

# E-Commerce Adoption and Development in An African Context: A Literature Reiview of Botswana

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## Abstract

The aim of this study is to provide a comprehensive analysis of existing research on the acceptance and development of e-commerce in Botswana, with the intention of providing suggestions for future research areas. This study utilized Google Scholar's comprehensive coverage of journal databases to collect academic papers published between the years 2000 and 2023. A Boolean search was employed to analyze these publications. A total of 65 papers were reviewed. The authors identified a gap in the existing research on the implementation and progress of electronic commerce in Botswana, noting that the current studies were outdated. The study identified a range of factors that influence the development and adoption of e-commerce in Botswana. These factors include organizational aspects, internet pricing, security concerns, electricity interruptions, market suitability, innovation, management dedication, government policies, telecommunication infrastructure, e-commerce skills, credit card usage, slow internet connectivity, organization size, website design, gender, financing, and regulatory matters, among others. Subsequent research should ascertain the validity of the existing findings, embrace technology and innovation frameworks, and explore the adoption of e-commerce from the customer's standpoint.

Though this review provides valuable insights into e-commerce development in Botswana and other developing economies, but its conclusions should be approached cautiously due to its limited selection of studies and reliance on past and existing research. Furthermore, it covers Botswana's e-commerce adoption, a topic understudied in the literature. It also discusses the factors affecting e-commerce uptake in developing nations and the policy implications for fostering it. E-commerce can boost economic diversification and inclusive growth in developing nations, according to the assessment. Future research should focus on e-commerce's impact on economic diversification and inclusive growth, particularly in emerging nations like Botswana.

**Keywords:** Africa, Botswana, Southern African Development Community (SADC), Electronic Commerce (ecommerce), adoption, development, Information Communication Technology (ICT), Small and Medium Enterprises (SME), Mobile Commerce (m-commerce), payments

## 1.0 INTRODUCTION

E-commerce, an expanding sector of the worldwide economy, offers prospects and difficulties for emerging economies (Giovanardi, & Nicolaidis, 2022). This study centers on Botswana, a nation that, despite making substantial progress in internet and mobile usage, falls behind in the adoption of e-commerce. Botswana's distinctive status as a middle-income nation within the Southern African

Development Community (SADC) presents an intriguing opportunity to examine the intricacies of e-commerce adoption in comparable settings.

Despite Botswana's substantial investments in its information and communication technology (ICT) infrastructure and the liberalization of its telecoms sector, the development of e-commerce in the country remains inadequate (Anwar & Graham, 2022). This disparity prompts significant inquiries on the impediments to embracing e-commerce and the tactics that could surmount these hindrances. Nevertheless, there has been a scarcity of study on e-commerce in Botswana, accompanied by a significant decline in scholarly engagement in recent times.

The objective of this study is to address this deficiency by undertaking an extensive examination of the current body of literature on the growth and acceptance of e-commerce in Botswana. By doing this, it aims to recognize significant patterns, obstacles, and possibilities, and to suggest pathways for future investigation. The study's objective is to enhance policy and practice by offering valuable insights into the determinants of e-commerce adoption.

The paper is organized in the following manner, Theoretical framework, presentation of a comprehensive examination of the available literature on the adoption of e-commerce in Botswana. It identifies and analyzes the main topics and areas where further research is needed and outlines the technique employed for conducting the literature review. Lastly it outlines the discoveries made throughout the review, and examines findings within the framework of wider patterns in the adoption of e-commerce. The study finishes by providing suggestions for future research and policy actions.

### **1.1 Background and Context**

E-commerce, the buying and selling of goods and services over the internet, has revolutionized the way businesses operate globally (Asbari, 2023). It has opened up new markets, reduced operational costs, and provided unprecedented convenience for consumers. In Africa, the e-commerce landscape has seen remarkable growth, with the continent predicted to have the most significant number of digital buyers growth worldwide by 2026 (Signé, 2023). However, the adoption and development of e-commerce vary significantly across countries. This study focuses on Botswana, a developing economy in Southern Africa, where e-commerce is still in its nascent stages.

