

Towards a Click-and-Enter Business Model: Modelling E-Commerce Adoption Drivers and Digital Consumer Behaviour at Zimpost

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Abstract

E-commerce emerged to be a cornerstone of business transactions in Zimbabwe and beyond. Owing to undisputed benefits of e-commerce, the Government of Zimbabwe, and other private players, invested in improving the e-commerce infrastructure in the country. Regardless of such improvements, ZIMPOST struggled to generate traction for its e-commerce platforms. ZIMPOST's e-commerce customer adoption levels were low and worrisome. Thus, this study sought to examine the e-commerce adoption drivers of ZIMPOST's e-commerce platforms. Through model generalisation and extension, the Social Commerce Adoption (SCA) model informed the conceptualisation of the study. The study presented and tested a model with five e-commerce adoption drivers namely utility, simplicity, infrastructural, social and digital literacy. All these e-commerce adoption drivers were posited to be directly impacting e-commerce adoption intention behaviour of customers. Data were collected from ZIMPOST customers using a structured questionnaire, and analysed using descriptive statistics and stepwise multiple linear regression analysis. The study revealed that four out of five e-commerce drivers (society, utility, digital literacy and infrastructure) significantly impacted e-commerce adoption behaviour. Simplicity driver recorded insignificant impact on e-commerce adoption intention behaviour. The study thus recommended ZIMPOST to revise its e-commerce platform through using this study's empirically tested drivers of e-commerce adoption.

KEYWORDS: E-commerce, digital consumer behaviour, technology adoption, digital business.

1. Introduction

The advent of the internet and digital technologies such as smart phones and tablets enable businesses to minimise environmental volatility through targeting customers on a one on-one basis. That brought about a ubiquitous business platform called electronic commerce. In most developed economies, e-commerce has changed the landscape of business through the promotion of a ubiquitous business platform. For that reason, e-commerce is a multibillion-dollar platform for companies and brands that capitalize on it. Even during the pandemic, e-commerce proved to be useful for business continuity and competitiveness.

However, the rate at which some African countries have adopted e-commerce as a way of doing business is still low and worrisome. Although Africa accounts for 15% of the world's human population, only 6.2% of the world's internet subscribers are Africans (Statista, 2022). The low uptake of e-commerce is prevalent regardless of the massive investments that are made. For instance, Ighobor (2022) reports that an increase in ICT investment from \$400 million to over \$2 billion was done in Africa between 2017 and 2021; and they projected that the figure would double every two years.

Although e-commerce is believed to be the cornerstone of business in the fourth industrial revolution, consumers in Zimbabwe lag behind the adoption of e-business and e-commerce practices (Muparangi and Makudza, 2020; TechZim, 2021). In 2020, Zimbabwe's digital expenditure as a proportion of consumer spending per capita was minimal at 0.3 percent relative to that for Africa which averaged 1.3 percent (Tradegov, 2022). Techzim (2021) reports of a study by ZIMSTAT and POTRAZ which revealed that 89.6% of Zimbabwean households have a mobile phone. However, of the 89.6% of households that had a mobile phone, only 58.8% reported that they had a smartphone. Smartphones are essential for e-commerce adoption. Conversely, Zimbabwe's internet penetration rate stood at 62.6% by the third quarter of year 2021 and rose to 65.3% in 2022 (POTRAZ, 2021, 2022). Active mobile subscriptions marginally declined by 0.1% in 2020 and so was mobile penetration rate which fell to 87.7% (POTRAZ, 2020). The first quarter of 2024 saw a 25.90 percent increase in mobile internet and data traffic in Zimbabwe, reaching 58.44 petabytes, up from 46.79 petabytes in the previous quarter of 2023 (Tome, 2024). Mobile Internet usage and data traffic grew by 12.3%, reaching 37,690.4 Terabytes in the first quarter of 2023, up from 33,576.4 Terabytes in the fourth quarter of 2022 (POTRAZ, 2023). The COVID-19 promoted rapid use of e-commerce, with major online transactions being done in Harare and Bulawayo (Tradegov, 2024).

Research into the drivers of e-commerce business adoption and consumer behaviour barriers in Zimbabwe is still grey. Of the few studies conducted, some have been overtaken by time (Maswera, Dawson and Edwards, 2008; Mashanda, 2012), or have not focused directly on consumer adoption drivers (Gurure and Takavarasha, 2020; Mushayavanhu and Simuka, 2022; Eliot and Gabrie, 2022).

This study therefore sought to bridge the practical and theoretical gap on e-commerce consumer adoption in Zimbabwe through the provision of compelling empirical evidence on the drivers of e-commerce adoption and user behaviour in Zimbabwe. The need to focus on consumers was justified because any technological development and programming should be informed by user needs, not developers' capabilities. The study therefore examined the drivers of e-commerce and analyse how they relate to user adoption behaviour. ZIMPOST was used for case analysis. The study further offers unique contribution in presenting a tested model of e-commerce adoption drivers and user behaviour.

This study's findings serve as a mechanism to identify and prioritise service improvement areas and provides a benchmark upon which future improvements in e-commerce adoption in ZIMPOST and other postal and courier services may be evaluated. The study is also useful as a basis for developing an e-commerce adoption blueprint which helps to devise appropriate strategies for closing the e-commerce adoption gaps and modernizing of the postal services in Zimbabwe.

