Outcomes of E-Commerce Adoption on Enhancing Small and Medium Enterprises Performance in Tanzania: A Case of Ilala Municipal Council

Humphrey Elisonguo Kisanga
College of Business Education, Dar es Salaam, Tanzania

Abstract:
The study was carried out to examine the outcomes of e-commerce adoption on enhancing small and medium enterprises performance in Tanzania, a case study of Ilala Municipal Council. We investigated SMEs owners and operators using online surveys. It was guided by three independent variables, namely e-commerce information quality, system quality and service quality as independent variables while e-commerce use and user satisfaction were mediating variables. The study used cross-sectional survey research design, adopted a positivist philosophy, a deductive approach, a quantitative mono-method, and a survey strategy. On examining the influence of e-commerce information quality on enhancing SMEs performance, the study has found that there is insignificant direct influence of e-commerce information quality on e-commerce use. The study has found that e-commerce use has a positive significant influence on performance of SMEs. The study also has found that e-commerce information quality has a positive significant influence on e-commerce user satisfaction. Furthermore, the study has found e-commerce user satisfaction has a significant positive influence on performance of SMEs. On examining the influence of e-commerce system quality on enhancing performance of SMEs, the study has found e-commerce system quality has a positive significant influence on e-commerce use. The study has found e-commerce use has a significant positive mediating influence on performance of SMEs. The study also found e-commerce system quality has a positive significant influence on e-commerce user satisfaction. Additionally, the study has found e-commerce user satisfaction has a significant positive influence on performance of SMEs. On examine the influence of E-commerce service quality on enhancing SMEs performance, the study has found E-commerce service quality has a positive insignificant influence on E-commerce use. Additionally, the study has found e-commerce user satisfaction has a significant positive influence on performance of SMEs. The study also found e-commerce service quality has a positive insignificant direct influence on e-commerce user satisfaction. On the other hand, the study has found that e-commerce user satisfaction has a positive significant influence on performance of SMEs. This is a comprehensive study conducted in Tanzania regarding the adoption of e-commerce, and factors influencing post-adoption of e-commerce improve SMEs performance.

Keywords: eCommerce, SMEs performance, Customers, Information system, Users, Tanzania

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Introduction

SMEs are considered to be the backbone of Tanzania's economy, contributing significantly to employment generation, poverty reduction and overall economic growth. In order to thrive and remain competitive, one significant factor that has emerged as a potential catalyst for SMEs’ growth and competitiveness is the utilization of e-commerce in Tanzania. E-commerce offers SMEs the opportunity to reach broader markets, streamline operations and improve customer experiences (Masele & Matama, 2020). The Tanzanian government has made substantial strides in fostering a favorable e-commerce ecosystem by implementing an adapting ICT Policy and augmenting digital accessibility through expanded Internet connectivity (Shayo & Chindengwike, 2021).

Despite the potential growth of e-commerce in Tanzania and its benefits for SMEs’ competitiveness there is a critical knowledge gap in the existing literature regarding its influence on SMEs’ performance, particularly within the context of the Ilala Municipal Council in Tanzania. The available research has not adequately explored the aspects of e-commerce that can have a profound impact on SMEs operating within this municipal council. Notably, Kabanda and Brown (2015) conducted a study to identify enablers and barriers to e-commerce adoption in Tanzanian SMEs. The study unearthed contextual understanding of e-commerce and the challenges faced by Tanzanian SMEs. Pasape (2022) conducted a study on the impact of information and communication technology (ICT) in supporting business performance of incubated small supporting business enterprises (SBEs) in Tanzania. The findings indicated that the use of ICT positively influenced the performance of SBEs, particularly those incubated at the Tanzania Engineering and Manufacturing Development Organization incubation center.

Theoretical Framework and Research Model

The study adopted the updated Information System Success (ISS) model by Delone and Mclean (2016). This theory has been widely applied across domains like e-commerce, healthcare, online learning, and customer relationship management to gauge the efficacy of information systems (Rahayu & Day, 2017).

E-commerce Information Quality and SMEs’ Performance

This study explores the impact of e-commerce information quality on SME performance, focusing on accuracy, completeness, and timeliness. Drawing on established literature, including studies by Putri and Pujani (2019), Bahaddad et al (2019), Ali et al (2018), Al-Okaily et al (2022), and Hardiyanto and Firdaus (2021), it hypothesizes a positive relationship between information quality, system use, user satisfaction, and net benefits in SMEs.

E-commerce System Quality and Performance of SME

This study examines the impact of system quality on SME performance, focusing on ease of use, flexibility, reliability, ease of learning, sophistication, and response time. Despite varying findings in prior research, including studies by Ramadhanti and Slamet (2020), and Alawi et al (2018), which found no significant influence of system quality on use, user satisfaction, and net benefits, and Widiastuti et al (2019), which observed a positive relationship with user satisfaction but not net benefits.

E-commerce Service Quality and Performance of SMEs

Materials and Methods

This study investigated the outcome of e-commerce adoption on the SMEs performance. It examined three independent variables: e-commerce information quality, system quality, and service quality, along with two mediating variables e-commerce use and user satisfaction. The research employed a cross-sectional survey design, rooted in a positivist philosophy and deductive approach, using a quantitative mono-method and survey strategy. The population consisted of 25,860 SMEs, from which a sample of 385 SMEs was randomly selected. Primary data collection utilized closed-ended questionnaires with responses measured on a five-point Likert scale.

Questionnaire Development

This was a quantitative design using a questionnaire based on the updated DeLone and McLean ISS Model (2016) was employed to examine the key determinants comprise of system quality, information, quality and service quality while use and user satisfaction were mediating variables and Organization impact (performance) as the independent variables.

The questionnaire was developed based on the existing literature as outlined below. We measured system quality by examining the Tangibility, Reliability, Assurance and Empathy (Widiastuti et al (2019). The study measured information quality by examining the Completeness, Timeliness Relevance, Accessibility and Consistency (Widiastuti et al (2019). Service quality was measured by observing the Flexibility, Learnability, Usability and Responsiveness (Widiastuti et al (2019). Use was measured by looking at the Frequency of Use, Transaction Volume Receiving order, Purchases completed (Widiastuti et al (2019)). We examined user satisfaction by Perceived Value for Money, Order Fulfillment, Product Information Accuracy, Order Tracking, (Widiastuti et al (2019)). We assessed the SME Performance by examining the Revenue Growth , increase customer base, Reduced costs, Supplier Relationship Management (Ramadhanti & Slamet (2020), Shayo & Chindengwike (2021)) .

Figure 1. Research model based on Delone and McLean (2003)
Source: DeLone and McLean (2003)
Validity and Reliability Tests
The study ensured questionnaire validity through input from 10 experts in Entrepreneurship and Information Systems, employing the Lawshe technique to assess construct relevance. A pre-test survey with 15 respondents further refined questionnaire clarity. Confirmatory Factor Analysis (CFA) established validity and reliability before hypothesis testing, ensuring constructs accurately represented by measurement items. Convergent validity, assessed through factor loadings and Average Variance Extracted (AVE), verified item representation of constructs. AVE values exceeding 0.5 indicated substantial variance capture, affirming construct validity. Factor loadings above 0.5 demonstrated significant contribution to constructs. Findings revealed high AVE values for e-commerce variables, indicating strong construct representation and substantial variance explanation. Factor loadings exceeding 0.5 for all indicators reinforced construct validity. Thus, the study's rigorous validation process, including expert input, pre-testing, and CFA, enhanced confidence in the reliability and validity of the collected data, ensuring robust conclusions regarding e-commerce variables and SME performance.

Convergent validity was assessed through factor loadings and Average Variance Extracted (AVE) tests. Factor loadings for each construct's indicators exceeded 0.5, indicating their substantial contribution to the underlying constructs. AVE values, ranging from 0.50 to 0.59, confirmed that each construct captured a significant proportion of the variance in the observed variables, further validating the measurement model's accuracy.

The study's findings, as indicated in Appendix I, demonstrated robust convergent validity across six variables: e-commerce use, e-commerce user satisfaction, e-commerce information quality, e-commerce service quality, e-commerce system quality, and performance of SMEs. Each construct exhibited AVE values and factor loadings above the accepted thresholds, signifying their reliability and validity in accurately measuring the intended phenomena.

Data Analysis Technique and Hypotheses Testing
In this study, the data analysis was conducted using Smart PLS Version 3, utilizing a Structural Equation Model (SEM). SEM provides a robust statistical technique that combines factor analysis and multiple regressions, also handling measurement errors and providing structure equation model that can be specified as follows, considering E-commerce information quality, system quality, and service quality as independent variables, user satisfaction of e-commerce as a moderating variable, and use as a mediator on the relationship between the independent variables and performance of SMEs:

Results
Profile of the Respondents
The study indicate that male dominance, with 62.1% participation. The 18-35 age bracket was the largest at 42.6%. Most participants had 4-6 years of e-commerce experience (55.8%). Almost half held a university degree (49.6%), and 41.3% reported an annual income between 5,000,000 and 100,000,000 TZS.

The study was guided by three specific objectives as indicated by independent variables, namely e-commerce information quality, system quality and service quality while e-commerce use and user satisfaction were considered as mediating variables as indicated by the results of the study in Table 2.
Table 1. Path Analysis Results for E-commerce Factors Influencing SME Performance and Satisfaction

<table>
<thead>
<tr>
<th>Variables</th>
<th>Original Sample</th>
<th>Sample Mean</th>
<th>Standard Deviation</th>
<th>T Statistics</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-commerce use &gt; SME Performance</td>
<td>0.391</td>
<td>0.392</td>
<td>0.044</td>
<td>8.993</td>
<td>0.000</td>
</tr>
<tr>
<td>E-commerce user satisfaction - &gt; SME Performance</td>
<td>0.420</td>
<td>0.419</td>
<td>0.040</td>
<td>10.470</td>
<td>0.000</td>
</tr>
<tr>
<td>E-commerce information quality - &gt; E-commerce use</td>
<td>-0.116</td>
<td>-0.116</td>
<td>0.077</td>
<td>1.511</td>
<td>0.131</td>
</tr>
<tr>
<td>E-commerce information quality - &gt; E-commerce user satisfaction</td>
<td>0.260</td>
<td>0.279</td>
<td>0.086</td>
<td>3.024</td>
<td>0.003</td>
</tr>
<tr>
<td>E-commerce system quality - &gt; E-commerce use</td>
<td>0.302</td>
<td>0.306</td>
<td>0.069</td>
<td>4.352</td>
<td>0.000</td>
</tr>
<tr>
<td>E-commerce system quality - &gt; E-commerce user satisfaction</td>
<td>0.195</td>
<td>0.185</td>
<td>0.078</td>
<td>2.498</td>
<td>0.013</td>
</tr>
<tr>
<td>E-commerce Service quality - &gt; E-commerce use</td>
<td>0.027</td>
<td>0.039</td>
<td>0.119</td>
<td>0.224</td>
<td>0.823</td>
</tr>
<tr>
<td>E-commerce Service quality - &gt; E-commerce user satisfaction</td>
<td>0.062</td>
<td>0.061</td>
<td>0.078</td>
<td>0.790</td>
<td>0.430</td>
</tr>
</tbody>
</table>

Source: Field data

E-commerce Information Quality and Performance of SMEs

To examine the influence of e-commerce information quality on enhancing SMEs performance in line with the developed and tested hypotheses. The findings of the study in Table 2 indicate that there is negative insignificant influence of e-commerce information quality on e-commerce use (B = -0.11, P-value > 0.05). Hence, the study rejects the hypothesis stating that, ‘e-commerce information quality has a direct influence on e-commerce use’. However, the findings in Table 2 reveal that e-commerce use has a positive significant influence on SMEs’ performance (B = 0.39, P-value < 0.05).

The findings in Table 2 indicate that E-commerce information quality has a positive significant influence on e-commerce user satisfaction (B= 0.260, P-value = <0.05). Hence, the study accepts the hypothesis stating that, ‘e-commerce information quality has a direct influence on e-commerce user satisfaction’. Furthermore, the study found that e-commerce user satisfaction has a significant positive influence on SMEs’ performance (B=42, P-value<0.05).

E-commerce System Quality and Performance of SMEs

To examine the influence of e-commerce system quality on enhancing performance of SMEs, in line with the developed and tested hypotheses. The findings in Table 2 indicate that e-commerce system quality has a positive significant influence on e-commerce use (B=30, P-value<0.05). Hence, the study fails to reject the hypothesis stating that, ‘e-commerce system quality has a direct influence on e-commerce use’.

Findings of the study in Table 2 indicate that e-commerce use has a significant positive mediating influence on performance of SMEs (B=39, P-value<0.05); since the study has found e-commerce system quality has a positive significant influence on e-commerce use, the study fails to reject the hypothesis stating that ‘commerce use mediates the relationship between e-commerce system quality and performance of SMEs.

Findings of the study in Table 2 indicate that e-commerce system quality has a positive significant influence on e-commerce user satisfaction (B=19, P-value<0.05). Hence, the study fails to reject the hypothesis stating that, ‘e-commerce system quality has a direct influence on e-commerce user satisfaction’.
Additionally, findings of the study in Table 2 indicate that e-commerce user satisfaction has a positive significant influence on performance of SMEs ($B=42$, $P\text{-value}<0.05$). Since the relationship between e-commerce system quality on e-commerce user satisfaction is significant, hence the study fails to reject the hypothesis stating that ‘e-commerce user satisfaction mediates the relationship between e-commerce system quality and performance of SMEs.

E-commerce Service Quality and Performance of SMEs

To examine the influence of e-commerce service quality on enhancing performance of SMEs in line with the developed and tested hypotheses. Findings of the study in Table 2 indicate that e-commerce service quality has a positive insignificant influence on e-commerce use ($B=0.027$, $P\text{-value}>0.05$). Hence, the study rejects the hypothesis stating that, ‘e-commerce service quality has direct influence on e-commerce use’. Additionally, the study findings in Table 2 indicate that e-commerce use has a positive statistical significance influence on performance of SMEs ($B=0.39$, $P\text{-value}=<0.05$). Since it has been has found that e-commerce service quality has no influence on e-commerce use, the study rejects the hypothesis stating that ‘e-commerce use mediates the relationship between e-commerce service quality and SMEs performance’.

The study also found that e-commerce service quality has a positive insignificant direct influence on e-commerce user satisfaction ($B=0.06$, $P\text{-value}>0.05$). Hence it rejected the hypothesis stating that, ‘e-commerce service quality has a direct influence on e-commerce user satisfaction’. On the other hand, the study findings in Table 2 indicate that e-commerce user satisfaction has a positive significant positive influence on performance of SMEs ($B=42$, $P\text{-value}<0.05$). Since the p-value for the relationship between e-commerce service quality and e-commerce user satisfaction is greater than the commonly used significance level of 0.05, the study rejects the hypothesis stating that ‘e-commerce user satisfaction mediates the relationship between e-commerce service quality and SMEs’ performance’.

Discussion

E-commerce Information Quality and Performance of SMEs

On examining the influence of e-commerce information quality on enhancing SMEs performance, the study has found that there is insignificant direct influence of e-commerce information quality on e-commerce use ($B = -0.11$, $P\text{-value} > 0.05$). Hence, the study rejects the hypothesis that, ‘e-commerce information quality has a direct influence on e-commerce use’. This implies that there is no indirect influence of e-commerce information quality on e-commerce use. However, the study has found that e-commerce use has a positive significant influence on performance of SMEs ($B = 0.39$, $P\text{-value} < 0.05$). Since the relationship between e-commerce information quality on e-commerce use is not significant, the study rejects the hypothesis stating that, ‘e-commerce use mediates the relationship between e-commerce information quality and performance of SMEs. Since the relationship between e-commerce information qualities on e-commerce use is not significant, it implies that e-commerce use does not mediate the relationship between e-commerce information quality and SMEs performance. Therefore, the study concludes that e-commerce information quality does not have indirect influence on e-commerce user satisfaction and SMEs performance.

The study also has found that e-commerce information quality has a positive significant influence on e-commerce user satisfaction ($B=0.260$, $p\text{-value} = <0.05$). Hence, the study accepts the hypothesis stating that, ‘e-commerce information quality has direct influence on e-commerce user satisfaction’. Furthermore, the study has found that e-commerce user satisfaction has a significant positive influence on SMEs’ performance ($B=42$, $p\text{-value}<0.05$). Since the relationship between e-commerce information quality on user satisfaction is significant, hence the study accepts the
hypothesis stating that ‘ecommerce user satisfaction mediates the relationship between e-commerce information quality and SMEs’ performance’. This implies an existence of mediating influence of user satisfaction on SMEs’ performance. Therefore, the study concluded that e-commerce information quality has a direct role in enhancing e-commerce user satisfaction among SMEs and user satisfaction mediates the influence of e-commerce information quality on SMEs’ performance.

The results of the present study are attributed by the interplay between system usage and user satisfaction. While e-commerce information quality was found to have no direct influence on e-commerce use and SMEs performance, its positive impact on e-commerce user satisfaction suggests that it indirectly contributes to SMEs’ success. When SMEs have access to high-quality information through e-commerce platforms, it enhances user satisfaction by enabling informed decision-making and facilitating a positive user experience. User satisfaction, in turn, was found to have a significant positive influence on SMEs’ performance. This indicates that satisfied users are more likely to engage in behaviors that benefit SMEs, such as repeat purchases, positive word-of-mouth recommendations and increased loyalty. The logic behind these findings is that satisfied users have a higher propensity to continue using the e-commerce platform, leading to sustained interactions and transactions that positively impact performance of SME. Therefore, although e-commerce information quality may not directly influence e-commerce use and performance of SMEs, its impact on user satisfaction indirectly influences performance of SMEs. The logic behind this is that high-quality information enhances user satisfaction, which subsequently drives positive user behaviors and ultimately contributes to improved performance of SMEs. In essence, the study highlights the importance of focusing on both e-commerce system usage and user satisfaction to achieve enhanced performance of SMEs in the e-commerce domain.

The study findings, which indicate no significant influence of e-commerce information quality on e-commerce use, are consistent with the findings of Angelina et al (2019). However, they differ from the results reported in the studies conducted by Ramadhanti and Slamet (2020), Chen et al (2019) and Mahendra et al (2020). These studies found that information quality indeed has a positive effect on the use of the system and net benefits.

Regarding the influence of information quality on e-commerce user satisfaction and net benefits, the present study aligns with the findings of Ramadhanti and Slamet (2020), Al-Okaily et al (2022), and Hardiyanto and Firdaus (2021). These studies also found that information quality had a significant indirect effect on e-commerce success, which was mediated by user satisfaction.

The study findings are partially in line with the Information System Success Theory regarding e-commerce use and user satisfaction. Regarding e-commerce use, the study found that e-commerce information quality does not have a direct or indirect influence on e-commerce use and performance of SMEs. These findings suggest that the quality of information alone may not be a significant factor in determining the extent to which SMEs utilize e-commerce platforms. It indicates that other factors such as system quality and service quality might play a more prominent role in influencing e-commerce use. Therefore, these specific findings do not fully align with the Information System Success Theory, which emphasizes the importance of information quality in determining system usage.

However, concerning e-commerce user satisfaction, the study found that e-commerce information quality has a positive direct and significant influence on e-commerce user satisfaction. These findings support the ISS Theory, which posits that high-quality information contributes to user satisfaction. The study demonstrates that when SMEs have access to high-quality information through e-commerce platforms, they enhance user satisfaction. Thus, these particular findings align with the ISS Theory.
E-commerce System Quality and Performance of SMEs

On examining the influence of e-commerce system quality on enhancing performance of SMEs, the study has found that e-commerce system quality has a positive significant influence on e-commerce use (B=30, P-value<0.05). Hence, the study failed to reject the hypothesis stating that, ‘e-commerce system quality has a direct influence on e-commerce use’. This implies that e-commerce system quality has a direct influence on e-commerce use. The study has found that e-commerce use has a significant positive mediating influence on performance of SMEs (B=39, p-value<0.05). Since the study has found e-commerce system quality has a positive significant influence on e-commerce use, it failed to reject the hypothesis stating that ‘commerce use mediates the relationship between e-commerce system quality and performance of SMEs. This implies that e-commerce use mediates the influence of e-commerce system quality on performance of SMEs.

The study also found that e-commerce system quality has a positive significant influence on e-commerce user satisfaction (B=19, p-value<0.05). Hence, the study failed to reject the hypothesis stating that, ‘e-commerce system quality has a direct influence on E-commerce user satisfaction’. This implies existence of direct influence of e-commerce system quality on e-commerce user satisfaction. Additionally, the study has found that e-commerce user satisfaction has a positive significant influence on performance of SMEs (B=42, p-value<0.05). Since the relationship between e-commerce system quality on e-commerce user satisfaction is significant, hence the study failed to reject the hypothesis stating that ‘e-commerce user satisfaction mediates the relationship between e-commerce system quality and performance of SMEs. This implies that there is sufficient evidence to support that e-commerce system quality influences e-commerce user satisfaction which in turn influences performance of SMEs.

These results can be attributed to the strong influence of e-commerce use and user satisfaction on the relationship between e-commerce system quality and performance of SMEs. The findings imply that higher system quality positively affects e-commerce use among SMEs, leading to increased utilization of e-commerce platforms. This increase in e-commerce use subsequently contributes to improved performance of SMEs. Moreover, the study reveals that e-commerce system quality directly influences user satisfaction, emphasizing the importance of well-functioning and high-quality systems in enhancing the satisfaction of SMEs using e-commerce. The significant relationship between e-commerce system quality and user satisfaction further strengthens the evidence supporting the hypothesis that system quality impacts user satisfaction. Ultimately, user satisfaction acts as a mediator between system quality and performance of SMEs, indicating the need for effective and reliable e-commerce systems to drive supporting business success.

The findings align with several previous studies. Putri and Pujani (2019), Bahaddad et al (2019), Ali et al (2018), Al-Okaily et al (2022), and Hardiyanto and Firdaus (2021) all confirmed a positive influence of information quality on use, user satisfaction, and net benefits. However, there are contrasting findings from other studies. Ramadhanti and Slamet (2020), and Alawi et al (2018) found no influence of system quality on use, user satisfaction and net benefits, contradicting the present study. On the other hand, Widiastuti et al (2019) discovered a positive relationship between system quality and user satisfaction but found no significant influence of system quality on net benefits.

The present study findings align with the information success theory when considering e-commerce use and user satisfaction. According to the Information System Success Theory, the quality of the information system positively influences user satisfaction, which in turn affects user behaviour and organizational
performance. In this study, the e-commerce system quality was found to have a direct positive influence on e-commerce use and user satisfaction. This supports the idea that a well-functioning and high-quality e-commerce system provides users with necessary tools and resources to effectively engage in e-commerce activities. The positive relationship between e-commerce use and performance of SMEs further reinforces the information success theory, as increased e-commerce use leads to improved organizational outcomes. Additionally, the mediating role of user satisfaction in the relationship between e-commerce system quality and performance of SMEs indicate that user satisfaction serves as a critical mechanism through which system quality impacts overall performance. These findings provide empirical evidence that aligns with the information success theory, highlighting the importance of system quality, user satisfaction, and their influence on e-commerce use and performance of SMEs.

E-commerce Service Quality and Performance of SMEs

On examine the influence of E-commerce service quality on enhancing SMEs performance, the study has found E-commerce service quality has a positive insignificant influence on E-commerce use (B=0.027, p-value>0.05). Hence, the study rejects the hypothesis stating that ‘e-commerce service quality has direct influence on e-commerce use’. This implies that e-commerce service quality has no influence on e-commerce use. Additionally, the study has found that e-commerce use has a positive statistical significance influence on performance of SMEs (B=0.39, p-value<0.05). Since the study has found that e-commerce service quality has no influence on e-commerce use, it rejects the hypothesis stating that ‘e-commerce use mediates the relationship between e-commerce service quality and performance of SMEs. This implies there is no mediation role of e-commerce use on the relationships between e-commerce service quality and performance of SMEs. Therefore, there is no indirect influence of e-commerce

service quality on performance of SMEs through e-commerce use.

The study also found that e-commerce service quality has a positive insignificant direct influence on e-commerce user satisfaction (B=0.06, p-value>0.05). Hence, the study rejected the hypothesis stating that ‘e-commerce service quality has a direct influence on e-commerce user satisfaction’. This implies that e-commerce service quality has no direct influence on e-commerce user satisfaction. On the other hand, the study has found, that e-commerce user satisfaction has a positive significant influence on performance of SMEs (B=42, P-value<0.05). Since P-value for the relationship between e-commerce service quality and e-commerce user satisfaction is greater than the commonly used significance level of 0.05, the study rejects the hypothesis stating that ‘e-commerce service quality mediates the relationship between e-commerce service quality and performance of SMEs. This implies that there is insufficient evidence to support the hypothesis that e-commerce service quality influences performance of SMEs through e-commerce user satisfaction. Therefore, there is no indirect influence of e-commerce service quality on performance of SMEs through e-commerce user satisfaction.

There could be several reasons contributing to the findings above. Firstly, it is possible that the e-commerce service quality examined in the study did not meet the specific needs and expectations of the SMEs and their customers. Service quality is subjective and can vary based on individual perceptions and requirements. If the e-commerce services did not align with the specific demands of the SMEs and their customers, it may not have resulted in a significant influence on e-commerce use or user satisfaction. Secondly, other factors beyond service quality may have had a stronger impact on e-commerce use, user satisfaction, and performance of SMEs. Elements such as pricing, product variety, delivery speed, or marketing efforts could have played more significant roles in influencing these outcomes. Additionally, external factors such as market competition or economic conditions may have overshadowed
the direct influence of e-commerce service quality on user behaviour and performance of SMEs.

Contrary to the findings of this study, several other studies conducted by Tam et al (2020), Ali et al (2018), Widiastuti et al (2019), Al-Okaily et al (2022), Hardiyanto and Firdaus (2021) have confirmed that service quality in e-commerce significantly influences e-commerce use and user satisfaction.

The findings of the present study do not align with the Information System Success Theory when considering e-commerce use and user satisfaction. According to the theory, service quality plays a crucial role in influencing user satisfaction, which subsequently affects user behaviour and organizational performance. However, in this study, the relationship between e-commerce service quality and e-commerce use was found to be insignificant, indicating that there is insufficient evidence to support the hypothesis that service quality influences e-commerce use. Similarly, the relationship between e-commerce service quality and e-commerce user satisfaction was also found to be insignificant. This suggests that the quality of e-commerce services does not have a direct influence on user satisfaction. Consequently, as the study found no significant relationships between e-commerce service quality, e-commerce use, and user satisfaction, it cannot be concluded that these factors align with the Information System Success Theory.

The findings of the study provide valuable practical implications to SMEs, policy implications to government and theoretical implications.

Conclusion

The study found and concluded the followings as per the specific objectives: On examining the influence of e-commerce information quality on enhancing performance of SMEs, the study concluded that there is no direct influence of e-commerce information quality on e-commerce use. Therefore, e-commerce information quality does not indirectly influence e-commerce use or mediate the relationship between e-commerce information quality and performance of SMEs. However, the study did find that e-commerce information quality has a direct positive influence on e-commerce user satisfaction. Furthermore, e-commerce user satisfaction was found to have a significant positive influence on performance of SMEs. Therefore, it can be concluded that e-commerce information quality plays a direct role in enhancing e-commerce user satisfaction among SMEs, and user satisfaction mediates the influence of e-commerce information quality on performance of SMEs.

On examining the influence of e-commerce system quality on enhancing performance of SMEs, the study has concluded that e-commerce system quality has a direct positive influence on e-commerce use. Additionally, e-commerce use was found to have a significant positive mediating influence on performance of SMEs. Therefore, it can be concluded that e-commerce system quality directly influences e-commerce use and e-commerce use mediates the influence of e-commerce system quality on performance of SMEs. The study also found that E-commerce system quality has a direct positive influence on e-commerce user satisfaction. Moreover, e-commerce user satisfaction was found to have a significant positive influence on SME performance. Thus, it can be concluded that e-commerce system quality directly influences e-commerce user satisfaction, which in turn influences performance of SMEs.

On examining the influence of e-commerce service quality on enhancing performance of SMEs, the study found and concluded that there is no direct influence of e-commerce service quality on e-commerce use, implying that e-commerce service quality does not influence e-commerce use. Furthermore, the study rejected the hypothesis that e-commerce use mediates the relationship between e-commerce service quality and performance of SMEs, suggesting that there is no indirect influence of e-commerce service quality on performance of SMEs through e-commerce use. In terms of e-commerce service quality and e-commerce user satisfaction, the study found no direct influence of e-commerce service quality on e-commerce user
satisfaction. Additionally, there was insufficient evidence to support the hypothesis that e-commerce user satisfaction mediates the relationship between e-commerce service quality and performance of SMEs. Therefore, it can be concluded that e-commerce service quality has no direct influence on e-commerce user satisfaction and no indirect influence on performance of SMEs through e-commerce user satisfaction.

Reference


## Appendix 1

### Table 2. Factor Loading and Average

<table>
<thead>
<tr>
<th>Variables</th>
<th>Indicators</th>
<th>Load</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E-commerce use</strong></td>
<td>Frequency of Use</td>
<td>0.79</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Transaction Volume</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receiving order</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Purchases completed</td>
<td>0.67</td>
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<td><strong>E-commerce user satisfaction</strong></td>
<td>Perceived Value for Money</td>
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<td>Product Information Accuracy</td>
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<td>Order Fulfilment</td>
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<td>Completeness</td>
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<td>Timeliness</td>
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<td>Relevance</td>
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<td>Accessibility and Consistency</td>
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<td><strong>E-commerce service quality</strong></td>
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<tr>
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<td>Responsiveness</td>
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<tr>
<td><strong>E-commerce system quality</strong></td>
<td>Tangibility</td>
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<tr>
<td></td>
<td>Reliability</td>
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<td>Assurance</td>
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<td>Empathy</td>
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<td><strong>SME Performance</strong></td>
<td>Revenue Growth</td>
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<td>Increase customer base</td>
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<tr>
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<td>Reduced costs</td>
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<td>Supplier Relationship Management</td>
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**Source:** Field data
Figure 2. Factor Loading