### **1.2 Problem Statement and Research Questions**

Despite the potential benefits of e-commerce, its adoption in Botswana has been slow and faced numerous challenges. This study seeks to address the following research questions:

1. What are the factors influencing the adoption of e-commerce in Botswana?
2. What are the challenges faced by businesses in Botswana in adopting e-commerce?
3. How can these challenges be addressed to enhance e-commerce adoption in Botswana?

### **1.3 Objectives and Significance of the Study**

The primary objective of this study is to unpack the adoption of e-commerce in Botswana and its implications for other developing economies. The study aims to identify the factors influencing e-commerce adoption, the challenges faced, and potential solutions to these challenges. The findings of this study will provide valuable insights for policymakers, business owners, and researchers interested in e-commerce in developing economies. It will contribute to the body of knowledge on e-commerce adoption in developing economies and provide a basis for future research

## 2.0 THEORETICAL FRAMEWORKS

Initial research on e-commerce utilized the Technological adoption Model (TAM) to examine the societal adoption of this practice. Africa and Botswana can similarly adopt this established approach. Faya & Paper (2015) states that there is a growing interest among scholars and industry executives to have a deeper understanding of online customer behavior due to the increasing importance of e-commerce as a business platform. The technology acceptance model (TAM) is a commonly employed framework among researchers to understand behavior within the field of information systems. The elements of the Technology Acceptance Model (TAM) consist of perceived utility, perceived usability, and intents. The TAM framework has undergone expansion, including the development of TAM2, TAM3, and the Unified Theory of Acceptance and Use of Technology (UTAUT). These expansions involve the incorporation of supplementary external variables, aiming to enhance the framework's ability to make accurate predictions. Khoo et al. (2018) state that the diffusion of innovation (DOI) and the technical acceptance model (TAM) are two adoption frameworks that also contribute to the research on e-commerce adoption. Moreover, the five DOI criteria - relative advantages, compatibility, complexity, trial-ability, and observability - indicate that the qualities of an innovation may impact its adoption. However, the level of technological adoption is believed to be influenced by two key factors: perceived utility (the level of belief that using a specific system will enhance job performance) and perceived ease of use (the perceived level of difficulties and challenges in using a particular system). Abdulkhakeem, Edwards, and McDonald (2017) discovered that PERM and TOE theories are more effective in explaining the adoption of e-commerce by small and medium-sized enterprises (SMEs) in developing countries. Moreover, Abdulkhakeem, Edwards, and McDonald (2017) propose the utilization of TAM, UTAUT, and TPB as deterministic models that specifically concentrate on user aspects, in order to comprehend the user viewpoint regarding the adoption and advancement of e-commerce. This offers a chance to employ these models inside an African setting.

## 3.0 LITERATURE REVIEW

E-commerce has become a significant driver of economic growth, innovation, and competitiveness in the global market (Skare, Gavurova, & Rigelsky, 2023). E-commerce has revolutionized how people behave and buy online, particularly in developing economies such as Botswana (UNCTAD, 2022). This literature review explores the definition of e-commerce, the current state of e-commerce in Botswana, the challenges it faces, and its potential implications for other developing economies.

### 3.1 Definition of Ecommerce

Electronic commerce is defined as all aspects of business and market processes made possible by the Internet, according to Santos, Augusto, Vieira, Bacalhau, Sousa, & Pontes, 2023 and Kedah, (2023). Furthermore, e-commerce can be defined as the buying and selling of goods and/or services, as well as enabling financial transactions over the internet (Munoz, Holsapple, & Sasidharan, 2023), and it has enabled retailers to increase their physical presence as well as allow customers to purchase their products online (Taherdoost, & Madanchian, 2023). It has also helped in reducing operational costs, for example in marketing and advertising, as well as improving customer retention (Achmad, 2023). Furthermore, e-commerce can be defined as a new means of conducting business, a business model other than traditional "brick and mortar," hence a form of innovation in conducting business (Niu, & Zhao, 2023).

