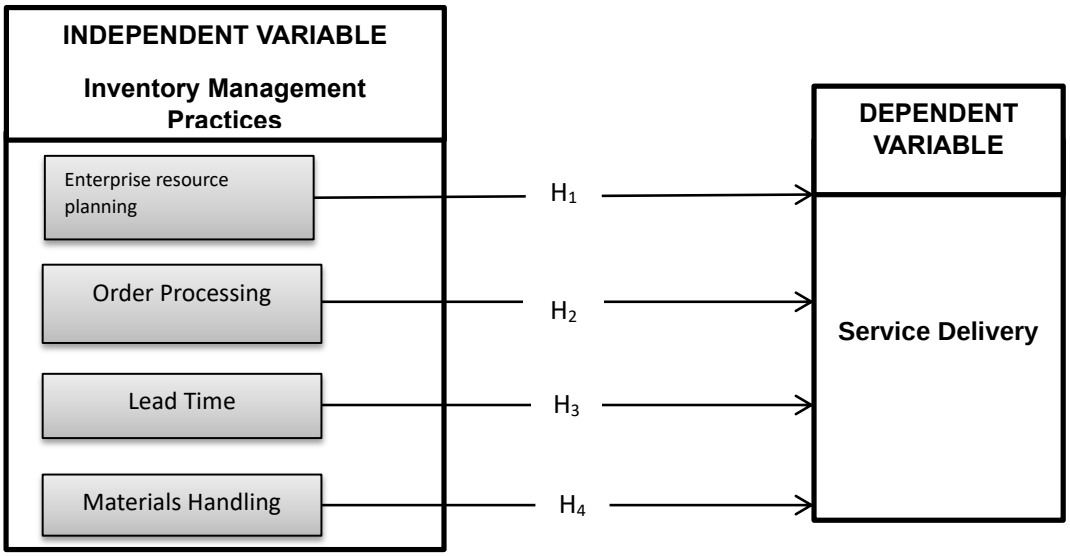

Figure 1. Proposed Conceptual Framework for the Study

RESEARCH METHOD

The research instrument was refined and corrected after a pilot trial. Data for the current study were gathered (in February 2023) through a cross-sectional survey of management staff from Zimbabwe's 10 urban/city local authorities. The study selected 200 city council administrators, inventory controllers, and operational managers from a 600-employee population using the RAOSOFT sample size calculator. The respondents were from the managerial ranks of five out of ten major city councils in Zimbabwe where warehouse management practices were being applied (Harare, Bulawayo, Gweru, Masvingo, and Mutare). These five main cities were chosen to symbolize Zimbabwe's 10 city councils. The study targeted urban local authorities, in Zimbabwe and was the only developing country involved. This makes it difficult to generalize findings. To address the generalization difficulties, it is suggested that additional studies of this kind be conducted in other economic sectors and various developing countries. As a result, the study evaluated 50% of all significant city councils as potential respondents. Before distributing questionnaires, each organization was asked for permission to gather data. Respondents were informed about the goal of the study and invited to participate. Responders were given a questionnaire, an envelope to secure the questionnaire, and a letter to complete within a week. A structured questionnaire with Likert-type items was used to collect data. The items were taken from similar studies and adjusted for the current investigation. The structured questionnaire items and sources are shown in Table 2.

Table 2. Structure Questionnaire Items and Sources

Constructs	Items	Sources
Enterprise resource planning	They use advanced techniques for warehouse management practices	Amani and Okdinawati (2023)
	Local authorities are responsive to materials demand	Kumar (2020)
	The system ensures the availability of stock when needed	
	Local authorities use paper-based techniques for inventory	

Constructs	Items	Sources
	control	
	There is uninterrupted supply of materials	
	Local authorities use Just -In -Time System	
Order Processing	The council uses electronic order processing	Ayivi et al. (2022)
	Orders are processed in a timely manner	Handa et al. (2021)
	There is a system where vendors can track their goods	
	Councils have vendors that deliver goods to customers when inventory runs low	
	Suppliers have a database that tracks its goods	
Lead Time	Violation of contracts and agreements is affecting the delivery of supplies	Munuhwa et al. (2020)
	Local authorities use Just -In -Time System	Mazikana (2023)
	Materials are not taking too long to be delivered	
	Replenishment levels are affecting delivery of supplies	
	Delivery of materials is being affected by order processing time	
	Local authorities use advanced techniques for order expediting	
Materials Handling	Councils uses forklifts to lift inventory	Muchaendepi et al. (2019)
	Local authorities use advanced techniques for materials handling	Nwaiku and Ejechi (2022)
	Councils have an inventory zero-defect policy	
	There are trained personnel for materials handling	
	There are databases that tracks and monitors the defect rate its goods	

