The influence of technological preparedness on trust in e-commerce by South African SMEs with demographics as mediation variables

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A B S T R A C T

This study investigates the impact of Technological Preparedness on trust in e-commerce by SMEs in South Africa. The study examined the role of an organisation’s Technological Preparedness in influencing the use of e-commerce. A positivist research paradigm and quantitative research approach underpins this study. Demographical factors were used as control variables. A total of 497 respondents participated in the research, and the findings highlighted the significance of Technological Preparedness in influencing trust in e-commerce by SMEs in South Africa. The findings suggest that demographics such as Age, Gender, Education Level, Province of origin, Business Category, and Internet Experience had little or no influence on trust in e-commerce compared to Technological Preparedness. The technological limitations SMEs experience significantly influence their trust in e-commerce, impacting their adoption and usage of e-commerce in their businesses. This study contributes to the existing literature on the adoption of technology by SMEs in developing countries. It provides insights for policymakers to develop effective policies that support the usage of e-commerce by SMEs to facilitate growth and sustainability. Based on the findings, government policies should improve to focus more on addressing technological issues and empower SMEs to enhance their preparedness to adopt e-commerce.

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Introduction

E-commerce has brought about a turnaround in conducting business, with big businesses worldwide now depending on digitalisation for most of their business activities (Taranenko, Chychun, Korolenko, Goncharenko, Zhuvahina 2021). Previous studies have identified e-commerce features such as global reach, ubiquity, richness, universal standards, information density, interactivity, and personalisation that are vital for business (Walcott, 2007).

While Small and Medium Enterprises (SMEs) have proved to be relevant contributors to the economies of developing countries, previous studies have revealed limited utilisation of technologies such as e-commerce by SMEs in developing countries like South Africa (Zairis, 2021; Cant, Wiid, 2016). The barriers to e-commerce adoption have shifted over the years, with contextual factors determining these (Hride, Ferdousi, Jasimuddin, 2022). There is still a need to contribute to the literature using empirical evidence to examine the various contexts. Naushad (2020) identified several challenges confronting SMEs in South Africa. The covid 19 lockdown saw large enterprises leveraging e-commerce to conduct business (Marko, 2021). However, the use of e-commerce by South African SMEs to conduct business still needs to be improved (Ocloo, Xuhua, Akaba, Worwui-Brown, 2020). Motivated by the lagging adoption of e-commerce by SMEs in developing countries, this study aimed to explore some factors influencing the attitude towards e-commerce adoption by SMEs in South Africa.

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Many studies have assessed the various factors that influence the adoption of e-commerce by SMEs in Developing Countries. Technological Factors are also featured in those studies as influencers of e-commerce adoption (Markova, 2019; Rashid, 2019). Guided by these findings, the study had the objective of investigating the influence of Technological Factors on trust in e-commerce by South African SMEs. The study also set out to ascertain the limited influence of demographic factors on trust in e-commerce. The study used empirical evidence collected from three provinces of South Africa to establish the impact of technology preparedness on SMEs’ utilisation of e-commerce. Besides contributing to the literature on technology adoption, the study’s findings also make suggestions for government policies promoting the use of e-commerce by SMEs in South Africa.

Literature Review

This section introduces e-commerce and discusses its significance in business, as revealed by literature. The study examined the current literature, focusing on factors influencing the adoption of e-commerce by SMEs in developing countries. The objective of the literature review was to identify factors relevant to the South African context for further analysis and contextualisation of these within a theoretical framework.

E-commerce in Business

Big businesses now depend on various information systems to support their business activities. The Internet has eliminated the geographical barriers that once hindered the exchange of goods and services between businesses and consumers (Furr, Ozcan, Eisenhardt 2022). The utilisation of digital technologies in business brings about many benefits. Given SMEs’ limited utilisation of e-commerce in developing countries, this study aims to analyse the factors that impact e-commerce adoption in South African SMEs. Research has assessed the various features of e-commerce and identified how businesses leverage these features to promote sustainability.