### 3.2 Significance of E-Commerce

In general, e-commerce can increase the competitiveness of the company that chooses to use it and increase customer satisfaction through faster deliveries. Most of the reviewed authors, old and new, agree that the main functions of e-commerce are to gain competitive advantage over rivals, improve internal and external business processes, and improve service management due to the speed, communication, and transportation of products and services (Ahi, Sinkovics, & Sinkovics, 2022; Gong, 2023; Munoz, Holsapple, & Sasidharan, 2023). These functions have replaced the traditional brick-and-mortar business model whereby retail shops and catalogues were mostly used.

Early pioneers in e-commerce research, such as Wigand (1997), projected that electronic channels would give all actors in the value chain direct access to the end consumer; as a result, there would be pressure to change the roles of current participants, notably intermediaries. By avoiding steps in the value chain and facilitating the reengineering of service and business operations, e-commerce aids restructuring. The power of direct Internet-based trade is significant and evident in the tourism sector because the majority of tourism services have traditionally been offered through middlemen. The benefits of electronic commerce apply to both goods and services, and they include increased process and operational performance, the potential for a greater choice of service or product offerings, and the capacity to reach new client demographics (OECD, 2023; UNCTAD, 2023; Munoz, Holsapple, & Sasidharan, 2023; Niu, & Zhao, 2023; Mohamad, Hassan, & Abd Elrahman, 2022; Jeong, Yi, & Kim, 2022). Based on observations, this is now beginning to be realized even in Botswana and other African countries, where banking and other services such as utility bill payments are available online.

### 3.3 E-commerce Landscape in Africa

The e-commerce sector in Africa has had substantial expansion, and it is projected that by 2026, the continent would have the highest increase in the number of digital buyers globally (Signe, 2023). The realm of digital payments has experienced swift expansion, driven by factors such as the rising prevalence of mobile devices, the widening availability of internet connectivity, and the rise of a growing middle class. According to Signe (2023), South Africa, Nigeria, and Kenya are in the forefront of the digital revolution in Africa, with digital payment platforms experiencing broad acceptance.

(Bwalya, 2011) claims that in the case of Africa, basic commercial processes, infrastructure, and systems are underdeveloped, which restricts the growth and adoption of e-Commerce applications. In an effort to promote the growth of e-Commerce applications, some African nations and regional groups, like the Southern African Development Community (SADC), are putting in place sound regulatory frameworks to ensure that e-Commerce applications and adoption is encouraged for the benefit of the citizenry. Additionally, purposeful actions and regulations are being implemented to establish a level playing field and enabling environment for the expansion of e-Commerce usage in various African countries, for example, Botswana liberalised its ICT environment to allow competition and deter monopoly through its telecommunication regulator, ([www.bocra.org.bw](http://www.bocra.org.bw), n.d.). Furthermore, Botswana has done some significant work in its previous National Development Plans (NDPs) according to ([gov.bw](http://gov.bw), n.d.) in order to develop its information and communication technology (ICT) sector. So far, she has laid the necessary international information and communication technology (ICT) infrastructure by investing in or buying shareholdings in the West Africa Cable System (WACS) and the East Africa Cable System (EAC).

According to Internet World Stats (IWS), Africa has the lowest Internet penetration rate among all continents, standing at 43%. This is lower than the global average of 58%, Asia's rate of 67%, Europe's

rate of 90%, and North America's rate of 93% (Internet World Stats, 2022). As of the end of 2018, Sub-Saharan Africa had a total of 456 million distinct mobile subscribers, indicating a subscriber penetration rate of 44% (Odhiambo, 2022). Moreover, a staggering 239 million persons, which accounts for almost 23% of the population, consistently utilize mobile internet in Africa.