Out of the 200 responders who volunteered to participate in the survey, 185 (93%) were returned and usable. The survey included a diverse sample of individuals with over 5 years of experience in administration, operations, and management, with 88.5% holding qualifications beyond the diploma level. This ensured a well-rounded understanding of the subject under examination, as the majority of respondents had extensive knowledge of the subject (Sydow et al., 2020).

FINDINGS AND DISCUSSION

Table 3 displays the sample profile for the demographic characteristics of study participants. The study's majority of respondents (68.4%) were aged 30-49 years, with males dominating (81.3%), indicating a balanced gender and age profile, providing balanced perspectives for the study. The majority of responders (71.7%) worked as council administrators, inventory controllers, and operation managers, indicating that those with the necessary expertise in warehouse management procedures gave the much-needed information.

Table 3. Demographic Information

Characteristic		Frequency	Percent (%)
Gender	Male	120	60
	Female	80	40
Age	Less than 30	22	11
	30–39	70	35
	40–49	60	30
	50–59	40	20

Characteristic		Frequency	Percent (%)
	60+	8	4
Department	Administration	115	57.5
	Warehouse	70	35
	Operations	15	7.5

Before doing exploratory factor analysis, the viability of the data for factor analysis was assessed using Bartlett's Test of Sphericity and the Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO) in licensed SPSS Version 21. To assess the sample's suitability, a KMO measure of sampling adequacy was applied. The KMO statistic has a range of 0 to 1, with 0 denoting that the sample is completely inadequate and 1 denoting that it is completely adequate. For the sample to be sufficient, Kaiser recommended that the measurement be at least 0.5. Bartlett's Test of Sphericity was used to assess the data's suitability for factor analysis, as recommended by Field (2009). The results showed a KMO of.948, Chi-square of 20385.878, and degrees of freedom of 595, $p<0.001$. The sample was suitable for exploratory factor analysis, limiting the number of linked variables to prevent duplicates. The factor rotation approach was used to make findings easier to read, and the Varimax method was used to simplify factor analysis by maximizing the total sum of variables' squared correlations.

Table 4. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.575
Bartlett's Test of Sphericity	Approx. Chi-Square	2750.815
	Df	667
	Sig.	.001

Table 4 displays the factor loadings for each factor. Factors with loadings less than 0.6 were suppressed and thus not provided. Field (2009) suggested taking into account loadings greater than 0.6 to facilitate comprehension. As a result, the results in Table 4 met the factor loading minimal cut-off level (Shah et al., 2021). Reliability refers to the ability of data to be replicated and produce similar results on repeated trials. Cronbach's Alpha (α) was used to assess the internal consistency of structures, with all constructions having a Cronbach's alpha (α) value greater than 0.6.

Table 5. Construct, the number of items and Cronbach's (α)

Construct	Number of Items	Cronbach's alpha (α)
Enterprise resource planning (ERP)	6	.910
Order Processing (OP)	6	.922
Lead time (LT)	6	.894
Material handling (MH)	6	.919

The researchers used convergent analysis to ensure no constructs correlated with other ideas. They evaluated a measurement model for testing before determining convergent validity. Maximum Likelihood Estimation (MLE) was used to estimate the model, and various fit indices were considered, including CMIN/DF, Goodness of Fit Index, Adjusted GFI, Normed Fit Index, Tucker-Lewis Index, Comparative Fit Index, and Root Mean Square Error of Approximation. CMIN/DF = 4.619; GFI = 0.899; AGFI = 0.871; NFI = 0.939; TLI = 0.944; CFI = 0.952; and RMSEA = 0.071 were the proper model fit indices reported by the measurement model. Shah et al. (2021) suggest that a good model should have a $\chi 2/DF$ between 0 and 5, with smaller values indicating

better fit. GFI, AGFI, NFI, TLI, and CFI values should be closer to 1, and RMSEA should be between 0.05 and 0.10. Table 6 illustrates the relationships between the variables. There were insignificant associations between Enterprise resource planning (ERP), r = .29, p =.359, Order processing (OP), r = .29, p = .332, Lead time (LT), r = .29, p = .325, Materials handling (MH), r= .29, p =.311.

Table 6. Intercorrelations among Independent Variables in the Structural Model

Relationships	***r***	**S.E.**	***p***
Enterprise resource planning ⇒ service delivery	.29	.004	.359
Order Processing ⇒ service delivery	.29	.172	.332
Lead time ⇒ service delivery	.28	.173	.345
Material handling ⇒ service delivery	.29	.177	.325

The extracted variable factors were tested on a structural equation model (SEM) and they affect service delivery. The coefficients for the structural model are shown in Table 7.

Table 7. Coefficients for the Structural Model

Relationships	**β**	**R2**	**S.E.**	***p***
Enterprise resource planning ⇒ service delivery	.26	7.0	16.62	.059
Order Processing ⇒ service delivery	.03	0.0	.299	.057
Lead time ⇒ service delivery	.03	0.0	.249	.773
Material handling ⇒ service delivery	.01	0.0	51.07	.995

The structural model's path coefficients reveal that enterprise resource planning significantly predicts service delivery, with a large effect size (β =.26, p =.059). Enterprise resource planning affects service delivery, accounting for approximately 7% of the variance in enterprise resource planning.

Table 8. Reliability Test

Construct	**Standardized factor loading**	**Individual item reliability**	**Critical ratio**	**Cronbach's alpha**	**Composite reliability**
Enterprise resource planning (ERP)					
ERP1	0.814	0.895	–	0.910	0.929
ERP2	0.771	0.879	13.646***		
ERP3	0.801	0.848	19.772***		
ERP4	0.888	0.702	20.517***		
ERP5	0.923	0.894	11.381***		
ERP6	0.828	0.797	13.417***		
Order Processing (OP)					
OP1	0.776	0.755	–	0.922	0.942
OP2	0.790	0.843	9.988***		
OP3	0.801	0.884	15.322***		
OP4	0.922	0.966	20.139***		
OP5	0.780	0.883	15.649***		
OP6	0.826	0.762	18.193		
Lead time (LT)					
LT1	0.855	0.904	–	0.894	0.921
LT2	0.867	0.853	16.346***		
LT 3	0.872	0.898	18.018***		
LT 4	0.789	0.912	20.013***		
LT5	0.723	0.847	10.973***		

Construct	Standardized factor loading	Individual item reliability	Critical ratio	Cronbach's alpha	Composite reliability
Material handling (MH)					
MH1	0.865	0.868	–	0.919	0.976
MH2	0.781	0.833	11.335***		
MH3	0.890	0.904	19.325***		
MH4	0.770	0.923	8.965***		
MH5	0.845	0.783	9.998***		
Urban Councils service quality (UCSQ)					
UCSQ1	0.698	0.781	–	0.898	0.937
UCSQ 2	0.799	0.875	14.012***		
UCSQ 3	0.743	0.777	13.657***		
UCSQ 4	0.785	0.794	9.565***		
UCSQ 5	0.829	0.874	14.692***		
UCSQ 6	0.813	0.911	23.148***		

Note(s): CR is fixed; ***significant at $p < 0.001$

Discriminant Validity

The study assessed discriminant validity by comparing average variance extracted (AVE) with squared inter-construct correlations (SICCs). All AVEs exceeded SICCs, meeting the recommended conditions. The findings are presented in Table 9.

Table 9. AVEs and SICCs

Construct	ERP	OP	LT	MH
Enterprise resource planning (ERP)	**.728**			
Order Processing (OP)	.217	**.746**		
Lead time (LT)	.496	.402	**.695**	
Material handling (MH)	.341	.312	.419	**.799**

Note(s): Diagonal elements in bold represent AVEs.

Hypothesis Testing

The structural equation modeling technique was used to investigate hypothesized associations (H1, H2, H3, and H4) in AMOS version 21. Table 10 presents the outcomes of the hypothesis tests.

Table 10. Results of Hypotheses testing (H_1, H_2, H_3 and H_4)

Hypotheses	Hypothesised Relationship	SRW	CR	Remark
H_1	Enterprise resource planning (ERP)⇒ service delivery	.321	19.066***	Supported
H_2	Order Processing (OP)⇒ service delivery	.303	2.695***	Supported
H_3	Lead time (LT)⇒ service delivery	.237	3.869***	Supported
H_4	Material handling (MH)⇒ service delivery	.322	10.667***	Supported

Notes: The SRW standardized regression weight and CR critical ratio were found to be significant at $p < 0.05$ and $p < 0.001$, respectively.

Table 10 presents results that H_1, H_2, H_3, and H_4 were supported. This implies that; enterprise resource planning (ERP), order processing (OP), lead time (LT), and material handling (MH) have a direct influence on service delivery. The results of this study were in agreement with the study of Wandie and Muathe (2022) who posits that poor service quality in most public organizations is affected by inventory management practices. The hypothesis testing results have been published

in high-income nations, but relatively few studies have been undertaken in developing countries, particularly in the Sub-Saharan region (Karani & Osoro, 2020). As a result, research like this one is critical because it provides new insights and validates existing knowledge on warehouse management techniques in Zimbabwean municipalities. The current study broadens municipal service delivery understanding in the Sub-Saharan region by demonstrating that warehouse management practices have a direct impact on service delivery.

CONCLUSIONS

The research findings conclude that urban local authorities should focus on improving their staff's understanding of the use of warehouse management practices (WMP) and the benefits they provide. There is a need for local authorities to partner with technology firms to educate their customers about the various factors that can affect the cost of implementing new technology. These findings were in agreement with Matebese (2021). Furthermore, the lack of familiarity with the various aspects of WMP tools affects the operations of local authorities' supply chain architecture. From the research findings, it is also suggested that urban city councils must focus on fully implementing warehouse management practices and the related innovative technologies as this will resultantly impact on service delivery. Anampiu (2020) was in tandem with these findings when he proclaimed that enhanced technologies have a positive effect on service delivery in public entities. The local authorities should encourage automation in warehousing activities to reduce the tiresome usage of manual operations which are prone to errors and inefficiencies hence poor service delivery. In addition, local authorities should set up clear and precise policies on the full adoption and implementation of information systems to streamline warehouse management activities and also enable full integration with other cross-functional teams and customers. This will bring on the efficient execution of warehouse management through the sharing of critical supporting information.

Implications to policy and practice

More so, there is a need for persistent top-level management commitment in terms of resource allocation in improving warehouse management practices. Resources are needed for organizations to continuously innovate and attract expert personnel, continuous training of employees, and implementation of information technology. Furthermore, the organization needs to function as a system wherein all departments work in unison to improve warehouse management practices and service delivery. This can be made possible by improving communication channels, allowing for visibility of activities, and also making the overall objectives of the company clear to all employees.

Implications to theory

Research on the correlation between warehouse management practices and service delivery is limited. Although there is agreement on the interaction between these factors, the degree and importance of the link between the two remain unknown, implying that there may be contradictions in the methodologies employed to analyze this issue. The research on the relationship between warehouse management practices and service delivery in Zimbabwe lacks empirical insights, making the findings of this study critical as they provide new knowledge and contribute to the current understanding of warehouse management practices and service delivery.

LIMITATION & FURTHER RESEARCH

The research study has left some of the research gaps which need to be considered for future

research. The gaps in the study are as a result of the time frame to carry out the study and, the use of a single data collection method. The research study is a cross-sectional study, which is characterized by a short time frame, where the results are assumed to be biased towards a particular period. There is a need for future studies regarding this area of study in a longitudinal section, to assess the trends over some time. The trend in time can provide the effect of warehouse management practices on service delivery in a stable environment and an unstable environment to give accurate results of the research.

This study focused on warehouse management practices as some causes of poor service delivery leaving out other factors like corruption and maladministration. The study targeted urban local authorities, in Zimbabwe and was the only developing country involved. This makes it difficult to generalize findings. To address the generalization difficulties, it is suggested that additional studies of this kind be conducted in other economic sectors and various developing countries. Future research may employ moderating and mediating variables. The findings of this study were only limited to urban local authorities in Zimbabwe. As such, these findings may not be applicable directly to other organizations in other sectors of the economy. It is therefore, recommended that future studies be extended to other areas within the wider business sectors such as the construction industry, chemical sector, banking sector, and many other sectors to find out if the findings will be in line with this study.

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