2. Literature Review

2.1. Electronic Commerce

E-commerce is the use of the internet to digitally process information for business interactions in order to create, convert, and deliver value (Escursell, Llorach-Massana and Roncero, 2021). On the other hand, Bhatti et al. (2020) note that e-commerce is the migration of conventional business procedures to the online environment. E-commerce helps in augmenting organisational competencies and increasing territories, thus overcoming geographical barriers (Lucas, Lunardi and Dolci, 2023).

With the internet as the medium, e-commerce facilitates the doing of business virtually (Chong et al., 2023). Lucas, Lunardi and Dolci (2023) further elaborated the understanding of e-commerce by stating that e-commerce is not limited to the exchange of goods and services (purchases and sales) via an electronic platform, but involves the complete online selling process and product delivery. Thus, e-commerce is simply digitizing the traditional way of transacting as well as denoting customer behaviour. Cheba et al. (2021) indicate that e-commerce is conducting sales transactions for goods and services on the internet. Apart from merely transacting, many people use the internet as a source of information for price comparisons or searching for the latest products or alternatives available before making a purchase online or at a traditional store (Cheba et al., 2021).

2.2 E-commerce adoption

Haryanti and Subriadi (2020) define adoption as the incorporation of a novelty over a lengthy period of time. They also note that adoption is not an everlasting behaviour. This means that organisations or individuals eventually stop assimilating this phenomenon with time for innumerable reasons. These may be personal, social influences, performance and effort expectancies or facilitating conditions. Adoption is a cognitive process through which an individual undergoes from hearing about an innovation to accepting it (Hasan and Mardhani, 2021). This follows awareness, interest, evaluation, trial and acceptance stages (Hasan and Mardhani, 2021).

In relation to e-commerce adoption, Orji, Ojadi and Okwara (2021) note that it refers to the wide-spread acceptance of electronic commerce by both the users and the service providers. A two-fold approach of considering both customers and service providers was supported by many scholars (Lestari, 2019; Haryanti and Subriadi, 2020). The rationale behind adoption by both

users and customers lie on the notion that for a transaction to be completed, both the customers and the service provider performs certain functions (Orji, Ojadi and Okwara., 2021). However, owing to the rapid developments of technology and e-commerce technologies, most companies have since responded to e-commerce adoption, yet most consumers are yet to fully adopt, and appreciate the essence of buying online.

Although consumers in Zimbabwe are believed to lag behind in adopting e-commerce practices, e-commerce is thought to be an essential component of business in the fourth industrial age (TechZim, 2021). The e-commerce adoption rate for the general consumer is less than 10% yet e-commerce supported infrastructure. According to POTRAZ (2022), 89.6% of Zimbabwean homes have mobile phones. Only 58.8% of the 89.6% of homes with mobile phones, however, claimed to have a smartphone. The adoption of e-commerce requires smartphones. On the other hand, by the third quarter of 2021, the internet penetration rate in Zimbabwe was 62.6% (POTRAZ, 2021).

2.3 Digital consumer behaviour

Digital consumer behaviour is the study of how consumers act and react to electronic marketing, internal and external environmental stimuli (Khan et al., 2023). For firms to develop powerful digital marketing tactics that can affect consumers' decision-making processes, understanding digital consumer behaviour is essential. According to Masyhuri (2022), digital consumer behaviour is the study of the electronic steps that people or groups take when they buy, use, or discard goods, services, concepts, or experiences in order to satiate their needs and desires. Therefore, digital consumer behaviour shows how people behave while making online decisions about what to buy, how to evaluate it, and how to get rid of goods and services that they believe may not meet their needs (Makudza, Mugarisanwa and Siziba, 2020).

2.4 E-commerce adoption drivers

Theory remains the main guiding principle in the development of e-commerce adoption drivers. E-commerce adoption drivers are informed by several theories and underpinning concepts. Empirical research done to understand adoption of e-commerce in Zimbabwe favoured the Social Commerce Acceptance (SCA) model (Makudza, Sandada and Madzikanda, 2021). The SCA model unifies the contributions of nine previously known theories of technology acceptance and adoption. Key contributors to the SCA model include the Technology Acceptance Model (TAM) (Davis, 1986), Theory of Reasoned Action (TRA or ToRA), Unified

Theory of Acceptance and Use of Technology model (UTAUT) (Venkatesh et al., 2003). These previous theories indicate that information technology (IT) acceptance or adoption is determined by the end-users' acceptance behaviour.

According to the SCA model, there are five different factors that influence the adoption of social commerce: utility, simplicity, intrinsic, social, and infrastructure. Utility driver describes how consumers' perceptions of the worth or advantages of adopting social commerce can either encourage or discourage them. Simplicity drivers describe how easy or difficult it is to use social commerce. Intrinsic driver refers to the evaluation and attitude of one's capacity and motivation to use social commerce to carry out a specific task or employment. The social driver describes how individuals and the environment influence a person's decision to engage in social commerce. The degree of accessibility and affordability of the hardware and software components of social commerce is the infrastructure driver (Makudza, Sandada and Madzikanda, 2021).