Research in this field is essential as web-based businesses, Net Enabled Organizations (NEO), and scholars are still striving to understand and predict online customer behavior, which also influences the adoption and growth of e-commerce. Wang, Zhu, Wang, Zhou, & Cheng (2023) state that in technologically advanced regions such as Asia Pacific and developed nations, e-commerce research is currently centered on post-adoption and process research. In contrast, e-commerce research in Botswana and Africa remains limited.

### 3.4 BARRIERS OF ECOMMERCE ADOPTION IN AFRICA

The research uncovers numerous obstacles that impede the progress of e-commerce in Botswana and other African nations. The factors that contribute to the challenges in e-commerce are internet marketing, organizational factors, ICT infrastructure, lack of skills, internet logistics and access, economic issues, political will, security and legal factors, customer demographic factors, internet development factors, and negative media reporting on e-commerce (Uzoka et al., 2006; Shemi& Procter, 2013; Shemi& Procter, 2018; Olatokun&Kebonye, 2010). Asare, Gopolang, and Mogotlhwane (2012) discovered that ICT skills did not hinder the acceptance and advancement of e-commerce in Botswana and Ghana.

Notwithstanding these obstacles, Pedroncelli (2017) observes that the e-commerce industry in Africa is experiencing substantial growth on an annual basis. The potential for electronic commerce (e-commerce) in Africa is immense, yet, there are common constraints pertaining to finances, infrastructure, socio-political factors, and the digital divide that persistently present challenges, particularly for international expansion. As per Pedroncelli (2017), African enterprises presently account for barely 2% of consumer e-commerce, despite the significant potential in this sector. According to the forecast by the International Trade Center, the African e-commerce business is expected to reach \$50 billion by 2018, a significant increase from its value of \$8 billion in 2013.

The ITC (2015) also highlights various factors that hinder the progress and acceptance of e-commerce in Botswana and Africa. These include the absence of a domestic e-commerce industry, limitations on international banking transactions, exclusion from global online marketplaces, inadequate infrastructure, unfamiliarity with import duties and sales tax, lack of trust and concerns regarding security, socio-political obstacles, excessive regulation, and challenges with internet connectivity. The aforementioned concerns can be broadly classified into financial, infrastructure, socio-political, and digital disparities.

The SADC World Economic Forum Consultation on e-Readiness emphasizes that economic and social variables are obstacles to progress in the SADC region (WEF, 2008).

Curiously, although the tourism industry plays a crucial part in Botswana's economy, most studies on the growth and acceptance of e-commerce in Botswana did not include tourism enterprises in their research samples. This is unexpected considering the potential enhancement that e-commerce might bring to this industry. Maswera, Edwards, and Dawson (2009) propose that African tourism organizations can utilize e-commerce, which relies on the Internet's infrastructure, to access previously inaccessible markets. This, in turn, can result in the generation of additional foreign money. The implementation and utilization of e-commerce in industrialized nations have produced substantial outcomes, leading to a substantial surge in

profits within the travel and tourist sector. Botswana and other African nations have the potential to gain significant advantages by adopting e-commerce in their tourism industries.

### 3.5 E-commerce in Botswana

Although Africa's e-commerce sector has experienced significant expansion, e-commerce in Botswana lags behind its economic counterparts in terms of development. The majority of e-commerce interfaces are found on social media platforms and necessitate transactions to be completed either through phone communication or in-person interactions (Soleimani, 2021). Nevertheless, the Government of Botswana (GoB) has endeavored to reduce the expense of internet usage by providing significant concessions to internet companies for the rental of fiber-optic cables owned by the government (Soleimani, 2021).

In 2021, the Government of Bangladesh (GoB) and the United Nations Conference on Trade and Development (UNCTAD) jointly published the National ICT Policy Review and e-Commerce Strategy study. The paper examined the obstacles faced by e-commerce in Botswana, including substandard service quality and exorbitant data expenses, and proposed measures to alleviate these issues (UNCTAD, 2021). Regarding Botswana, the World Bank provides data indicating a population of 2.4 million and a Gross Domestic Product (GDP) per capita of USD 6405 as of 2022. According to IWS, the number of internet users in 2021 was estimated to be 1.47 million (51.3%) and 1.2236 million (50.4%). However, Botswana's internet usage continues to be lower than the global average. Botswana has experienced a remarkable increase in Internet adoption and usage, with a growth rate of 7493% between 2000 and 2021, according to the World Bank (2021).

Botswana has made substantial progress in its past National Development Plans (NDPs) in the advancement of its information and communication technology (ICT) sector (UNCTAD, 2022). The nation has made investments in global information and communication technology infrastructure by acquiring ownership stakes in the West Africa Cable System (WACS) and the East Africa Cable System (EAC). The purpose of this investment was to enhance both local and international internet capacity, with the ultimate goal of reducing the digital divide. In addition, Botswana implemented deregulation measures in the telecommunications sector by modifying legislation to permit increased competition among landline, mobile, and Internet service providers. Presently, Botswana is granting more licenses to telecommunications businesses for establishment within its borders (Botswana Communications Regulatory Authority, 2022).

Despite seeing development, Botswana's e-commerce adoption remains relatively low, as indicated by its rating of 100 out of 154 countries in the 2019 UNCTAD B2C E-commerce Index study. This falls below the global average. According to the World Bank (2021), Botswana's mobile phone penetration rate has increased from 0.97% in 1998 to 161% in 2021, placing it 12th among 144 nations.

F. Uzoka has made substantial contributions to this topic, conducting multiple studies that investigate various facets of e-commerce adoption in Botswana. In 2020, Uzoka conducted a study titled "Organizational, Environmental and Technological Determinants of E-Commerce Adoption in Botswana" (Uzoka, 2020). This study expanded upon previous research. In 2006, Uzoka and Seleka conducted a case study on the growth of business-to-consumer (B2C) electronic commerce in Africa, with a specific focus on Botswana (Mohamad, Hassan, & Abd Elrahman, 2022). Uzoka, Seleka, and Khengere conducted an analysis of the factors that hinder the adoption of e-commerce in developing countries, focusing on both environmental and organizational aspects (Uzoka, Seleka, & Khengere, 2007). Uzoka examined the impact of organizational factors on the adoption of e-commerce in a developing country environment,

utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) (Uzoka, 2008). In addition, Uzoka, Shemi, and Seleka conducted a study on the factors that affect the adoption of e-commerce in a developing country (Uzoka, Shemi, & Seleka, 2007). Uzoka and Ndzinge conducted an empirical analysis in 2009 to study the adoption and acceptance of biometric technology in Botswana (Uzoka & Ndzinge, 2009). The authors Uzoka and Ndzinge (2009) conducted a study on the determinants of biometric technology adoption in a developing country.

Bwalya (2011) contends that the limited development of commercial procedures, infrastructure, and systems in Africa hinders the expansion and acceptance of e-Commerce applications. Nevertheless, certain African states and regional entities, such as the Southern African Development Community (SADC), are actively implementing effective legislative frameworks to promote the adoption of e-Commerce for the advantage of their inhabitants. Botswana, for example, implemented measures to open up its ICT sector to competition and prevent monopolies. This was done through the establishment of the Botswana Communications Regulatory Authority (n.d.).

Additional scholars have also made valuable contributions to the ongoing discussion. As an example, in 2021, A. Cartelli conducted a study on the connection between Paleographic Research and its practical use in teaching (Cartelli, 2021). In 2021, an unidentified author created a theoretical structure to examine the influence of Information Security Policies in Large Organizations (Anonymous, 2021). In 2020, Shien Lin examined the importance of maintaining high data quality in engineering firms for effective asset management (Lin, 2020). In 2020, R. Burkhard assessed the impact of conflict-management systems on the effectiveness of groupware through a normative, simulation-based method (Burkhard, 2020). The research field also encompasses investigations into the impact of software on improving learning (Richardson, 2021), the interrelationship between software and its environment (Nguyen, 2020), and the disparities in implementation between DSS/BI and other information systems (Mallach, 2020).

The body of literature on e-commerce in Botswana and its linked domains covers a diverse array of subjects, which accurately reflects the complex and varied character of this business. (Esiefarienrhe & Mokeresete, 2022) explores the lack of effective exploitation of ICT infrastructures in Botswana, despite substantial investments made in this domain. The researchers utilized a mixed-methods strategy, which involved the integration of qualitative and quantitative data collecting and analysis. Their efforts led to the creation of software prototypes for several services, which were selected as essential for enhancing service delivery and ICT accessibility nationwide through a poll.

A separate study, while not specifically centered on Botswana, presents potentially significant perspectives for the country. (Chen, Qiu, Wang, & Yang, 2022) examine the influence of governmental measures on cross-border e-commerce. Their discoveries could be crucial in comprehending and influencing the policy landscape for electronic commerce in Botswana.

Xiahou and Harada (2022) present a customer churn prediction model for B2C e-commerce that utilizes k-means customer segmentation and support vector machine (SVM) prediction. Their findings illustrate substantial enhancements in every prediction metric after client segmentation, highlighting the significance of k-means clustering segmentation.

A recent study conducted by Chen, Nan, Liu, Peng, and Ming (2022) examines the impact of consumer fairness concerns on the selection of selling schemes by e-commerce platforms. The researchers discover that the strength of fairness considerations and the platform charge are crucial factors in determining the ideal selling scheme option for the platform.

Overall, these studies provide valuable insights into different elements of e-commerce, including the use of ICT infrastructure, the effects of regulatory measures, predicting client turnover, and making choices regarding marketing schemes. These important insights could be crucial for comprehending and maneuvering through the e-commerce terrain in Botswana and other emerging nations.

### 3.5.1 Private Sector Development and E-commerce in Botswana

E-commerce offers potential benefits to Botswana enterprises in the form of increased participation in international value chains, greater market access and reach, and improved internal and market efficiency, as well as lower transactions costs (Sunday Standard, n.d.). The GoB has made private sector development a key component of its economic development strategy, with e-commerce playing a crucial role in boosting export growth in Botswana and accelerating the country’s export development (Sunday Standard, n.d.). The Table below shows a summary of Google Scholar Boolean Search results for Botswana e-commerce adoption studies.

**Table 1: Summary of Google Scholar Boolean Search immediate results**

Topic	Years	Authors	Country/Context/Setting	Method
E-commerce development and adoption factors	2006, 2007, 2008, 2009, 2009, 2009	Uzoka& Seleka (2006), Uzoka et al. (2007), Uzoka (2008), Uzoka et al. (2007), Renken&Moswetsi (2006), Jobodwana (2009), Maswera, Edwards, Dawson (2009)	Botswana Industry, South Africa Industry	Quantitative
E-commerce and Entrepreneurship, adoption, readiness, and barriers in SMEs	2006, 2010, 2012, 2013, 2013, 2018, 2011	Shemi& Procter (2018), Shemi& Procter (2013), Shemi& Procter (2013), Asare et al. (2012), Olatokun&Kebonye (2010), Zaied (2012), Mutula et al. (2006), Howe (2015), Bwalya (2011)	Botswana SME	Qualitative and quantitative
E-commerce adoption review	2018	Khoo et al. (2018)	Asia Pacific	Literature Review
E-commerce using theoretical models/framework in developing nations	2015, 2017, 2012	Abdulhakeem et al. (2017), Fayad& Paper (2015), Ekong et al. (2012)	United Kingdom, Asia Pacific, Nigeria	Literature review



An examination of Table 1 underscores the scarcity of literature pertaining to e-commerce development in Botswana. The majority of studies retrieved via Google Scholar search span from the year 2000 to 2013, with only a few papers from 2023, which are within the purview of this review. This highlights the need for more recent and comprehensive research in this area. The research landscape on e-commerce adoption in Botswana and its implications for other developing economies is broad and multifaceted. It encompasses various aspects, including organizational, environmental, and technological determinants, behavioral influences, and the role of biometric technology. This body of work provides a rich foundation for further exploration and understanding of this complex and critical issue.

#### 4.0 EMPIRICAL STUDIES ASSESSMENT

This part offers a comprehensive evaluation and analysis of the empirical research incorporated in the literature review. The text succinctly outlines the main discoveries and contributions of each study, emphasizing their significance in the advancement of B2C e-commerce in Botswana. The section recognizes the complex and diverse aspects of e-commerce adoption, encompassing different factors that influence it, including organizational, environmental, technological, and behavioral determinants. By incorporating research on the use of biometric technologies and mobile commerce, the analysis gains further complexity, as it explores different methods of conducting electronic business in developing nations. The section highlights the unique circumstances of Botswana and its position within the Southern African Development Community (SADC) block, providing valuable perspectives on the opportunities and obstacles of e-commerce in the area. Furthermore, it specifically targets the current deficiencies in scholarly research, highlighting the want for additional investigations in emerging nations and African settings. The inclusion of supplementary research on the online consumer experience and the chronological development of e-commerce studies enhances the assessment. In general, this section offers a thorough summary of the evaluated empirical research, emphasizing their importance and addition to the existing body of knowledge on the development of business-to-consumer e-commerce in Botswana. The literature study on B2C e-commerce development in Botswana encompasses a diverse array of studies that provide insights into different facets of the subject matter. A study conducted by Uzoka and Seleka (2006) examines the extent of e-commerce advancement in Botswana and uncovers a relatively low rate of acceptance among firms in the country. Xing (2018) conducted a study that investigates the influence of Information and Communication Technologies (ICT) and e-commerce adoption on bilateral trade flows, with a particular focus on the ability of ICT to unlock the potential for electronic trade in developing nations. Jaiyeoba, Chimbise, and Roberts-Lombard (2018) examine the use and contentment of e-services among clients of medical aid programs in Botswana, emphasizing the correlation between usage, advantages, and satisfaction. In research conducted by Moloi (2009), the preparedness of electronic records in the public sector is assessed. The report highlights a deficiency in policy and legislative framework as a hindrance to the preparation of electronic records in Botswana. Adam, Alhassan, and Afriyie (2020) examine the determinants of B2C e-commerce adoption on a global scale, with a particular focus on the significance of ICT access, human resource development, and the regulatory environment. In this study, Hassen, Rahim, and Shah (2019) conduct an examination of models that examine the factors influencing the adoption of e-commerce in developing nations. The authors specifically focus on the importance of building appropriate models for these contexts. Lesitaokana (2016) investigates the determinants of mobile phone adoption among young people in Botswana, with a particular focus on the significance of connectivity, affordability, and perceived utility. The study conducted by Uzoka, Shemi,

and Seleka (2007) examines the impact of behavioral factors on the adoption of e-commerce in developing nations. The study emphasizes the importance of perceived benefits, internet usage and complexity, accessibility, and management support. Alam, Omar, and Hashim (2011) examine the factors that affect the adoption of ICT in small and medium-sized enterprises (SMEs) in Malaysia. Their findings may provide valuable insights that are applicable to the setting of Botswana.

Uzoka and Ndzinge (2009) conducted studies to analyze the elements that influence the acceptance of biometric technology in Botswana. These studies highlight the importance of ease of use, communication, organization size, and kind. In Uzoka's (2008) study, the UTAUT model is used to investigate the impact of organizational factors on the adoption of e-commerce in Botswana. The study reveals that organization size, management support, communications, and information availability have a notable influence on e-commerce adoption. The authors Uzoka, Seleka, and Khengere (2007) offer a thorough examination of the progress of e-commerce in Botswana, focusing on the hindering effects of environmental and organizational factors. Uzoka (2020) presents a technology readiness model that investigates the elements that influence the adoption of e-commerce in Botswana. The study identifies organizational, internet marketing, and customer/logistic aspects as significant determinants. Collectively, these studies provide useful insights into the current status of B2C e-commerce development, the factors influencing its adoption, and the level of preparedness in Botswana. Additionally, they also consider pertinent factors from other emerging nations.

The research focuses on the factors that influence the adoption of e-commerce, including organizational, environmental, and technological variables. In his paper, Uzoka (2020) conducts a thorough examination of these factors, emphasizing their significant influence on the e-commerce environment in Botswana. Uzoka (2020) emphasizes the significance of comprehending the particular circumstances in which e-commerce is being implemented, encompassing the organizational frameworks, environmental circumstances, and technological capacities that are present.

Furthermore, the research explores the behavioral factors that impact the adoption of e-commerce. In their study, Uzoka, Shemi, and Seleka (2007) examine this issue, offering insights into the influence of individual and social behaviors on the adoption of e-commerce. Uzoka, Shemi, and Seleka (2007) propose that behavioral factors play an equally important role as organizational or technological elements in influencing the success of e-commerce adoption.

The research also investigates the impact of biometric technology on the uptake of e-commerce. In their study, Uzoka and Ndzinge (2009) empirically analyzed the adoption and acceptance of biometric technology in Botswana. They emphasized the potential of this technology in aiding the adoption of e-commerce. According to their research, biometric technology can greatly contribute to improving security and trust, both of which are crucial for the effective implementation of e-commerce (Uzoka & Ndzinge, 2009).

This studies establishes a comprehensive basis for further investigation and comprehension of the development of e-commerce in Botswana and its ramifications for other emerging economies. This emphasizes the complex nature of the issue, emphasizing the necessity for a holistic solution that considers several components, such as organizational, environmental, technological, and behavioral aspects (Uzoka, 2020; Uzoka, Shemi, & Seleka, 2007; Uzoka&Ndzinge, 2009). Therefore, it provides significant knowledge for policymakers, practitioners, and researchers who are interested in encouraging the development of e-commerce in emerging economies.

According to Khoo et al. (2018), research on e-commerce adoption can be categorized into six main themes: factors influencing e-commerce adoption, obstacles to e-commerce adoption, consequences of e-commerce adoption, the process of adopting e-commerce, enhancing e-commerce adoption, and attracting users to e-commerce websites. Zaied (2012) proposes that research on barriers to e-commerce can be classified into various areas, including social, economic, technical, political, organizational, legal, and regulatory. Khoo et al. (2018), Zaied (2012), Shemi & Procter (2013), Shemi & Procter (2018), Uzoka et al. (2007), Asare, Gopolang, and Mogotlhwane (2012), Uzoka (2008), and Ekong et al. (2012) have found that organizations that implement e-commerce in developing countries encounter challenges including inadequate telecommunications infrastructure, insufficiently skilled personnel for the development and maintenance of e-commerce platforms, and frequent power disruptions. The findings from previous tests conducted in 2018 and around ten years ago continue to yield comparable results.

Examining potential e-commerce alternatives, Jobodwana (2009) defines mobile commerce (M-commerce) as the act of purchasing and selling goods and services through mobile telephones or personal digital assistants (PDAs). M-commerce is gaining popularity in Africa as it serves as a supplementary or substitute method for traditional e-commerce. According to Ngubelanga and Duffett (2021), the increasing use of mobile apps has led to a global adoption of mobile commerce applications (MCA) by companies as an additional means of conducting business. Customers may now conveniently utilize their smartphones to search, order, locate, or transact at any time and in any location, owing to the implementation of Mobile Commerce Applications (MCA) in many business-to-consumer sectors such as banking, e-hailing, retail, and order and delivery services. MCA had a significant role in transforming the Fintech sector in Africa by introducing mobile money applications like MPESA, