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Assessing Factors Affecting e-Procurement Adoption Among Micro, Small and Medium Enterprises Trading in Groceries in Lusaka District

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Abstract

This study assessed factors affecting e-procurement adoption among micro, small and medium enterprises (MSMEs) trading in groceries in Lusaka district. The study aimed to; establish the current status of e-procurement adoption, investigate key factors affecting adoption and to propose strategies that would facilitate adoption. Global and regional procurement trends in this sector were reviewed along with challenges and opportunities in e-procurement adoption, emphasizing its bearing on procurement efficiency. For the quantitative portion of the study, stratified sampling was used to come up with a study sample from the target population, after which simple random sampling was used to select respondents from each stratum of MSMEs. Additionally, purposive sampling was used to select the study sample for the qualitative portion of the study. Guided by the technology, organization and environment (TOE) framework, the study employed a sequential explanatory mixed-methods research design starting with a quantitative survey using structured questionnaires, then followed up by one-on-one interviews. Quantitative data was analysed using descriptive statistics, frequency distribution and regression analysis, while qualitative data was examined through manual thematic analysis. The findings revealed that a moderate level of e-procurement adoption was the most prevalent represented by 39.4% of 348 respondents. These findings suggested that while e-procurement was being utilized, full adoption remained limited with most MSMEs still using traditional procurement means and in the early to moderate stages of adoption. Additionally, the findings presented both the opportunities and challenges that grocery trading MSMEs face. Usability and industry trends were strong enablers, while organizational constraints such as skills gaps, financial constraints and resistance to change emerged as key obstacles for adoption. Based on these insights, the study proposed that MSMEs may consider adopting a phased approach in procurement digitization and investing in employee ICT training. To support this strategy, there would be need for supply-chain wide digital integration, infrastructural enhancements by network providers, capacity building through deliberate ICT training programs tailored to grocery traders and introduction of subsidized digital transformation grants for MSMEs. The study concluded that a well-structured innovation adoption framework, supported by policy and business wide engagement was essential for driving sustainable e-procurement adoption among MSMEs trading in groceries in Lusaka district.

1. Introduction

Traditionally, procurement is carried out using dated procedures including physically visiting supplier locations to purchase goods or services. These procedures consume a lot of time and slow down the procurement process due to non-essential paperwork and manual miniature tasks that can otherwise be streamlined (Gunasekaran et al 2009; Eskandarian et al 2016). To elevate the process of procurement, technology plays a critical role (Adebayo & Evans, 2015) and e-procurement has emerged as a transformative tool in modern supply chain management for streamlining procurement processes (Rahayu and Day, 2015). It can be utilized to make purchases as well as exchange data with suppliers and other key members of the supply chain online (Gibbs & Kraemer, 2004).

E-procurement has the potential to increase transparency and accountability in procurement for MSMEs; however, it has mostly gained popularity and use within larger firms (Oladele, 2018). The level and rate of adoption by MSMEs in comparison is low (Kiveu & Ofafa, 2014). In-depth understanding of factors affecting e-procurement adoption specific to MSMEs trading in groceries is imperative as these businesses contribute significantly to economic activity and employment in Zambia (MSMED, 2023). Several studies relating to e-procurement have been undertaken by different scholars, however they have been in different countries, market segments and organizational contexts. For instance, Altayyar & Beaumont Kerridge (2016) in their study investigating the barriers deterring acceptance of e-procurement by Saudi Arabian SMEs determined that poor IT infrastructure, security risks, lack of government support and unskilled poorly trained employees formed the main barriers of e-procurement adoption. Another study by Kasaine (2016) investigated factors influencing e-procurement implementation among supermarkets in Nairobi, Kenya. In this study, it was established that contrary to the several barriers of e-procurement adoption, a significant percentage of up to 67% of supermarkets moderately adopted e-procurement. Nonetheless, technological factors, organization readiness as well as environmental factors formed a large part of factors that hindered e-procurement adoption. On the other hand, Eei et al (2017) carried out a study to examine the benefits and barriers of e-procurement adoption experienced by Malaysian SMEs. The results of the study identified both internal and external barriers to e-procurement adoption, internal barriers included organizational characteristics and insufficient resources while technology, regulations and infrastructure were established as external barriers.

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Although existing literature provides valuable insights into the drivers, benefits and barriers of e-procurement adoption, it is worth noting that most of these studies have focused on contexts markedly different from that of MSMEs trading in groceries in Zambia. Additionally, despite the studies highlighted providing insight into e-procurement adoption, prior research has predominately examined larger firms and in countries including; Saudi Arabia, Kenya and Malaysia where technological and supplier environments, market structures and policy frameworks differ significantly. Consequently, limited empirical evidence exists on how MSMEs in the grocery sector perceive, adopt or are hindered in their adoption of e-procurement systems. As such, this contextual and sector-specific gap highlighted the need for a focused investigation. In light of the aforementioned, this study sought to generate localized insights that may inform e-procurement adoption decisions by MSMEs, key members of the grocery supply chain and policymakers, while providing empirical support for future academic research with similar context.

1.2 Statement of the Problem

In today's business environment, most supply chains have migrated towards digitalization of procurement processes owing to enhanced turnaround times, increased operational efficiency and easy traceability of operations (Annuar, 2015). The grocery trading sector being a fast-paced industry itself requires no less. However, according to the 2023 Revised National Micro, Small and Medium Enterprise Development (NMSMED) policy report, despite being at the centre of economic activity MSMEs in Zambia are yet to realize their full business potential due to several limitations, chief among them being poor uptake of technology (MSMED, 2023). Additionally, in the recent past, low uptake of technology has contributed towards supply chain disruptions. For instance, the unprecedented outbreak of the deadly pandemic corona virus dabbed "Covid-19" in 2020 significantly affected global supply chains (Magableh, 2021). In Zambia this led to a complete shutdown of numerous MSMEs causing a 77.3% cumulative loss of business (Ministry of Commerce, Trade and Industry, 2020). Despite the transformative potential of e-procurement, studies in other developing and developed countries have also highlighted low uptake of e-procurement among SMEs (Jama et al., 2024; Marei et al, 2021; Husin, 2019; Altayyar, 2017; Mukulungui, 2016; Katua, 2014; Eei et al., 2012). However, there is lack of localized understanding and empirical evidence of the factors affecting e-procurement adoption among MSMEs, particularly those trading in groceries in Lusaka district. This gap in understanding not only hinders policy formulation that supports MSMEs but prevents MSMEs themselves from making business decisions that would enhance their operations while maintaining amiable supplier relationships.

2 Literature Review

2.1 Current Status of E-Procurement Adoption among MSMEs

A study by Jama et al., (2024) researched e-procurement adoption barriers encountered by SMEs. The study aimed to examine e-procurement implementation barriers, facilitate SMEs in the Republic of South Sudan, and to effectively internalize e-procurement adoption and barriers. The study adopted and adapted the Technology, Organizational, and Environmental (TOE) framework to encompass political/legal and management factors, translating into the technological, political/legal, management, and organizational (TPMO) framework. A mixed method approach achieved a 71 % response rate from 300 systematically sampled SMEs. Data was collected through survey questionnaires and analysed using descriptive and principal component analysis (PCA), relative importance index (RII), and analytical hierarchy process (AHP). It was found that technological, organizational, management, political, and legal factors affected e-procurement adoption, including company culture, lack of flexibility and widely acceptable e-procurement software solutions, cost of IT investment, immaturity of technology and multiple national e-procurement implementation methods, incorrect reassembly of data transmitted and delays in the transmission of data and information as key factors.

Through empirical analysis of e-procurement adoption in SMEs, Perez (2022) aimed to account for factors that impact the acceptance of e-procurement and to understand the present State Of e-procurement in SMEs in Southcoast Massachusetts. A cross-sectional ground review was utilized to carry out the study. 250 questionnaires were shared with randomly selected respondents. The respondents were mostly adults between 25 and 40+ years who were generally learned and experienced professionals. Excel was used to analyse the data. The findings indicated that the age, experience and education of the owners/managers were internal factors that influenced e-procurement adoption and implementation.

Waithaka (2021) carried out a study on determinants of adoption of e-procurement practices by critiquing studies previously done by other researchers on the topic. The aim of the study was to establish the factors influencing the adoption of e-procurement practices. A desk study review was adopted to search for and select empirical literature considered relevant to the study on factors influencing the adoption of e-procurement practices. Thematic analysis was used critically analyse and draw interpretation from findings, indicating that this was a qualitative study. The result of the study was that e-procurement has not been fully adopted by businesses both in the private and public sectors. Some of the factors found to be key influencers in adoption of e-procurement were user acceptance, staff turnover, management support, and security of internet-based procurement and payments (e-security).

Gitonga et al., (2020), carried out a study on the influence of internal organizational factors on e-procurement. The objective of the study was to assess the effect of internal organizational factors on e-procurement adoption in Small and Medium-Sized Enterprises. The location of the study was Nyeri County, Kenya. A pilot study on five SMEs was conducted beforehand before the main collection of data. Cronbach alpha was used to test reliability. A total of 105 self-administered questionnaires were distributed among business owners in Nyeri County. The collected data was then evaluated through regression and correlation analysis. The study was guided by the Resource Based Theory (RBT), the conceptual framework recognized internal organizational factors as independent variables and e- procurement adoption as the dependent variable. The study initially hypothesized that internal organizational factors do not have a significant influence on SMEs e-procurement adoption, however after the study was conducted, the results determined that perceptions of the owner/manager, size of an organization, employee knowledge and the level of trust in the technology all internally influence e-procurement adoption by SMEs.

In 2019, Husin undertook an empirical investigation of e-procurement adoption. The objective of the study was to investigate e-procurement adoption among SMEs operating in Sabah, Malaysia. The study was guided by the organizational perspective model, specifically focusing on the adoption factors of e-procurement. The study was carried out using a survey, 250 companies registered with the Ministry of Finance (MOF) and had already incorporated e-procurement into their business processes were sampled using purposive sampling. The data collected was analysed using Smart PLS, which incorporated the measurement model and the structural model. A key obstacle discovered in this study relating to e-procurement adoption was individuals or people within the organization who did not seem to appreciate the noteworthy of cost and time saving despite capacity being created for e-procurement use.

In 2017, Altayyar embarked on a study to investigate e-procurement barriers. The purpose of the study was to uncover factors affecting the adoption of e-procurement within six Saudi Arabian SMEs. The theory underpinning the study was the Gunasekaran and Ngai (2009) model which was subsequently extended by Altayyar (2017) to incorporate perceived cultural and external factors as pertinent additional factors influencing e-procurement adoption in Saudi Arabian SMEs. The study took a mixed methods approach, and data was gathered through detailed interviews, an exploratory study and a detailed survey. The study revealed that the culture of the business community in which SMEs operate, the firms own culture and cultural inertia are cultural factors that highly influence adoption of e-procurement. On the other hand, competitor pressure, suppliers providing safe online payment options, affordable and highspeed internet connectivity, suppliers' willingness and readiness as well as having government support and favourable regulations externally influence adoption of e-procurement. The study further revealed that influence of some factors increased over others in the extended model as compared to the initial Gunasekaran and Ngai (2009) model, suggesting that each business may or may not experience the same effects.

In a study conducted by Mukulungui (2016) on barriers to e-procurement adoption by small and medium enterprises in Machakos County, the aim was to find out what limitations were preventing e-procurement adoption among SMEs in Kenya and to come up with a guideline that will help alleviate said barriers. The study was guided by the Technological, Organizational and Environmental (TOE) framework. The sample size was 80 SME's in Machakos County. Qualitative and quantitative data was collected using self-administered questionnaires and analysed using SPSS. The study found that technological factors were the main blockages to e-procurement adoption amongst SME's in Machakos County, in line with this a framework was developed to help SME's in adopting e-procurement for improved competitiveness and efficiency.

Makali (2015) explored the contribution of e-procurement to procurement performance in supermarkets. The purpose of the study was to assess the adoption of e-procurement and evaluate procurement performance in supermarkets in Nairobi. A combination of two theories informed the study: the contingency theory of management and the resource-based view of strategy. The contingency theory guided the assessment of the adoption processes and the relationship between e-procurement and stimulates best performance in procurement. Whereas the resource-based view helped understand how supermarkets can rise above competition while embracing e-procurement as a key resource. A census survey was used to undertake the study, targeting 40 supermarkets within Nairobi. To collect data, respondents were issued with semi structured questionnaires. The study established that adoption of e-procurement is still relatively low due to individual, technological, organizational and environmental factors with adoption rates standing at 56% of sampled supermarkets, most of whom adopted e-procurement practices less than a year before the study. It was established that onboarding e-platforms for procurement is a task that requires a concerted effort, but when it is done correctly, e-procurement helps alleviate wastage and costs concerning going paperless, plus there is a significant reduction in costs associated with sourcing for suppliers.

Duarte (2015) carried out a study in Portugal on determinants of B2B e-purchasing adoption by SMEs. The purpose of the study was to evaluate determinants of B2B e-purchasing within SMEs supply chains. The study was exploratory in nature and was guided by the Technology Organizational Environment (TOE) framework. Questionnaires distributed digitally via email, Facebook and LinkedIn were used to collect data from the target audience that was selected through convenience sampling. Spearman's Rho rank correlation was used to test the hypothesis. The study concluded that indeed there is an undeniable connection between TOE factors and SMEs making purchases online. Furthermore, the study highlighted that management support, willingness to purchase online, pressure from trading partners along with perceived benefits and costs of e-procurement were some of the factors that indicated strong relationships with SMEs making the decision to adopt e-procurement.

In the study "The impact of barriers and benefits of e-procurement on its adoption decision: An empirical analysis", the aim of Toktas-Palut (2014) was to evaluate the effects of barriers and benefits of e-procurement systems on the decision to adopt e-procurement. This in-depth analysis was undertaken for a retail Store chain trading in books and stationery sector in Turkey. The analysis was done by applying the Interpretive Structural Modelling (ISM) method to a range of barriers and benefits to be able to determine contextual relationships. This resulted in finding inadequate IT infrastructure of suppliers or business partners as a key limitation in the adoption of e-procurement systems, while integrated information sharing was the most significant benefit. Furthermore, it was determined that barriers and benefits both possess high influence on other drivers of e-procurement adoption. To test this hypothesis, both barriers and benefits of e-procurement adoption were integrated into the structural equation model. The result was that either barriers or benefits of e-procurement systems can have a negative or positive effect on the decision to adopt e-procurement, however, the influence of benefits was greater than barriers indicating that it is advantageous for businesses to adopt e-procurement systems.

2.2 Key Factors Affecting E-Procurement Adoption Among MSMEs

Despite e-procurement presenting numerous benefits, a lot of organizations especially MSMEs are yet to embrace this technology aided process. This state of affairs is more apparent in developing countries where e-procurement is seen to be in its formative stages and less so in developed countries (Mafini et al., 2020; Kabanda et al, 2019). As such, this study was carried out to uncover the current status of e-procurement adoption and assess the factors affecting e-procurement adoption among MSMEs trading in groceries in Lusaka district. In pursuit of this and with reference from previous similar studies and theoretical underpinnings, organizational, technological and environmental factors were recognized as the key factors that are likely to influence adoption.

Technological factors which are both internal and external to an organization play a significant role in the adoption of e-procurement (Chadra & Kumar, 2015). These factors encompass issues in relation to availability of standard ICT infrastructure, employees with IT knowledge as well as system vendors that promptly offer after service support when needed (Ramdani, et al., 2013). Compatibility, usability, complexity and relative advantage of the e-procurement system have also been seen to influence the decision to adopt e-procurement in place of traditional procurement (Hassan, et al., 2017; Adeye, 2016). Additionally, security features of systems for instance in relation to safeguarding users and company data when carrying out transactions are key in facilitating adoption of e-procurement systems (Osir, 2016). Users Of innovative systems are usually apprehensive about systems being hacked and their personal or company data being accessed by people outside the intended recipients (Molinillo & Japutra, 2017). As such, risk to security is a major barrier towards acceptance and use of innovative systems such as e-procurement systems (Zheng et al., 2011).

Organizational factors are operational factors that allow or prevent businesses from accessing and utilizing needed resources to successfully adopt innovative processes (Khanuja & Jain, 2019). For instance, successful adoption and use of e-procurement is highly probable when top management dedicates time, human resources and finances towards the adoption process. Owners or manager's educational levels also play a significant role in the possibility of adopting e-procurement (Vladimirov, 2014). Above all, good managerial skills take precedence in the successful adoption and implementation of e-procurement by employees (Mgidlana. 2013). Globally, minimal knowledge Of and poor IT training have also been recognized as major barriers of e-procurement adoption (Oliveira & Martins, 2010). While Manuel and Duarte, (2015) affirm that size and structure of an organization which generally determines the amount of resources that can be set aside to facilitate e-procurement adoption positively influence adoption, along with level of education of employees and top management's investment in employee's IT training and skills development (Ibemi, et al., 2016).

Environmental factors, both internal and external to an organization, signifies opportunities and threats facing an organization and also the strengths and weakness (SWOT) inherent to an organization and they usually need strategic planning since they influence an enterprise capacity to invent and accept technological advances (Lai, 2017). Some of the environmental factors are competitive pressure, government policies and legislations, supplier forces, market forces, system vendor support, pressure from trading partners and so times customers themselves (Chong & Olesen 2017; Badi, et al., 2021; Anuar, 2015; dhiambo, 2013; Ramdani, et al., 2013). Prevailing literature has established that a positive relationship exists amid e-procurement acceptance and senior management insight on powers of market rivalry, industry pressure, suppliers and buyer's consumption behaviour and the industry trading methods (Kabanda, et al., 2019; Anuar, 2015; Huy, 2012). Studies have established that competitive pressure has a positive and significant association on successful implementation of e-procurement (Lai, 2017). Further, it has been established that if an action directly influences a competitor, making them obtain a competitive advantage in the market, other competing firms will also be under pressure to adopt the technological innovations (Mgidlana, 2013; Odhiambo, 2004).

2.3 Local Perspective

Mwale and Mutono-Mwanza (2025) investigated the factors influencing the adoption of e-procurement among small-scale businesses in Zambia, focusing on the North-Western Province. The study utilized a quantitative research approach and data was collected through the use of structured questionnaires which were distributed to 375 small-scale businesses in the study location. The findings indicated that management commitment, supplier relationships, cost of electronic infrastructure, regulatory compliance, and technological infrastructure significantly influence the adoption of e-procurement among small-scale businesses. The results showed that management commitment and supplier relationships were the strongest predictors of e-procurement adoption. While, technological infrastructure, the cost of electronic infrastructure and regulatory compliance were significant factors that positively influenced adoption rates.

2.4 Literature Summary and Research Gaps

Despite the grocery trading sector experiencing major supply chain disruptions in the recent past due to heavy dependence on traditional procurement practices, localized and contextual studies remain limited with most studies that have a specific focus on uncovering factors affecting e-procurement adoption among SMEs in the retail and trade sector mainly carried out in other developing and developed countries (Toktas-Palut, 2014; Makali, 2015; Kasaine, 2016). Altayyar & Beaumont-Kerridge (2016), in their study of e-procurement adoption among SMEs in Saudi Arabia established that poor IT infrastructure and lack of support by the government largely affected e-procurement adoption. However, the study findings could not be generalized due to the insufficient sample size of only four SMEs. The study by Eei et al (2017) examined the benefits and barriers faced by SMEs in Malaysia when adopting e-procurement. The study adopted a qualitative desk research study design and did not undertake data collection and analysis, limiting the ability to inference the results of the study across the population of SMEs that was studied. Furthermore, research on e-procurement adoption barriers by other scholars has been undertaken from either a national perspective (Jama et al 2024; Yessuf, 2019; Altayyar & Beaumount Kerrigde, 2016) or was biased towards public sector entities (Tsuma & Kanda 2017; Osir 2016; Mambo & Ombui 2015, Makau 2014). Additionally, while some studies either tackled internal or external barriers exclusively (Chadra & Kumar, 2015; Gitonga et al., 2020), this study endeavoured to have a holistic approach by assessing both internal and external factors in the context of MSMEs trading in groceries in Lusaka district.

3 Methodology

3.1 Research Philosophy and Design

The study adopted a pragmatic research philosophy; this allowed for combination of both the quantitative and qualitative research approaches for the purpose of providing a comprehensive understanding of e-procurement adoption among MSMEs trading in groceries in Lusaka district as the phenomenon being studied.

A research design is a plan that outlines conditions for collecting and examining data with the intention to answer research questions (Sekaran & Bougie, 2016). In order to effectively assess the factors affecting e-procurement adoption among MSMEs trading in groceries in Lusaka district, a sequential explanatory mixed methods design was adopted. This design was adopted not only because it allowed for collection of data from a large sample of MSMEs, but also because it reinforced the study's validity, while ensuring deeper insight were derived from the statistical findings (Bless and Kagee, 2002). The initial part of the research was quantitative in nature, it involved surveying MSMEs for the purpose of identifying and collecting statistically significant data. The subsequent part of the research was qualitative and encompassed conducting interviews to further gain deeper insight into the factors identified to be affecting e-procurement adoption among MSMEs trading in groceries in Lusaka district.

3.2 Study Area and Sampling Procedure

The study was conducted in Lusaka district. There are several densely populated urban areas within Lusaka district that are home to MSMEs dotted across the district. The target population consisted of MSMEs trading in groceries in Lusaka district. Respondents included either owners of the businesses, managers or other key procurement staff. To obtain a sample size that accurately represented the population of selected MSMEs, sampling was two phased. For the quantitative portion of the study, Yamane's (1967) formula was used to calculate the sample size. A sample size of 375 respondents was derived from a target population of 6000 at a 95% confidence level and a 5% margin of error. The final dataset consisted of 348 respondents, wherefrom interviews were conducted until a saturation point was reached at 25 participants. Stratified sampling was initially used to derive a study sample from the target population for the quantitative portion of the study, after which simple random sampling was used to select respondents from each stratum of MSMEs. Additionally, purposive sampling was used to select the study sample for the qualitative portion of the research. Here the selection conditions were MSMEs with either; high adoption levels, low or no adoption and those showing unexpected statistical patterns.

3.3 Data Collection Methods

Primary data were collected using structured questionnaires and semi-structured interviews, while secondary data were obtained from policy reports on MSME business process digitization and empirical literature relating to e-procurement adoption. The structured questionnaires containing closed-ended variables measured using Likert scales for statistical analysis facilitated collection of quantitative data on factors affecting e-procurement adoption among

MSMEs trading in groceries in Lusaka district. The interviews collected qualitative data which provided an opportunity for participants from purposively sampled MSMEs to provide deeper insights and contextual perspectives on the key factors identified during quantitative data capture.

3.4 Data Analysis

Quantitative data were coded and analyzed using descriptive statistics, including frequencies, percentages, means and standard deviations, to identify factors affecting e-procurement adoption among MSMEs trading in groceries in Lusaka district. Qualitative data were analyzed using thematic analysis, where responses were coded and grouped into themes related to vendor support, operational advantages, usability challenges, security and fraud concerns, infrastructure instability, resistance to change and government and supplier readiness. Once analysis was concluded, integration of quantitative and qualitative findings was done to compare statistical results with thematic insights. This facilitated identification of contextual factors affecting e-procurement adoption unique to MSMEs trading in groceries in Lusaka district.

3.5 Ethical Considerations

Ethical clearance from The University of Zambia Research and Ethics Committee was sought before proceeding to engage respondents to participate in the study. They were informed of the academic nature of the study and procedures complied with standard ethical guidelines for research involving human participants. To ensure ethical concerns were successfully addressed, the researcher was guided by the recommendations of Creswell relating to right of refusal and protection of respondents' privacy (Creswell, 2014). Respondents were assured of anonymity; participation was voluntary and based on informed consent. This was done to ensure they did not feel coerced to take part in the study for accurate data to be obtained.

4 Findings

4.1 Demographic Characteristics of Respondents

The study analyzed valid responses from 348 respondents. The demographic profile provided insight into the socio-economic context within which grocery trading MSMEs in Lusaka operate.

Table 1: Summary of Respondent Demographic Characteristics (N = 348)

Variable	Category	Frequency (n)	Percentage (%)
Level of Education	Secondary	179	51.4
	Certificate/Diploma	95	27.3
	Bachelor's Degree	59	17.0
	Primary	10	2.9
	Postgraduate	5	1.4
Age Distribution	Below 25 years	15	4.3
	25–30 years	93	26.7
	31–40 years	135	38.8
	41–49 years	78	22.4
	50–55 years	11	3.2
	Above 55 years	11	3.2
Number of Employees	Below 10	264	75.9
	10–50	57	16.4
	51–100	21	6.0
	Above 100	6	1.7

Source: Author (2025)

The demographic profile indicates that the study sample was predominantly composed of micro-enterprise respondents and individuals within the economically active age bracket. A majority of respondents (51.4%) possessed secondary-level education, with a substantial proportion holding post-secondary qualifications. 44.3% combined certificate, diploma and degree holders, suggesting a moderate to high baseline capacity to understand and engage with e-procurement systems. Age distribution was concentrated within the 25 to 40 years range (65.5%), reflecting a workforce largely in early to mid-career stages, which is typically associated with greater exposure to evolving procurement practices and digital tools. In terms of firm size, most respondents (75.9%) were drawn from enterprises with fewer than 10 employees, confirming the dominance of micro enterprises within the sample, while small and medium enterprises constituted a relatively smaller proportion. Collectively, these characteristics suggest that the findings are largely representative of micro and small businesses operated by moderately educated and economically active individuals, which has important implications for interpreting e-procurement adoption dynamics within the resource-constrained grocery trading business environment.

4.2 Status of E-Procurement Adoption among MSMEs Trading in Groceries in Lusaka District

Table 2. Status of e-procurement adoption

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	*Not at all*	85	24.4	24.4	24.4
	Less extent	60	17.2	17.2	41.7
	Moderate extent	137	39.4	39.4	81.0
	Large extent	61	17.5	17.5	98.6
	Very large Extent	5	1.4	1.4	100.0
	Total	348	100.0	100.0	

Source: Author (2025)

The findings indicate that e-procurement adoption among MSMEs is largely partial rather than comprehensive. The majority of firms (39.4%) reported moderate adoption, suggesting that while e-procurement systems are being integrated into procurement processes, they are not yet the primary mode of

operation. A notable proportion of businesses remain at the lower end of adoption, with 24.4% not using e-procurement at all and 17.2% using it to a limited extent, while only a small, combined fraction of 18.9% had adopted it extensively. Overall, this distribution reflects a transitional adoption landscape, where most MSMEs are still in the early to intermediate stages of digital procurement uptake rather than full-scale implementation.

4.3 Reliability Testing

Table 3: Reliability Testing Results

Construct	Number of Items	Cronbach's Alpha (α)	Interpretation
Technological Factors	6	0.812	Reliable
Organizational Factors	6	0.784	Reliable
Environmental Factors	6	0.768	Reliable
Extent of E-Procurement Adoption	1 (composite scale)	0.731	Reliable
Overall Scale	18	0.846	Highly Reliable

Source: Author (2025)

The reliability analysis confirmed that the measurement instrument used in the study was robust and internally consistent, with all constructs exceeding the acceptable Cronbach's Alpha threshold of 0.70. Technological factors (α = 0.812), organizational factors (α = 0.784) and environmental factors (α = 0.768) all demonstrated acceptable to strong reliability, indicating that the grouped variables consistently captured the key dimensions influencing e-procurement adoption. The dependent variable: extent of e-procurement adoption also showed satisfactory reliability (α = 0.731), despite being measured as a composite scale. The overall scale achieved a high reliability coefficient (α = 0.846), confirming strong internal consistency across all 18 items. Collectively, these results validate the measurement framework grounded in the TOE model supported by TAM and DOI perspectives and indicate that the instrument was suitable for subsequent statistical analysis of factors affecting e-procurement adoption among MSMEs.

4.4 Key Factors Affecting E-Procurement Adoption among MSMEs Trading in Groceries in Lusaka District

Table 4: Descriptive Statistics-factors influencing e-procurement adoption (N = 348)

Factors	N	Minimum	Maximum	Mean	Std. Deviation
Complexity and ease of usefulness of e-procurement systems.	348	1	5	3.78	0.969
Technological support from system vendors.	348	1	5	3.28	1.128
Relative advantage on e-procurement systems.	348	1	5	3.39	1.012
Compatibility of e-procurement with other systems.	348	1	5	3.36	1.036
Security threats and confidentiality of information in e-procurement systems.	348	1	5	3.15	1.062
Availability of necessary digital infrastructure for e-procurement adoption.	348	1	5	3.22	1.238
Resistance to change from traditional procurement to e-procurement systems and low levels of trust in e-procurement systems.	348	1	5	3.27	1.268
Size and scale of the organization.	348	1	5	3.34	1.168
Owner's attributes (age, gender, education level, commitment) towards ICT system usage.	348	1	5	3.30	1.206
Lack of exposure to ICT trainings.	348	1	5	2.81	1.358
Usability of e-procurement system within the business.	348	1	5	4.06	1.114
No alignment with long-term business strategy.	348	1	5	3.37	1.258
Limited ownership of smart gadgets and ICT budget allocation by top management for e-procurement.	348	1	5	2.99	1.318
Supply chain disruptions when there are internet disruptions.	348	1	5	3.34	1.275
Availability of affordable solutions and technical support.	348	1	5	3.34	1.104
The degree to which competitors are adopting e-procurement.	348	1	5	3.91	1.177
Supplier readiness and preference for digital transactions.	348	1	5	3.24	1.150
Government support and policies on e-procurement adoption.	348	1	5	3.24	1.072
Valid N (listwise)	348				

Source: Author (2025)

The descriptive findings indicate that e-procurement adoption among MSMEs is shaped by a balance of enabling and constraining factors. Usability of e-procurement systems (M = 4.06) and growing competitive pressure (M = 3.91) emerged as the strongest enablers, suggesting that MSMEs generally perceive these systems as functional and are influenced by industry trends toward digital procurement. Ease of use and perceived usefulness were also rated positively, reinforcing this outlook. However, key barriers persist, notably limited exposure to ICT training (M = 2.81) and financial constraints related to device ownership and ICT investment (M = 2.99), which point to capability and resource gaps. Additional moderating factors include resistance to change, security concerns and infrastructure limitations, all of which were rated at moderate levels, indicating their continued but not dominant influence. The relatively high variability across responses further suggests heterogeneous readiness among MSMEs, with some firms well-positioned for adoption while others face significant challenges. Overall, the findings reflect a transitional environment in which e-procurement uptake is supported by perceived benefits and market dynamics but constrained by skills, resource limitations and organizational inertia.

4.5 Regression Analysis

Table 5. ANOVA Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	261.099	18	14.506	32.409	<.001[b]
	Residual	147.254	329	.448		
	Total	408.353	347			

a. Dependent variable: extent of e-procurement adoption

Source: Author (2025)

The regression analysis results indicate that the model provides a strong and statistically significant explanation of e-procurement adoption among MSMEs. The ANOVA results show that the independent variables collectively account for a substantial proportion of the variation in adoption (Regression SS = 261.099 out of Total SS = 408.353), while the relatively smaller residual variation suggests good model fit. The high F-statistic (F = 32.409, p < .001) confirms that the model is significantly more predictive than a null model, demonstrating that the included factors jointly have a meaningful influence on adoption levels. Overall, these findings validate the robustness and adequacy of the regression model, supporting its use for interpreting the individual effects of the predictors on e-procurement adoption.

4.6 Interpretation of Coefficients

Significant Predictors

Table 6: Significant predictors (p < 0.05)

Variable	B (Coefficient)	Beta (Standardized)	T-Value	Sig. (P-Value)
Technological support from system vendors	0.255	0.265	6.113	0.000
Relative advantage of e-procurement systems	0.279	0.260	3.722	0.000
Security threats and confidentiality concerns	-0.209	-0.204	-4.855	0.000
Resistance to change and trust issues	-0.292	-0.342	-7.388	0.000
Availability of necessary digital infrastructure	-0.112	-0.128	-2.133	0.034
Usability of e-procurement system within the business	-0.386	-0.396	-9.896	0.000

Source: Author (2025)

The multiple regression results indicate that all six predictors significantly influence e-procurement adoption among MSMEs, with both enabling and inhibiting effects observed. Positive drivers include technological support from vendors ($\beta = 0.265$) and perceived relative advantage ($\beta = 0.260$), confirming that strong vendor assistance and clear operational benefits enhance adoption. Conversely, several factors negatively impact adoption, with usability challenges emerging as the strongest constraint ($\beta = -0.396$), followed by resistance to change and trust issues ($\beta = -0.342$), highlighting the critical role of system design and behavioural readiness. Security concerns ($\beta = -0.204$) and infrastructure limitations ($\beta = -0.128$) also significantly reduce adoption, though to a lesser extent. Overall, the findings suggest that while practical benefits and external support encourage uptake, adoption is most strongly hindered by usability barriers and organizational resistance, indicating that improving system usability and managing change are pivotal to advancing e-procurement adoption among MSMEs.

Non-Significant Predictors

Table 7: Non-significant predictors (p > 0.05)

Variable	P-value	Decision ($\alpha = 0.05$)
Government support and policies	0.694	Not Significant
Supplier readiness for digital transactions	0.613	Not Significant
Lack of ICT training exposure	0.569	Not Significant
Compatibility with other systems	0.324	Not Significant
Owner attributes	0.220	Not Significant

Source: Author (2025)

The regression results indicate that several factors traditionally associated with technology adoption did not significantly influence e-procurement uptake among MSMEs, as all variables recorded p-values above 0.05. Specifically, government support and policies (p = 0.694) and supplier readiness (p = 0.613) had no meaningful impact, suggesting that adoption decisions are largely independent of external environmental pressures. Similarly, lack of ICT training exposure (p = 0.569) and system compatibility (p = 0.324) were not significant, implying that MSMEs either rely on intuitive systems or operate within simplified technological environments that reduce the need for formal training and complex integration. Additionally, owner-manager attributes (p = 0.220) were found to be insignificant, indicating that demographic characteristics do not materially shape adoption behaviour. Overall, these findings suggest that e-procurement adoption among MSMEs is primarily driven by internal operational and system-related factors rather than external influences, technical compatibility concerns, or individual characteristics.

4.7 Thematic Findings

Thematic analysis guided by the TOE framework was employed to highlight and analyze key findings. The analysis yielded several themes that explained the behavioral, technological and contextual factors affecting e-procurement adoption among MSMEs in the grocery trading sector in Lusaka district.

Vendor Support as a Critical Enabler

Vendor support emerged as a central enabler of e-procurement adoption among MSMEs, strongly supported by the regression results ($\beta = 0.265$, p < .001). Across interviews, respondents consistently emphasized the importance of vendor responsiveness, technical assistance and training in sustaining system usage. For many MSMEs, particularly micro and small enterprises vendors effectively functioned as external ICT support, compensating for limited in-house technical expertise. A small enterprise respondent (Respondent 7) noted, "When the system fails, the vendor responds without delay and that gives us confidence." This illustrates how vendor responsiveness reduces perceived operational risk and strengthens trust in digital systems.

Similarly, a micro enterprise respondent (Respondent 3) stated, "Without the supplier's technical team, we would have stopped using the system a long time ago." This highlights a dependency dynamic, where continued system usage is contingent on vendor support. Structured training was also identified as critical. A medium enterprise respondent (Respondent 18) explained, "Training sessions from the vendor make it easier for my staff to use the e-procurement system." These findings suggest that vendor-led capacity building enhances user competence, reduces resistance to change and facilitates sustained adoption. Demonstrating that vendor support plays a pivotal role in reducing perceived complexity, building confidence and bridging ICT capability gaps within MSMEs.

Perceived Operational Advantages as Adoption Drivers

The second theme highlights that MSMEs adopt e-procurement systems primarily due to clear operational benefits, consistent with the relative advantage construct ($\beta = 0.260$). Respondents reported significant improvements in procurement efficiency, transparency and inventory management following adoption. A medium enterprise respondent (Respondent 21) stated, "We can now track orders and payments to suppliers properly." This reflects enhanced accountability and process transparency compared to traditional procurement methods. A small enterprise respondent (Respondent 11) added, "E-procurement has reduced the unnecessary paperwork and saves time." This indicates direct productivity gains resulting from process automation. Improved inventory planning also emerged as a key benefit. A small enterprise respondent (Respondent 9) noted, "Planning for buying stock for the shop is now much easier." This is particularly significant in the grocery sector, where efficient stock management is critical due to high turnover and perishability. Collectively, these findings suggest that MSMEs are motivated by tangible performance improvements. Adoption is therefore pragmatic and outcome-driven, occurring when e-procurement systems demonstrably outperform traditional procurement methods.

Usability Challenges as a Primary Barrier

Usability challenges were identified as the most significant barrier to adoption, supported by a strong negative effect ($\beta = -0.396$). Respondents frequently described e-procurement systems as complex, inefficient and poorly aligned with their operational workflows. A medium enterprise respondent (Respondent 16) observed, "These e-procurement systems are confusing to use for older staff." This highlights generational disparities in digital literacy, which slow system uptake. A small enterprise respondent (Respondent 10) stated, "Some functions in the system require too many steps." This suggests inefficiencies in system design that undermine usability and negate expected efficiency gains. Performance issues further exacerbated these challenges. A micro enterprise respondent (Respondent 2) explained, "When the system is slow, we go back to physical visits, calls or WhatsApp orders." This demonstrates how usability limitations lead to system avoidance and the persistence of informal procurement channels. These findings indicate that current e-procurement platforms are insufficiently tailored to MSME needs, resulting in partial adoption and hybrid procurement practices rather than full digital integration.

Security and Fraud Concerns as Psychological Barriers

Security concerns emerged as a significant psychological barrier to adoption ($\beta = -0.204$), particularly among micro enterprises. Respondents expressed fears related to cybersecurity threats, financial loss and lack of control over digital transactions. A micro enterprise respondent (Respondent 5) stated, "We fear being hacked and losing everything." This reflects heightened anxiety driven by limited awareness of system security measures. A small enterprise respondent (Respondent 13) added, "Online payments are risky." This indicates mistrust in digital financial systems and concerns about transaction security. Similarly, a micro enterprise respondent (Respondent 1) noted, "Cash transactions feel safer." This highlights a preference for tangible and familiar transaction methods, which are perceived as more reliable. These findings suggest that perceived risks often outweigh perceived benefits, thereby constraining adoption despite acknowledged efficiencies. Addressing this barrier requires both technical safeguards and trust-building initiatives.

Infrastructure Instability and System Reliability

Infrastructure-related challenges, while statistically weaker ($\beta = -0.128$), were found to significantly affect the consistency of system usage. Issues such as unreliable electricity supply and high internet costs undermine the operational reliability of e-procurement systems. A small enterprise respondent (Respondent 8) explained, "When ZESCO power goes everything stops." This highlights the dependence of digital systems on stable electricity. A micro enterprise respondent (Respondent 4) stated, "Internet bundles are expensive." This reflects cost constraints that limit sustained system use. Network instability also contributed to inefficiencies. A medium enterprise respondent (Respondent 20) noted, "Network problems delay orders." These disruptions reduce system reliability and encourage MSMEs to revert to traditional procurement methods. Although infrastructure challenges did not completely prevent adoption, they contribute to irregular usage patterns and reinforce reliance on conventional procurement as a backup strategy.

Resistance to Change as a Behavioural Constraint

Resistance to change emerged as a significant behavioural barrier ($\beta = -0.342$), rooted in organizational culture and entrenched procurement practices. Respondents indicated a strong preference for familiar and informal procurement methods. A micro enterprise respondent (Respondent 6) stated, "We are used to calling suppliers directly to make orders." This reflects deeply embedded practices that are perceived as efficient and convenient. A small enterprise respondent (Respondent 12) noted, "My workers don't trust online procurement systems." This highlights internal skepticism and lack of confidence in digital systems. Similarly, a medium enterprise respondent (Respondent 17) explained, "Traditional ways of procurement are more comfortable." This underscores the role of familiarity and comfort in shaping resistance to change. These findings emphasize that adoption barriers are not solely technical but also behavioural. Overcoming resistance may require targeted change management strategies, including user engagement, gradual implementation and continuous training.

Limited Influence of External Environment Factors

External factors such as government policy and supplier readiness were found to have minimal influence on adoption decisions, consistent with their statistical insignificance in the regression model. MSMEs demonstrated a high degree of autonomy in determining procurement practices. A small enterprise respondent (Respondent 14) stated, "Government does not affect how we buy stock." This suggests limited policy visibility or enforcement. Similarly, a medium enterprise respondent (Respondent 22) noted, "Suppliers follow whatever procurement method we use." This indicates that suppliers adapt to MSME preferences rather than driving adoption. These findings implied that e-procurement adoption is primarily internally driven, shaped by firm-level considerations rather than external pressures.

4.8 Mixed Methods Integration

Table 8: Mixed Methods Integration- Joint Display Table

Quantitative Result	Qualitative Theme	Integrated Insight
Vendor support positive	Vendor support critical	External expertise drove e-procurement adoption.
Relative advantage positive	Efficiency benefits	E-procurement adoption was driven by utility.
Usability negative	Complexity barriers	Poor usability reduced e-procurement adoption.
Resistance negative	Cultural inertia	Behavioural barriers to e-procurement were dominant.
Security concerns negative	Fear of fraud	Trust issues limited e-procurement adoption.
Infrastructure negative	System disruptions	Physical barriers relating to e-procurement adoption were secondary.
Non-significant external factors	Limited external influence	Internal drivers dominated e-procurement adoption.

Source: Author (2025)

The integrated findings from the sequential explanatory mixed-methods design reveal a consistent pattern in which both quantitative and qualitative results converge to show that e-procurement adoption among MSMEs is primarily driven by operational benefits and vendor support, while being constrained by usability challenges, resistance to change, security concerns and to a lesser extent, infrastructure limitations. Vendor support and perceived relative advantage emerged as key enablers, with qualitative insights reinforcing the critical role of external technical expertise due to limited internal ICT capacity. At the same time, behavioural and system-related barriers particularly poor usability, entrenched traditional practices and fear of fraud significantly hinder full adoption, often resulting in partial or cautious system use. External factors such as government policy and supplier readiness were found to have minimal influence, highlighting that adoption decisions are largely internally driven. Overall, the integrated evidence underscores that e-procurement adoption is shaped more by functional effectiveness and organizational readiness than by external or demographic factors, thereby reinforcing and extending the TOE framework in this context.

4.9 Discussion of Findings

Status of E-Procurement Adoption among MSMEs Trading in Groceries in Lusaka District.

The findings indicate that e-procurement adoption among MSMEs in Lusaka's grocery trading sector remains moderate and uneven with a mean score of 2.54, reflecting a predominance of partial adoption and continued reliance on hybrid procurement practices. While 39.4% of firms reported moderate adoption, a substantial proportion had either not adopted or only minimally adopted e-procurement, indicating that most MSMEs are still in the early to transitional stages of digital integration. This pattern aligns with Makali (2015) and Waithaka (2021), who similarly observed slow and incomplete adoption in comparable contexts, particularly within developing economies. From a theoretical perspective, these findings support the DOI theory (Rogers, 2003), which posits that innovation adoption occurs progressively across adopter categories, with most MSMEs in this study falling within the early adopters and early majority stages. Furthermore, the findings resonate with Perez (2022), emphasizing that adoption is influenced not only by technological factors but also by organizational readiness and managerial dynamics, reinforcing that e-procurement uptake is shaped by a combination of behavioural, structural and technological considerations.

Key Factors Affecting E-Procurement Adoption among MSMEs Trading in Groceries in Lusaka District.

Technological factors emerged as central determinants of e-procurement adoption among MSMEs in Lusaka's grocery sector. Perceived relative advantage was found to positively influence adoption, with MSMEs more likely to adopt e-procurement when it was associated with reduced paperwork, improved inventory management and greater procurement efficiency. This finding resonates with Duarte (2015) and Toktas-Palut (2014), and is also consistent with the TAM, which underscores perceived usefulness as a primary driver of technology adoption, suggesting that MSMEs adopt e-procurement when clear operational benefits are evident. Similarly, vendor support was a strong enabling factor, as MSMEs relied heavily on external technical assistance and training due to limited internal ICT capacity, a result that corroborates Chadra & Kumar (2015), Ramdani et al. (2013) and Jama et al. (2024) and aligns with the TOE framework's emphasis on external technological resources supporting adoption. In contrast, usability was negatively associated with adoption, indicating that perceived system complexity discouraged uptake, partially contradicting the TAM's assumption of ease of use while aligning with Mukulungui (2016); this also suggests that system design misalignment with MSME workflows limits adoption, thereby extending the TAM in context-specific ways. Security concerns also significantly reduced adoption, as fears of cyber threats and financial loss constrained full system use, consistent with Osir (2016), Molinillo & Japutra (2017), and Jama et al. (2024), and reinforcing TAM extensions that incorporate perceived risk as a determinant of acceptance. Finally, digital infrastructure showed a weaker but still negative influence, where unreliable internet and electricity supply disrupted consistent usage; this supports the TOE framework's emphasis on infrastructural readiness and aligns with Toktas-Palut (2014) and Mwale and Mwanza (2025), confirming that while infrastructure is not the strongest driver, it remains a necessary enabling condition for sustained e-procurement adoption.

Organizational factors were found to play a significant role in shaping e-procurement adoption among MSMEs, consistent with the TOE framework, with resistance to change emerging as a dominant barrier. Strong preferences for traditional procurement methods driven by familiarity and trust significantly hindered adoption, a finding that aligns with Altayyar (2017) and Husin (2019) and is also explained by the DOI theory as resistance stemming from uncertainty and entrenched habits. In contrast, owner-manager characteristics and ICT training were found to be statistically insignificant, diverging from studies such as Perez (2022), Gitonga et al. (2020), and Oliveira & Martins (2010), suggesting that adoption in this context is more operationally driven than dependent on individual attributes or formal skills. This may reflect increasing informal digital literacy and the availability of user-friendly systems that reduce reliance on training. Additionally, while firm size and resource availability were not dominant predictors, they still influenced adoption patterns, particularly among micro enterprises, a finding that resonates with Manuel & Duarte (2015), who emphasized

the role of resource capacity in facilitating innovation uptake. Overall, these results highlight that organizational culture and readiness, rather than individual characteristics are the primary internal determinants of e-procurement adoption in the context of MSMEs trading in groceries in Lusaka district.

Environmental factors were found to have limited influence on e-procurement adoption among MSMEs in Lusaka's grocery trading sector, reinforcing the view consistent with the TOE framework which affirms that adoption is primarily driven by internal organizational and technological factors. Although competitive pressure recorded a relatively high mean, indicating awareness of industry trends, its lack of statistical significance suggests that awareness does not necessarily translate into adoption. These findings partially align with Lai (2017) and Kabanda et al. (2019). Similarly, government support and policy were not significant, contradicting Mwale and Mutono-Mwanza (2025) and Altayyar (2017) which implied low policy visibility or weak enforcement in this context. Supplier readiness was also insignificant, diverging from Duarte (2015) and Chong & Olesen (2017), indicating that suppliers tend to adapt to MSMEs' preferred procurement methods rather than drive innovation adoption. Overall, these findings suggest that external pressures play a minimal role, and that MSMEs retain autonomy in adoption decisions, with internal readiness and perceived value outweighing environmental influences.

5 Conclusions and Recommendations

5.1 Contributions to Knowledge

The findings carry important practical and theoretical implications for advancing e-procurement adoption among MSMEs in the grocery trading sector. Practically, system providers must prioritize user-centric, locally tailored solutions with simplified processes, faster system performance and strong vendor support through continuous training, as usability and technical assistance are critical adoption enablers. MSMEs, in turn, need to adopt a strategic and phased approach to digital transformation by investing in staff training, leveraging vendor expertise and fostering an innovation-oriented culture to overcome resistance to change. Policymakers are required to strengthen the enabling environment through targeted incentives, awareness campaigns, cybersecurity education and improvements in digital infrastructure and internet affordability. Theoretically, the findings validate the TOE framework but suggest the need for context-specific weighting, as technological and organizational factors dominate over environmental influences. The results also extend the DOI theory by emphasizing compatibility with entrenched traditional practices as a key adoption determinant in informal MSME settings. Furthermore, the findings refine the TAM by demonstrating that while perceived usefulness remains important, ease of use is more critical in this context, positioning system simplicity as a primary driver of e-procurement adoption.

5.2 Limitations and Future Research

The study was constrained by several factors. The focus on MSMEs trading in groceries within Lusaka district limited generalizability to other sectors and contexts. Additionally, the cross-sectional design only captured a snapshot in time, potentially overlooking evolving trends influenced by regulatory and technological changes. Furthermore, reliance on respondents' perceptions for thematic analysis may have introduced subjectivity. In light of these limitations, future research should expand the scope by conducting comparative studies across different sectors to assess the consistency of identified factors and adopt longitudinal designs to better understand how e-procurement adoption evolves over time. Further studies could also explore the role of demographic variables such as age and education, as well as the influence of leadership styles and managerial support, to provide a more comprehensive understanding of the drivers of e-procurement adoption among MSMEs.

5.3 Recommendations

The study recommends a multi-level approach to enhance e-procurement adoption among MSMEs, focusing on organizational, technological and environmental interventions. At the organizational level, MSMEs should invest in user-friendly systems, strengthen partnerships with supportive vendors and implement continuous ICT training while fostering a culture of innovation through effective change management and incentive-driven adoption. Technologically, system providers should prioritize simplified, mobile-friendly and low-bandwidth platforms designed with user input, alongside integrating feedback mechanisms, offline capabilities and robust cybersecurity features such as encryption and secure payment systems to build trust and usability. From an environmental perspective, policymakers should create an enabling ecosystem through incentives, improved digital infrastructure and targeted digital literacy programs, while industry associations should promote collaboration, knowledge sharing and collective bargaining to reduce costs and accelerate adoption. Collectively, these recommendations emphasize improving system usability, strengthening capacity and enhancing the broader support environment to drive sustainable e-procurement uptake.

5.4 Conclusions

The study concludes that e-procurement adoption among MSMEs trading in groceries in Lusaka district is shaped by a complex interplay of enabling and constraining factors, where vendor support and perceived operational benefits act as key drivers, while organizational culture, resistance to change and usability challenges significantly hinder full adoption. The limited influence of environmental factors further indicates that external interventions such as policy and ecosystem support have not fully translated into practice at the MSME level, highlighting the need for solutions that are closely aligned with the operational realities and capacities of these businesses. While some findings align with existing literature, others reveal context-specific nuances, contributing to broader empirical discourse and underscoring the importance of localized approaches. Overall, the study emphasizes that achieving full e-procurement adoption requires a holistic strategy that addresses both technical and behavioural dimensions through enhanced digital literacy, targeted support mechanisms and the promotion of an innovation-oriented organizational culture.

Declaration of Competing Interests

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Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

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