2.5 The conceptual framework and hypotheses development

Several scholars have made attempts to explain the drivers of technology adoption, e-commerce adoption and social commerce adoption (Hasan and Mardhani, 2021; Orji, Ojadi and Okwara., 2021). Many researchers (Chong et al., 2023; Escursell, Llorach-Massana, and Roncero, , 2021) contend that adoption patterns for social commerce and e-commerce are comparable. Table 1 shows previous studies and the hypothesised drivers of adoption that they used.

Table 1. Theoretical drivers of e-commerce adoption

Author/s and Year	Adoption Drivers	Analysis	Scope
Ariansyah et al. (2021)	• Demographics • Facilitating conditions • Digital skills • Positive reinforcement	Multiple regression analysis	Indonesia
Rodríguez-Ardura and Meseguer-Artola (2010)	• Environmental drivers • Organisational Drivers • Technological drivers	Longitudinal analysis	Spain
Mohd-Zain et al. (2020)	• Environmental drivers • Organisational Drivers • Technological drivers	Structural equation modelling	Malaysia
Ben-Youssef and Dahmani (2023)	• Digital skills • Demographics • Innovation • Facilitating conditions	Regression analysis	Morocco
Al-Tit (2020)	• Customer preferences, e-commerce perceived value, partner readiness, e-commerce cost, technical expertise, customer trust, employee knowledge and experience, top management support, perceived ease of use, and organizational culture	Structural equation modelling	Saudi Arabia
Scupola (2009)	• Technological drivers • Environmental drivers • Organisational Drivers	Comparative analysis	Denmark and Australia
Makudza, Sandada and Madzikanda (2021)	• Utility • Simplicity • Intrinsic • Digital literacy • Infrastructure	Structural equation modelling	Zimbabwe

Source: Own compilation

Table 1 shows studies from developing and developed nations. The widely used drivers of adoption of e-commerce applied the technology, environment, and organisation (TEO) model. Table 1 shows that the TEO mode was tested in Spain, Malaysia, Denmark and Australia. However, the TEO model of e-commerce adoption suffers the major weakness that it does not fully account for individual differences in attitudes, beliefs, and behaviors. While the model recognizes the interplay between technology, environment, and organization in influencing technology adoption, it oversimplify the complex decision-making processes that individuals go through when deciding to adopt a new technology. The study thus adopted the adoption drivers by Makudza, Sandada, and Madzikanda (2021) as they encompass the and abbreviate the drivers suggested by other scholars in Table 1. Further, many studies have adopted the Makudza, Sandada, and Madzikanda (2021) drivers in their contemporary studies (Fedushko et al., 2023; Goldber and Kotze, 2022; Muti'ah et al., 2024; Shumba and Ferreira, 2023).

Thus, the SCA model by Makudza, Sandada, and Madzikanda (2021) was modified for this study in order to examine the five predictor drivers of e-commerce adoption. These predictor variables—which acted as context factors—are utility (perceived benefits factors), simplicity (compatibility), social, intrinsic (digital literacy), and infrastructural.

Since most Zimbabwean customers do not use e-commerce, relating e-commerce predictors to actual adoption may not produce the best outcomes (Kader et al., 2023). Accordingly, the study asserts that the predictor elements for e-commerce (utility, simplicity, digital literacy, social, and infrastructural) are directly related to consumer adoption intention. The conceptual framework is shown in Figure 1.

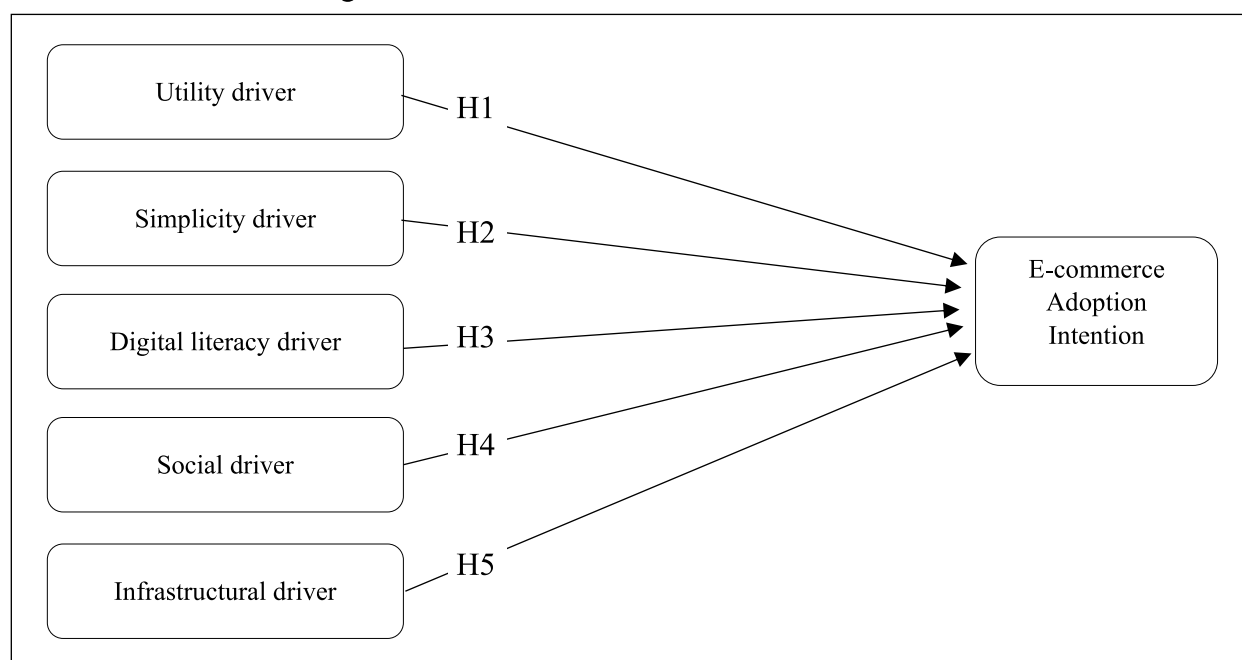


Figure 1. The Conceptual framework

Figure 1 shows the five drivers of e-commerce adoption namely utility, simplicity, digital literacy, social and infrastructural. All the five drivers have a direct impact on e-commerce adoption intention. The study measured adoption behaviour using an intention scale because the target population was yet to adopt e-commerce. Thus, an e-commerce adoption intention variable was used to proxy actual adoption

2.5.1 Utility driver and e-commerce adoption intention

Utility driver describes how consumers' perceptions of the worth or advantages of adopting e-commerce can either encourage or discourage them (Makudza, Sandada and Madzikanda, 2021). In this sense, customers might engage in e-commerce if they thought it would be beneficial to them. Benefits relate to the reduction of costs and promotion of consumer value (Makudza, Sandada and Madzikanda, 2021). The idea that consumers adopt new technology more frequently when there is perceived value is also supported by empirical evidence. According to Alghanam, Khatib and Hiari (2022)'s study, consumers' use of digital platforms was positively impacted by their perceptions of the advantages of the technology. Cirqueira et al. (2020) similarly observed a high, positive correlation between perceived advantages and acceptance of technology, supporting the findings of Alghanam, Khatib and Hiari (2022).

Considering the foregoing background, the following hypothesis is posited:

H₁: Utility driver is positively associated with e-commerce adoption intention

2.5.2 Simplicity driver and e-commerce adoption intention

Simplicity driver describes how easy or difficult it is to use e-commerce. This has to do with how user-friendly e-commerce platforms are thought to be. Consumers are more likely to adopt e-commerce when the platforms are simple to use, easy to search for information on, easy to compare brands on, and easy to make purchases on (Makudza, Sandada and Madzikanda, 2021). The idea that user-friendly technologies are simple to adopt is supported by empirical research. Li, Zhao and Pu (2020) revealed that regardless of culture or subcultural groupings, effortless IT solutions were more favoured in a cross-cultural research of IT adoption. That was consistent with the findings of Halim, Januardin and Hebrard (2020) investigation, which found a significant correlation between effort to use a system and behavioural intention. Hence, e-commerce systems that are simple to use and comprehend drive purchase intention positively (Halim, Januardin and Hebrard, 2020). Consumers felt that easy-to-use e-commerce tools encourage them to become engaged customers who shop with enthusiasm online (Wilson, 2019).

Guided by the presented empirical evidence, the following hypothesis is suggested:

H₂: Simplicity driver is positively associated with e-commerce adoption intention.

2.5.3 Digital literacy driver and e-commerce adoption intention

An individual's skill and motivation to use e-commerce to complete a specific task or job are judged and viewed as digital literacy or intrinsic driver. Digital literacy driver relates to a person's overall affective response to utilizing a system and represents how they feel about using technology, whether favourably or unfavourably (Makudza, Sandada and Madzikanda, 2021). There is evidence from several research, including one by Chatterjee, Kar and Dwivedi (2022) indicating a consumer's personal actions have an impact on his intention to utilize technology. Their research also show that customers are not puppets hurled from one end of the digital and environmental spectrum to the other without conscious deliberation. Further, Khoa, Ha and Ngoc (2022) discovered that customers are rational beings in their particular capacities.

In light of the foregoing discussion, it can be hypothesised that:

H₃: Digital literacy driver is positively associated with e-commerce adoption intention.

2.5.4 Social driver and e-commerce adoption intention

The social driver is the fourth element of the conceptual framework. The social driver describes the impact of the social and environmental factors on a person's decision to engage in e-commerce. It is how a person views how society, community, and culture support or discourage e-commerce (Makudza, Sandada and Madzikanda, 2021). A study was conducted by Marandu, Makudza and Ngwenya (2019) came to the conclusion that social factors are a crucial component of consumers' purchase intentions. The same idea was backed by Yusoff et al. (2021), who discovered that the social influence of other entrepreneurs had a substantial impact on other entrepreneurs' use of e-commerce. A direct, favourable correlation between social support and e-commerce is further supported by Subagja (2023) who came to the conclusion that people who shop do not act in a vacuum; rather, they are both impacted by and have an impact on others.

Guided by the foregoing literature, the following hypothesis is made:

H₄: Social driver is positively associated with e-commerce adoption intention.

2.5.5 Infrastructural driver and e-commerce adoption intention

The infrastructural driver refers to the degree of accessibility, affordability and availability of the hardware and software components of e-commerce. Smartphone accessibility, dependable internet connectivity, and social support facilitate customer adoption of e-commerce (Makudza, Sandada and Madzikanda, 2021). Gupta and Arora (2020) discovered that the effectiveness and efficiency of the ICT infrastructure within a given institution greatly influences its ability to succeed. This was also the conclusion reached by Tu and Yang (2019) who studied the adoption of e-commerce in the purchase of electric vehicles. Soh et al. (2020) discovered using a survey research methodology that the absence of infrastructure, such as fast Internet and other necessary computer gear, was a significant barrier to adoption and use of digital resources.

In light of the foregoing, the following hypothesis is presented:

H₅: Infrastructure driver is positively associated with e-commerce adoption intention.

3. Methodology

The study targeted ZIMPOST customers, who act as e-commerce users, aged from 18 years and above. A mall-intercept survey was employed at selected ZIMPOST branches in all ten provinces of Zimbabwe. The study used a systematic random sampling procedure. However, given a low consumer traffic at most ZIMPOST's branches, the study initially targeted all customers instore, and then maintained a standardised sampling interval. Since the complete sampling frame for ZIMPOST's customers could not be established, the study calculated the sample size using the formulae for infinite target population. A minimum sample size of 1385 was computed. Prior usage of e-commerce platforms was not a prerequisite for one to qualify as a respondent. That was because the study sought to even target those who had never used ZIMPOST e-commerce and to appreciate the drivers which would motivate them to unfreeze their status quo in favour of ZIMPOST e-commerce activities. The study also targeted both the urban and the rural community. This follows the need to have a nationwide understanding of e-commerce regardless of the social standing of respondents.

The questionnaire was the primary data collection tool. The e-commerce adoption drivers of questionnaire were anchored on the 5-point Likert scale ranging from 1 (representing Strongly Disagree) to 5 (representing Strongly Agree). The measurement scales for the e-commerce adoption drivers were adapted from Makudza, Sandada and Madzikanda (2021); whilst the dependent variable was informed by Orji, Ojadi and Okwara (2021). Research assistants were recruited and selected to gather data during the survey. Most of the research assistants had first degrees or higher and experience in similar assignments. Following the training, all research assistants and their team leaders pretested the questionnaires in Harare at selected ZIMPOST branches. After data collection, quantitative data was cleaned and analysed using Statistical Products and Services Solutions former Statistical Package for Social Sciences (SPSS Version 26). Reliability of the instrument was measured using the Cronbach Alpha test, with a cut-off of 0.7. All constructs surpassed the cutoff point, with the least value being 0.761 (Infrastructure). Data were analysed using descriptive statistics and stepwise multiple linear regression analysis. To ascertain the multi-collinearity of independent variables, the Variance Inflation Factor (VIF) statistics were computed.

4. Findings and Results

A representative response frequency of 1031 responses was obtained and validated giving rise to an acceptable response rate of 74.4% (Fincham, 2008). These responses came from respondents from a diverse background, as indicated in Table 2.

Table 2. The demographic attributes of participants

Provincial representation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bulawayo	93	9.0	9.0	9.0
	Harare	90	8.7	8.7	17.7
	Manicaland	176	17.1	17.1	34.8
	Mashonaland Central	86	8.3	8.3	43.2
	Mashonaland East	100	9.7	9.7	52.9
	Mashonaland West	89	8.6	8.6	61.5
	Masvingo	115	11.2	11.2	72.6
	Matabeleland North	59	5.7	5.7	78.4
	Matabeleland South	52	5.0	5.0	83.4
	Midlands	171	16.6	16.6	100.0
	Total	1031	100.0	100.0	
Gender of participants					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	336	32.6	32.6	32.6
	Male	695	67.4	67.4	100.0
	Total	1031	100.0	100.0	
Participant's age range					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 to 25	169	16.4	16.4	16.4
	26 to 35	298	28.9	28.9	45.3
	36 to 45	303	29.4	29.4	74.7
	46 to 55	181	17.6	17.6	92.2
	Above 55	80	7.8	7.8	100.0
	Total	1031	100.0	100.0	

Highest academic qualifications of participants					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certificate	161	15.6	15.6	15.6
	Degree	201	19.5	19.5	35.1
	Diploma	231	22.4	22.4	57.5
	High School	397	38.5	38.5	96.0
	Post Graduate Degree	41	4.0	4.0	100.0
	Total	1031	100.0	100.0	
Settlement Type					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	443	43.0	43.0	43.0
	Urban	588	57.0	57.0	100.0
	Total	1031	100.0	100.0	

The majority of individual responses came from Manicaland and Midlands Provinces, whilst the least representation was recorded for Matabeleland North and South, with 5.27% and 5.04% representation, respectively. Variations in provincial representations owed to variations in respondent traffic among provinces during data collection. Female representation was 32.6% whilst male representation was 67.4%. Based on randomisation in data collection, the study inferred that the majority of ZIMPOST customers are males. The age category of 36 to 45 years recorded the highest frequency of 29.4%. In essence, young-adults and mature adults formulated the bulk of the sample. The elderly and the young were least represented. The frequency results herein give an idea of ZIMPOST being a company which mainly attracts the middle aged. Most respondents (38.51%) reported that high school education was their highest academic qualification. There was a fair representation of diploma, degree and certificate holders. Respondents with post graduate qualifications were least represented with a frequency of only 3.98%. These reports inform that the majority of ZIMPOST customers are well educated with over 61% of them reporting an above high school qualification. The urban settlement attracted more respondents. 57% of the data was obtained from urban dwellers, with 43% coming from rural areas. The results further present an opportunity for expansion given that even the rural populace are also active customers of ZIMPOST.

4.1 Descriptive statistics of the drivers of e-commerce adoption

Table 3 presents the descriptive statistics for the e-commerce drivers.

Table 3. Descriptive and reliability test for the drivers of e-commerce adoption

E-commerce Adoption Drivers	Mean	Standard Deviation	Cronbach's Alpha	No. of Items	N
Utility	3.04	1.366	0.952	5	1031
Simplicity	2.67	1.277	0.934	4	1031
Social	3.81	1.170	0.948	6	1031
Infrastructure	3.38	1.328	0.761	5	1031
Digital literacy	3.45	1.356	0.884	5	1031

In terms of reliability of the constructs, Table 3 shows that the research questionnaire for e-commerce adoption was reliable because the constructs' Cronbach's values were above the minimum threshold value of 0.7.

Zimbabweans are mainly driven by the society towards using e-commerce. The social driver recorded the highest mean score, with an acceptable standard deviation ($M = 3.81$, $SD = 1.170$). This means that significant members of the society have a greater influence in motivating others to use electronic commerce. The greatest social influence was coming from peers, superiors, family, workmates or school mates and community; in that order.

Digital literacy driver recorded the second highest influence ($M = 3.45$, $SD = 1.356$). This means that ZIMPOST customers have the ability to use digital platforms. There is high digital literacy among ZIMPOST customers, which presents a ready pool of customers to cling on e-commerce systems, should barriers to e-commerce adoption are eliminated. The third driver which influences adoption of e-commerce is the infrastructural driver ($M = 3.38$, $SD = 1.328$). This driver relates to the availability of hardware, software and support services. Availability of a smartphone gadget and internet access proved to be the highest contributors of this driver. Analysis of this driver further proved that ZIMPOST has a very poor online support services (least mean of 2.60). Thus, to drive users towards e-commerce, there is a strong need for ZIMPOST to have a strong online support system.

A mediocre mean score for utility driver ($M = 3.04$, $SD = 1.366$) shows that the benefits of using e-commerce are still middling. Respondents do not see or feel the major benefits of buying or selling using ZIMPOST's e-commerce platform. This presents the need for ZIMPOST to promote its online services highlighting the benefits of the e-commerce platforms. A low mean score for simplicity of ($M = 2.67$, $SD = 1.277$) shows that the e-commerce platforms themselves are not easy to use for the ZIMPOST customers, hence, the need to simplify navigation, language, visuals, web designs, page discoverability, online payment and access.

4.2 The relationship between e-commerce adoption drivers and e-commerce consumer adoption intention behaviour at ZIMPOST

The association between e-commerce adoption drivers and e-commerce consumer adoption intention behaviour at ZIMPOST was tested using regression test statistic. To ascertain the multi-collinearity of independent variables, the Variance Inflation Factor (VIF) and Tolerance statistics were computed in Table 4.

Table 4. Multicollinearity diagnosis

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Simplicity	.370	2.702
	Social	.630	1.586
	Infrastructure	.509	1.965
	Utility	.368	2.715
	Digital Literacy	.574	1.742
a. Dependent Variable: Adoption intention			

Table 4 shows that all VIF values ranged between 1.586 and 2.715. According to Siti (2015) if the VIF values are below 5 then the assumption of multi-collinearity would have passed. Likewise, all Tolerance values were below the cutoff of 2.0. Thus, the model passed the regression assumption and proceeded to the regression analysis.

To examine the relationship between e-commerce adoption and user adoption behaviour, stepwise regression was used as shown in Table 4. Stepwise multiple linear regression is a statistical technique used to find the best combination of independent variables that can explain the variability in a dependent variable (Arkkelin, 2014). The process involves adding or removing independent variables from the model in a stepwise manner based on certain criteria, such as the significance level of the variables or the change in the model's overall fit (Pallant, 2020).

The study validated the five drivers of e-commerce adoption as simplicity, social, infrastructure, utility and digital literacy. These five drivers were tested for association with user adoption intention. The study used adoption intention variable instead of actual adoption variable because the majority of respondents had not adopted ZIMPOST's e-commerce, hence the need to relate adoption drivers to e-commerce adoption intention.

Table 5. E-commerce adoption models summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.553 ^a	.306	.306	3.45259
2	.621 ^b	.385	.384	3.25160
3	.631 ^c	.398	.397	3.21806
4	.634 ^d	.402	.400	3.21049
a. Predictors: (Constant), Utility				
b. Predictors: (Constant), Utility, Infrastructure				
c. Predictors: (Constant), Utility, Infrastructure, Social				
d. Predictors: (Constant), Utility, Infrastructure, Social, Digital literacy				

Table 5 presents the e-commerce adoption regression models' summary. Four models are presented with varied r-squared values. Model 4 with four independent variables (Utility, Infrastructure, Social, Utility) was adopted for analysis because it explains intention to use e-commerce by the highest rate of 40.0% (adjusted $r^2 = 0.400$). Model 5 which included the fourth independent variable, simplicity driver, had an insignificant F change, thus the study accepted the e-commerce adoption model with 4 drivers. The fifth driver was thus excluded from analysis because it failed to add strength to Model 4.

Model 4 shows a very strong and positive correlation between predictor variables (Utility, Infrastructure, Social, Utility) and user intention to use e-commerce, with a coefficient of 0.634. This means that if the predictor variables of the model are enhanced, behavioural intention to adopt e-commerce would be significantly enhanced.

To ascertain the level of significance of the Stepwise regression models, Table 6 results were examined.

Table 6. ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5413.727	1	5413.727	454.156	.000 ^b
	Residual	12266.091	1029	11.920		
	Total	17679.818	1030			
2	Regression	6810.883	2	3405.441	322.092	.000 ^c
	Residual	10868.935	1028	10.573		
	Total	17679.818	1030			
3	Regression	7044.290	3	2348.097	226.740	.000 ^d
	Residual	10635.528	1027	10.356		
	Total	17679.818	1030			
4	Regression	7104.611	4	1776.153	172.321	.000 ^e
	Residual	10575.207	1026	10.307		
	Total	17679.818	1030			
a. Dependent Variable: User Adoption Intention						
b. Predictors: (Constant), Utility						
c. Predictors: (Constant), Utility, Infrastructure						
d. Predictors: (Constant), Utility, Infrastructure, Social						
e. Predictors: (Constant), Utility, Infrastructure, Social, Digital Literacy						

Table 6 indicates that e-business adoption Model 4 was statistically significant. The p-value of Model 4 was 0.00 ($P < 0.05$), with an F coefficient of 172.312. These results can be interpreted to mean that user behavioural intention to adopt e-commerce can be explained using utility, infrastructure, social, digital literacy drivers. If ever e-commerce is to be adopted, ZIMPOST and other related companies should enhance the predictor variables identified in this study.

Table 7 shows the impact of each e-commerce adoption driver on user's intention to adopt e-commerce at ZIMPOST.

Table 7. Coefficients of the model predictors

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.647	.282		37.743	.000
	Utility	.366	.017	.553	21.311	.000
2	(Constant)	7.453	.384		19.390	.000
	Utility	.270	.018	.409	14.871	.000
	Infrastructure	.275	.024	.316	11.495	.000
3	(Constant)	6.460	.434		14.878	.000
	Utility	.261	.018	.394	14.380	.000
	Infrastructure	.223	.026	.256	8.558	.000
	Social	.088	.019	.133	4.747	.000
4	(Constant)	6.258	.441		14.184	.000
	Utility	.272	.019	.412	14.548	.000
	Infrastructure	.190	.029	.219	6.491	.000
	Social	.071	.020	.107	3.549	.000
	Digital Literacy	.057	.023	.077	2.419	.016
a. Dependent Variable: User Adoption Intention						

Guided by Table 7, Model 4 was used to test hypotheses. Utility driver recorded a positive association with user e-commerce adoption intention ($\beta = 0.412$; $P = 0.00$; $T = 14.548$ $n = 1031$). This shows that when customers are aware of the utility (value or benefits of ZIMPOST's e-commerce services, their propensity to use e-commerce services for ZIMPOST are augmented. In other words, ZIMPOST should crystalize the benefits of using e-commerce services through marketing communications so as to drive user intention behaviour. The same results were supported by Štefko (2019) and Cirqueira et al. (2020). The study therefore accepts **H₁** and concludes that utility driver positively impacts on user adoption of e-commerce.

Digital literacy recorded the least impact with e-commerce adoption intention of users ($\beta = 0.077$, $P = 0.016$, $T = 2.419$, $n = 1031$). This association confirms that the more knowledgeable customers are with digital technologies, the higher the chance of developing an intention to use e-commerce systems. The study thus accepts **H₃** and concludes that digital literacy positively impacts on user adoption intention of e-commerce. Previous studies also found related results. Chatterjee, Kar and Dwivedi. (2022) found that a consumer's personal actions have an impact on his intention to utilize technology. Makudza, Sandada and Madzikanda (2021) also found that customers are not puppets hurled from one end of the digital and environmental spectrum to the other without conscious deliberation. Further, Khoa, Ha and Ngoc (2022) discovered that customers are rational beings in their particular capacities.

The social driver ($\beta = 0.107$; $P = 0.00$, $T = 3.549$, $n = 1031$) recorded a weak, positive and significant impact with e-commerce adoption intention behaviour. This shows that ZIMPOST's e-commerce platform should be acceptable by the society. When significant members of the society support the use of e-commerce business, the propensity to adopt e-commerce is enhanced. Therefore, **H₄** was accepted. Marandu, Makudza and Ngwenya (2019) came to the conclusion that social factors are a crucial component of consumers' purchase intentions. According to their study, social impact is felt on how consumers are influenced to buy online or to use e-commerce systems. The same idea was backed by Yusoff et al. (2021), who discovered that the social influence of other entrepreneurs had a substantial impact on other entrepreneurs' use of e-commerce. A direct, favourable correlation between social support and e-commerce is further supported by Subagja (2023).

The second highest impact was found between the infrastructural driver and e-commerce adoption intention ($\beta = 0.219$; $P = 0.00$, $T = 6.491$, $n = 1031$). This shows that there is a positive and statistically significant relationship between e-commerce infrastructure and e-commerce adoption intention behaviour (**H₅**). Availability of hardware, software and support services are the infrastructural aspects which drive e-commerce adoption intention behaviour. The current finding finds support in previous empirical findings. Gupta and Arora (2020) discovered that the effectiveness and efficiency of the ICT infrastructure within a given institution greatly influences its ability to succeed. This was also the conclusion reached by Tu and Yang (2019) that availability of hardware, software and support services influence purchase behaviour of customers. Soh et al. (2020) discovered that the absence of infrastructure, such as fast Internet and other necessary computer gear, was a significant barrier to the adoption and use of digital resources.

The study analysed the relationship between effort expectancy and adoption intention. Model 3 (Table 2) excluded the effort expectancy variable from analysis. Table 8 presents the results of the excluded variables.

Table 8. Excluded variable from the e-commerce adoption model

Excluded Variables^a						
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
4	Simplicity	-.009 ^e	-.222	.824	-.007	.370
a. Dependent Variable: Adoption Intention						
e. Predictors in the Model: (Constant), Utility, Infrastructure, Social, Digital Literacy						

Table 8 shows that the simplicity driver was excluded from the e-commerce adoption model 4 because it was statistically insignificant ($\beta = -0.009$, $T = -0.222$; $P = 0.824$). Based on the foregoing statistical analysis, the second hypothesis (**H₂**) was not supported. These results mean that users were not driven to use e-commerce technology by the extent to which it is easy or hard to use. In other words, whether e-commerce is easy or difficult, that does not drive intention to use e-commerce among the target group. This result diverged from previous empirical findings, considering that some previous studies found a statistically significant positive association between simplicity driver and adoption intention (Marandu, Makudza and Ngwenya, 2019; Halim, Januardin and Hebrard, 2020).

5. Recommendations

ZIMPOST should have a strong marketing team which is vibrant and well versed in digital marketing so as to crystalise the benefits of ZIMPOST's e-commerce systems. Aggressive mass media marketing campaign is critical to concertize customers of the existence of digital services at ZIMPOST. The objective of the campaign should be to create awareness of the e-commerce services and to substantiate the benefits of e-commerce. Merely using digital marketing only may not yield the desired results in some remote communities with poor connectivity, yet it is a useful strategy in urban and peri urban centres; hence the need for integrated marketing communications.

The importance of the society was found to be significantly related to e-commerce adoption. Hence, the study recommends targeting customers' e-commerce behaviour through social influencers and reference groups. This entails brand endorsing by a known social figure with significant positive influence. It also includes targeting social reference groups such as religious groups, institutions and social media groupings.

ZIMPOST should also revamp the existing e-commerce systems through augmenting customer experience at each digital touch point along the digital customer journey. This recommendation entails using a user-friendly payment gateway which are compatible with many Zimbabweans such as mobile money, ZIPIT services and cash on delivery (COD). It also informs redesigning systems that are more compatible with smartphones than computers, given that more users use smartphones. ZIMPOST should further capitalise on the existing general e-commerce adoption rates by engaging with customers on social networks, hence, the need for chatbot business as a communication mouth piece of the company.

The company should seek to motivate employees to improve digital services. This can be done through employee training and retraining, offering incentives for e-commerce development. For instance, allowing employees to grow with their e-commerce idea. That is, if an employee suggests a way to market or introduce a new digital product, such an employee should be allowed to manage and spearhead the project.

The study recommends the government, telecommunications players and other related stakeholders to improve the internet infrastructure in the country. Without good connectivity, it may be a challenge for users to adopt e-commerce. Further, ZIMPOST is recommended to introduce a 24-hour help desk online to assist users with any online shopping challenges. Further, a direct chat plugin may be added to allow for users to directly chat with the help desk, or any specialised service which they may require to complete a sale.

6. Conclusions

The study concludes Zimbabweans are mainly driven by the society towards using e-commerce. The greatest social influence was coming from peers, superiors, family, workmates or school mates and community; in that order. The greater the social influence, the higher the probability of e-commerce adoption. The study further concludes that availability of digital infrastructure (hardware, software and support services) significantly drives e-commerce adoption behaviour of users. Customers can also be drawn to using ZIMPOST's e-commerce services through crystalizing the benefits of the e-commerce platforms (utility driver). The study also concludes that most customers of ZIMPOST are digitally literate, and their literacy also improves their chance of adopting ZIMPOST's e-commerce services. The study disconfirmed the impact of the simplicity driver on user adoption. Thus, means that simplifying navigation, language, visuals, web designs, page discoverability, online payment and access have no effect on user adoption intention behaviour. The study encountered some limitations. First, the study tested five drivers only of e-commerce adoption. There are many other e-commerce determinants which are discussed in literature. However, the tested determinants were reliably tested over time and refined to suite the digital needs. Secondly, the results presented have a generalisation limitation as they can only be generalised to ZIMPOST and may not reflect well on the general e-commerce adoption in Zimbabwe. The study recommends future researchers to retest the model presented in this study in different industries so as to validate its robustness. Only one variable of the conceptual model proved to be insignificant, hence, retesting of the model will validate its efficacy. Future studies may also add moderating variables such as technological experience, trust and security.

7. References

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