For businesses, e-commerce involves all the trading activities, such as online ordering, marketing, payment, goods delivery, and customer support. The future will see increased internet use and mobile applications in business. There are opportunities to leverage the Internet and Information and Communication Technology (ICT) to advance economic development (Bakari, Tiba, 2020)

Key features of the Internet for Business

This study explored the attributes of e-commerce vital to business. Taher (2021), Mishra (2020), Traver (2014) and Walcott (2007) listed seven features of e-commerce that benefit businesses. These features are global reach, ubiquity, universal standards, interactivity, richness, personalisation, and information density. According to (Junglas, 2017), e-commerce extends the business marketplace’s traditional boundaries and removes temporal and geographic location confinements. It eliminates the restrictions of physical market space and allows consumers to shop from their preferred environments using smart devices. From the consumer's point of view, ubiquity reduces transaction and market participation costs.

E-commerce is one of the digital technologies being massively adopted to generate, process, share, and transact information (Chaudhuri, 2015). More business transactions are now happening in the information space, even where physical products are involved. Using networks brought about enriched interactivity and improved customer service and affordability. Networks have introduced open market concepts such as virtual communities and third-party marketplaces. Big businesses have leveraged these features to promote growth, expand their markets, and establish their brands.

Challenges of e-commerce in SMEs

The African Union Commission (AUC) converged In October 2016 to review the SME Strategy and Master Plan (2017-2021) to improve the continental business environment by forming more businesses. More businesses could be formed through the formalisation of growth-oriented informal enterprises. The plan also targeted increasing entrepreneurship initiatives that contribute to regional and global value chains by promoting innovative financing. SMEs are the backbone of developing countries’ economies and can utilise e-commerce platforms to reduce marketing costs and boost sales (Pantelimon, 2022). The SME strategy Master Plan highlights the efforts by developing countries in Africa to promote sustainable development by supporting SMEs (AU Directorate of Communication, 2016)

The root challenge of digital economy development in developing countries, besides infrastructure, logistics, and financial support, is some entrepreneurs' reluctance to change (Rawash, 2021; Damuri, 2021; Ndayizigamiye, 2019). The 2019 Covid lockdowns propelled the shift towards the digital economy for developing countries. According to Damuri (2021), the demand for basic commodities in e-commerce has risen significantly since 2019. Although e-commerce enables SMEs to expand into new markets, the lack of knowledge of the e-commerce applications needed by SMEs’ businesses remains a reality. The small size of their enterprises and relatively limited budgets further impacts their development (Kebonye, 2010; Ndayizigamiye, 2019). SMEs’ Technological Preparedness remains poor in developing countries such as South Africa. Markova, M. (2019) identified the influence of Technological Preparedness by organisations to the trust in adopting e-commerce.
Theories Guiding the Study

Using theory in research helps to understand a phenomenon and gain deeper insights into practice (Gupta, 2014). Many theories related to adopting and implementing new technologies have been established. These theories guide research related to the adoption of technologies. This section will discuss some of the theories considered for the study.

The Technology Acceptance Model

The Technology Acceptance Model (Scherera, 2019), comprises of core variables of user motivation: perceived ease of use (PEU), perceived usefulness (PU), and attitudes toward technology. The types of samples and the technology specificity are considered powerful moderators of TAM effects, with the multiple contexts presenting varying relationship matrices amongst the variables. The SMEs in South Africa offer a unique context to study the influence of an organisation’s Technological Preparedness on attitudes towards adopting e-commerce. Guided by the literature, Trust was identified as a key attitude motivating adoption. The study then tested the TAM model using empirical data from the SMEs from three provinces in South Africa.

Diffusion of Innovation theory (DOI)

Technology diffusion refers to a process that occurs over time and is necessary when examining technology adoption by applying the Diffusion of Innovation (DOI) theory. The DOI theory assumes that creating innovations or new technologies is continuous, and communication is vital in disseminating these to society. Acceptance of the invention is subject to the individual’s attitude towards the innovation (Maknovhololo. 2017). This study first identified the factors likely to influence attitudes toward e-commerce adoption by SMEs in South Africa, and the organisation’s Technological Preparedness was part of these factors (Scherera, 2019). The study then applied quantitative methods to test the influence of technological factors on attitudes toward e-commerce adoption.

Technological Preparedness and Trust in E-commerce

Rashid (2019) identified the country’s ICT infrastructure as an essential national factor contributing to the growth of e-commerce. Poor overall infrastructure, in general, and particularly ICT infrastructure, has been identified by researchers as a significant factor that contributes to the lower diffusion of e-commerce in developing countries. (Onditi, 2017, Rashid, 2019). Previous research studies guided this study in establishing a measure of the organisation’s Technological Preparedness factor for the population under research. The variables to establish an organisation’s Technological Preparedness range from technological skills within the organisation and community. Acheampong (2017) and Parasarumaran (2000) identified the Technology Readiness Index (TRI) theory as a multiple-item scale theory used to gauge individuals’ readiness for new technology. The TRI assesses an individual’s willingness to embrace and use new technologies to accomplish goals at home and work.

Ahluwalia (2020) identified the technology drivers as captured in the composite index called Maturity and Reach of Internet Technologies (MRIT), which includes accessibility, adequate bandwidth, diffusion of mobile networks, and implementation of security protocols. Technology efficacy (TE) is one of the variables for the technological factor. TE includes dimensions such as Education level, Internet literacy, technical skills of the workforce, and degree of innovation. Guided by these factors, this study established a suitable scale to measure organisational technology preparedness factors within the SMEs from three provinces in South Africa.

Previous research has established that the Technological Preparedness of an organisation influences trust in e-commerce (Govinnage & Sachitra, 2019). Using empirical evidence from the provinces of Limpopo, Mpumalanga and the Northern Cape, this study tested the causal effect of organisational Technological Preparedness on trust in e-commerce by SMEs.

Demographics variables

The study established and analysed some control variables, which are factors researchers include in their work to rule out alternative explanations for findings (Schmitt, 1991; Becker, 2005). According to Berker (2005), there are two primary means of controlling variables in a study. The experimental design deals with control variables by manipulating the sample, making sure it is identical across participants (for example, having one gender in all samples). Statistical control can also measure and include relevant variables in the primary analysis. The improper handling of control variables can result in misleading results. This research considered the following variables: Age, Gender, Education Level, Province and Internet Experience.

Over the years, researchers have investigated the influence of gender, age and level of education on technology adoption (Xu, Ge, Wang & Skare, 2021). On gender, research findings have tipped males to be most likely to adopt technology in developing countries (Aruleba, Jere & Matarirano, 2022; Fadeyi, Ariyawardana & Aziz, 2022). On age, young generations are most likely to adopt technologies (Yang & Shih, 2020), and education level directly influences the trust to use technology (Kavandi & Jaana, 2020). Guided by the literature review, this study proposed the following hypotheses as illustrated in the model in Fig 1:

H1: Technological Factors influence the trust in e-commerce by SMEs in South Africa.
H2: Gender influences Trust in e-commerce by SMEs in South Africa.
H3: The province of origin influences Trust in e-commerce by SMEs in South Africa.
H4: Age influences Trust in e-commerce by SMEs in South Africa.
H5: Internet experience influences Trust in e-commerce by SMEs in South Africa
H6: The level of education influences Trust in e-commerce by SMEs in South Africa.

Figure 1 illustrates the conceptual model proposed by this study after an in-depth literature analysis.

Figure 1: Conceptual model for the influence of Technological Preparedness and Demographic factors on Trust in e-commerce.

Methodology

The positivist paradigm underpinned the study. Studies aligned with positivism generally focus on identifying explanatory associations or causal relationships through quantitative approaches, where empirically based findings from large sample sizes are favoured (Park. 2020). Ontologically, positivism assumes reality to be singular, objective, and separate from the researcher (Creswell, 2018). Epistemologically, positivists believe knowledge is solely based on observable facts outside the human mind.

The study employed a quantitative approach, and a survey was conducted on SMEs from Limpopo, Mpumalanga, and Northwest provinces of South Africa.

Data was collected using a questionnaire administered to 513 SMEs directors conveniently sampled. The questionnaire consisted of two parts, with the first section capturing the respondents’ demographic information, such as the directors’ age, level of education, gender, internet experience and province. The 2nd part consisted of Likert scale questions (scale of 1 strongly disagree, 5 = strongly agree) to depict the SME organisation’s Technological Preparedness status and their attitude towards e-commerce (Trust in e-commerce).

The dependent variable in this study was trust in e-commerce. Collected data were analysed using SPSS software and modelled on Amos software.

Findings

The study deployed approximately 620 questionnaires to the sampled recipients. A total of 513 responses were received, and of these, 497 responses were complete and usable for the quantitative data analysis, giving a response rate of 82.7%, which is considered good in Information Systems Research (Dillman, 2020).

Respondent profiles

Profiles of respondents were classified using five categories, which are Gender, age, education level, Internet experience, and province based. The SMEs were randomly sampled from random business sectors to allow any new categories of SMEs to emerge. Regarding Gender, there was a slight difference in the composition of respondents, with Males constituting 49.9% and females 50.1% (see Table 1).

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>248</td>
<td>49.9</td>
</tr>
<tr>
<td>Male</td>
<td>249</td>
<td>50.1</td>
</tr>
</tbody>
</table>

On age, 28% of the respondents were between 18 and 34 years old, 58.6% were between 35 and 54 years old, and 13.5% were above 55 years old. Based on this result, most SME owners are middle-aged (see Table 2).
Table 2: Respondents’ age

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 34 years</td>
<td>139</td>
<td>28.0</td>
</tr>
<tr>
<td>35 - 54 years</td>
<td>291</td>
<td>58.6</td>
</tr>
<tr>
<td>55 years and above</td>
<td>67</td>
<td>13.5</td>
</tr>
</tbody>
</table>

The respondents with a level of education below High School were the majority at 35.4%. Respondents with High School constituted 28.4%, those with a bachelor’s degree 17.5%, and 18.5% had a Postgraduate qualification (see Table 3).

Table 3: Respondents’ level of education

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below High School</td>
<td>194</td>
<td>39.0</td>
</tr>
<tr>
<td>High School</td>
<td>124</td>
<td>24.9</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>87</td>
<td>17.5</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>92</td>
<td>18.5</td>
</tr>
</tbody>
</table>

On knowledge about the internet, 61.4% of the respondents claimed to be highly knowledgeable, 29.2% slightly, and 9.5% were not knowledgeable (see Table 4).

Table 4: Respondents’ knowledge on use of the internet

<table>
<thead>
<tr>
<th>Internet Knowledge</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>47</td>
<td>9.5</td>
</tr>
<tr>
<td>Highly knowledgeable</td>
<td>305</td>
<td>61.4</td>
</tr>
<tr>
<td>Slightly knowledgeable</td>
<td>145</td>
<td>29.2</td>
</tr>
</tbody>
</table>

The SMEs from 3 provinces, Limpopo, Mpumalanga, and Northern Cape in South Africa, were considered for this Survey. The distribution of respondents per province was 59.8%, 31.0% and 9.3% respectively (see Table 5).

Table 5: Respondents’ province

<table>
<thead>
<tr>
<th>Province</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limpopo</td>
<td>297</td>
<td>59.8</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>154</td>
<td>31.0</td>
</tr>
<tr>
<td>Northern C</td>
<td>46</td>
<td>9.3</td>
</tr>
</tbody>
</table>

A variety of business sectors were represented in the sample of respondents. Common sectors were the food industry (including fruit and vegetable vending), transport industry, Beauty therapy, construction, and education.

Table 6 describes the composition of responses by participants to survey questions contributing to Technological Preparedness and Trust in e-commerce.
Table 6: Technology Factor and Trust on e-commerce descriptive statistics

<table>
<thead>
<tr>
<th>Indices</th>
<th>Description</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP1</td>
<td>The government provides opportunities for me to learn about new technologies.</td>
<td>31.4</td>
<td>21.7</td>
<td>17.7</td>
<td>13.1</td>
<td>16.1</td>
</tr>
<tr>
<td>TP2</td>
<td>I am prepared to learn new internet-based technologies that might advantage my business.</td>
<td>7.4</td>
<td>9.7</td>
<td>22.5</td>
<td>29.4</td>
<td>31.0</td>
</tr>
<tr>
<td>TP3</td>
<td>My business clients already use internet-based technologies to access goods and services.</td>
<td>17.7</td>
<td>23.3</td>
<td>36.2</td>
<td>16.3</td>
<td>6.4</td>
</tr>
<tr>
<td>TP4</td>
<td>Lack of the right skills to use technological affects my utilization of e-commerce (doing business on the internet) in my business.</td>
<td>7.2</td>
<td>10.5</td>
<td>23.3</td>
<td>30.0</td>
<td>29.0</td>
</tr>
<tr>
<td>TP5</td>
<td>There is adequate IT infrastructure within my community to access the internet.</td>
<td>8.0</td>
<td>9.7</td>
<td>28.4</td>
<td>37.8</td>
<td>16.1</td>
</tr>
<tr>
<td>TOE1</td>
<td>The use of e-commerce in my business, will have long term benefits</td>
<td>7.2</td>
<td>10.1</td>
<td>23.1</td>
<td>35.6</td>
<td>23.9</td>
</tr>
<tr>
<td>TOE2</td>
<td>Use of e-commerce (doing business on the internet), will see my business penetrate new markets.</td>
<td>4.0</td>
<td>10.5</td>
<td>25.2</td>
<td>34.2</td>
<td>26.2</td>
</tr>
<tr>
<td>TOE3</td>
<td>E-commerce (doing business online) will improve access to information in my business sector.</td>
<td>3.2</td>
<td>12.3</td>
<td>18.5</td>
<td>44.3</td>
<td>21.7</td>
</tr>
<tr>
<td>TOE4</td>
<td>E-commerce will allow businesses in my sector to do business across all levels.</td>
<td>4.8</td>
<td>23.3</td>
<td>18.5</td>
<td>29.0</td>
<td>24.3</td>
</tr>
</tbody>
</table>

Analysis of the Technological Factor Items

The Technological Factor scale was made up of five items. A Cronbach alpha of 0.846 was obtained on the Technological Preparedness factors. The reliability coefficient is acceptable (Pallant, 2020). The Corrected-Item total correlation column in Table 7 shows that all the item-total correlations are above the cut-off level. No poor items were identified; hence all items were retained.

Table 7: Reliability Statistics for Technological Preparedness Factor

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Based on Standardized Items</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.846</td>
<td>0.855</td>
<td>5</td>
</tr>
</tbody>
</table>

Item-Total Statistics

<table>
<thead>
<tr>
<th>Indices</th>
<th>Scale Deleted Mean if Item</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Total Correlation</th>
<th>Item-Squared Correlation</th>
<th>Multiple Cronbach’s Alpha if Item Deleted</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP1</td>
<td>13.71</td>
<td>9.517</td>
<td>0.617</td>
<td>0.420</td>
<td>0.832</td>
<td></td>
</tr>
<tr>
<td>TP2</td>
<td>13.08</td>
<td>9.489</td>
<td>0.693</td>
<td>0.485</td>
<td>0.804</td>
<td></td>
</tr>
<tr>
<td>TP3</td>
<td>13.87</td>
<td>11.701</td>
<td>0.603</td>
<td>0.389</td>
<td>0.829</td>
<td></td>
</tr>
<tr>
<td>TP4</td>
<td>13.01</td>
<td>10.601</td>
<td>0.728</td>
<td>0.556</td>
<td>0.797</td>
<td></td>
</tr>
<tr>
<td>TP5</td>
<td>13.09</td>
<td>10.692</td>
<td>0.688</td>
<td>0.543</td>
<td>0.806</td>
<td></td>
</tr>
</tbody>
</table>

Multiple Regression Analysis

This study identified a set of control variables (age, gender, internet experience, education level, province). Determining the significance of the relationship between these controller variables and the dependent variable is essential. Thus, the first part was the analysis of the regression of the controller variables on the dependent variable (Trust in e-commerce). The second part tested the regression of the demographics together with the independent variable (Technological Preparedness) on the dependent variable (Trust in e-commerce).
Table 8 summarises the regression analysis results, showing the two models separately. Model 1 shows the regression analysis results for age, gender, education level, Internet experience, and province (controller variables) on the Trust on E-commerce (dependent variable). Model 2 demonstrates the combined model's effect that includes controllers and independent variable (Technological Preparedness) on Trust in E-Commerce (TOE) when applying the regression analysis.

Table 8: Summary for the Regression Analysis Test

<table>
<thead>
<tr>
<th>Model Summary</th>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>.148&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.022</td>
<td>0.012</td>
<td>0.72626</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.781&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.610</td>
<td>0.603</td>
<td>0.46040</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANOVA&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Regression</td>
<td>5</td>
<td>1,164</td>
<td>2,207</td>
<td>.052&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residual</td>
<td>491</td>
<td>0,527</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>496</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Regression</td>
<td>9</td>
<td>17,953</td>
<td>84,694</td>
<td>.000&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residual</td>
<td>487</td>
<td>0,212</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>496</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of the regression analysis show that model 1 is not significant with (P>0.001), and model 2 is significant with (P <.001). The R2 suggests that the independent variable (Technological Preparedness) can explain 61% (R Square multiplied by 100) of the variance determining Trust in e-commerce. The effect of education level, age, Internet experience, gender, and the province of the SME were controlled. The VIF (Variance Inflation Factor) values vary between (1.293) and (2.898), and this indicates the absence of multicollinearity.

The study found all the predictors (independent variables) in the model significant. According to the data sample, the beta weight in Technological Preparedness is (β = 0.162).

For the results from the controllers, though model 1 is insignificant with (p>0.001), gender, age, and Internet knowledge significantly influence Trust in e-commerce. According to the results, males have more Trust in e-commerce. Age has an inverse influence on Trust in e-commerce, while the level of education and internet knowledge directly influence Trust in e-commerce. The influence of the level of education was meagre for this sample. Therefore, the results of the regression analysis support the hypotheses (See Table 9).

Table 9: Regression test results implication on hypotheses

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Hypothesis</th>
<th>β</th>
<th>Sig.</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological Preparedness influence Trust in e-commerce</td>
<td>H1</td>
<td>0.162</td>
<td>.000&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Supported and significant</td>
</tr>
<tr>
<td>Gender, Age, Level of education, Internet experience and Province influence trust in e-commerce</td>
<td>H2-H5</td>
<td>&lt;0.1</td>
<td>.052&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Not supported and insignificant</td>
</tr>
</tbody>
</table>

Structural Equation Modelling

The study evaluated the structural model to determine how the empirical data substantiate the theoretical relationships specified in the conceptual model. The evaluation focused more on the structural linkages between the endogenous and exogenous latent variables. It is vital to assess the signs of the parameters representing the paths between the latent variables to ascertain the degree of consistency with the nature of the causal effect hypothesised between the latent variables.
The t-value (CR) must be greater than 1.96, and the p-value must be less than 0.05 (*** for the hypothesis to be acceptable. Based on the model in Figure 2, the study found Technological Preparedness to have a significant and positive influence on trust in e-commerce with (standardised estimate) $b=0.859$, (critical ratio) $t=9.337$ and (p-value) $p<0.001). H1 is, therefore, supported.

The study found the influence of gender on trust in e-commerce to be positive in favour of males and slightly significant ($b=0.096$, $t=3.008$, $p=0.002$). The influence of age was negative and insignificant ($b=0.028$, $t=0.928$, $p=0.353$). Young SME directors have more trust in e-commerce. The influence of the education level was positive and insignificant ($b=0.016$, $t=0.529$, $p=0.597$). The more educated SME directors have slightly more trust in e-commerce. The influence of knowledge of the internet on trust in e-commerce was positive and significant ($b=0.083$, $t=2.652$, $p=0.042$). SME directors who know about the internet have some trust in e-commerce. The influence of location was negative and insignificant ($b=0.008$, $t=0.498$, $p=0.008$). For most demographic variables, the b-value was very small, the t-value less than 1.96 and the p-value greater than 0.05 (except for gender and internet knowledge); hence, the t-test confirmed that the demographic variables have very little influence on trust in e-commerce (Hair et al., 2020). Table 10 gives a summary of the t-test results applied to the data sample.

### Table 10: Hypotheses Testing conclusions

<table>
<thead>
<tr>
<th>Hypothesised Relationship</th>
<th>Standardised Estimates</th>
<th>S.E.</th>
<th>C.R. (t-value)</th>
<th>P (p-value)</th>
<th>conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust in E-commerce</td>
<td>Technological Preparedness</td>
<td>0.859</td>
<td>0.062</td>
<td>9.337</td>
<td>***</td>
</tr>
<tr>
<td>Trust in E-commerce</td>
<td>Gender</td>
<td>-0.096</td>
<td>0.032</td>
<td>-3.068</td>
<td>0.002</td>
</tr>
<tr>
<td>Trust in E-commerce</td>
<td>Age</td>
<td>-0.028</td>
<td>0.025</td>
<td>-0.928</td>
<td>0.353</td>
</tr>
<tr>
<td>Trust in E-commerce</td>
<td>Level of Education</td>
<td>0.016</td>
<td>0.019</td>
<td>0.529</td>
<td>0.597</td>
</tr>
<tr>
<td>Trust in E-commerce</td>
<td>Internet Knowledge</td>
<td>0.083</td>
<td>0.017</td>
<td>2.652</td>
<td>0.008</td>
</tr>
<tr>
<td>Trust in E-commerce</td>
<td>Province</td>
<td>0.018</td>
<td>0.019</td>
<td>0.583</td>
<td>0.56</td>
</tr>
</tbody>
</table>

**Discussions**

The study established the following conclusions based on the model developed from the collected data:

**Influence of Technological Preparedness on trust in e-commerce**

Previous studies have shown that technological factors significantly influence e-commerce adoption in SMEs (Rashid, 2019; Onditi, 2017; Acheampong, 2017), and empirical findings have confirmed this. Empirical evidence confirmed that SMEs that demonstrated high Technological Preparedness in their organisations and working environments had high trust in e-commerce compared to those with low preparedness.
Influence of age on Trust in e-commerce

The survey findings did not identify any significant influence of age on trust in e-commerce. A negative Beta value indicates that trust in e-commerce decreases with age, confirming the findings of previous research on age versus utilisation of e-commerce by Lanvin, (2018); however, the age variable explains a minimal variance of trust in e-commerce.

Influence of internet knowledge and level of education on trust in e-commerce

Knowledge about the internet and level of education had minimal influence on trust in e-commerce within SMEs. Regression coefficients indicate minimal causal effect for the two control variables. Though previous research (Lawrence, 2018) had identified the greater influence of the level of education and knowledge of the internet on the adoption of technology, this influence has become minimal over the years. The empirical data analysed by this study alludes to that. Evidence of direct proportionality exists between internet knowledge and trust in e-commerce (positive Beta value).

Influence of gender on trust in E-commerce

The study found gender and knowledge of the internet to significantly influence trust in e-commerce, which aligns with previous research findings. However, the regression coefficients indicate the effect to be very little. Previous studies indicate male domination of technology adoption (Aruleba et al., 2022; Fadeyi et al., 2022). However, this observation varies from one society to another (Howcroft, 2023; Tufa, 2022). Whilst these two variables still influence trust in e-commerce, the study suggests that policy should now shift towards addressing more influential factors like Technological Preparedness.

Influence of the Province of origin

The study findings established no significant influence of the province of origin on trust in e-commerce. The three provinces were selected randomly based on the similarity of the contextual factors for SMEs across the country; hence, it is justifiable to generalise the findings to South Africa. Previous research has acknowledged the disparities in access to technology between rural and urban South Africa (Lembani, Gunter, Breines, & Dalu, 2020). However, this study could not establish the same concerning different provinces in South Africa. The digital divide within the country can still be explored further.

Conclusions

As society moves towards closing the digital divide, demographical disparities in technology adoption are becoming increasingly insignificant. Technology is slowly becoming accessible to everyone, although attitudes to adopting and using technology remain challenged in developing countries. Based on empirical data, this study established that South African SMEs have different attitudes towards adopting and using e-commerce. Previous research has identified the influence of Technological Preparedness on adopting technology. The study found that the varying Technological Preparedness of the SMEs influences their trust in e-commerce. More technologically prepared SMEs tend to trust e-commerce and are more likely to adopt it.

Based on the findings, the study suggests that government policy should focus on creating uniformity in Technological Preparedness for SMEs. The disparities in Technological Preparedness contribute to the difference in trust in e-commerce amongst SMEs in South Africa.

Contribution of the Study

This study significantly contributes to the literature on the adoption of technology. The study used empirical data to test the TAM theory within the South African context. The influence of Technological Preparedness on trust as an attitude to adopting e-commerce was tested and confirmed. The South African SMEs context is characterised by the inadequate infrastructure needed to promote the adoption of technology by SMEs. Research findings from this unique context will contribute to knowledge. The study also contributes to policy. Government policy should address Technological Preparedness issues within the affected communities. The study suggests that the government should allocate resources towards improving network infrastructure, IT support, and sponsorship of training for affected SMEs. Training opportunities for surrounding communities could also improve the level of education in these communities. A robust and reliable ICT infrastructure is essential to e-commerce adoption (Musa, 2005; Dholakia, 2008; Okoli, 2010; Ahluwalia, 2020). Similarly, the need for telecommunication infrastructure influences the adoption of e-commerce (Kaba, 2009; Ahluwalia, 2020). Developing countries still need to catch up in technology and infrastructure since they must compete with developed countries with well-developed infrastructure. For future research direction, the study calls for the deployment of a qualitative research approach to solicit the sentiments and perceptions of SMEs holders on their trust on e-commerce.

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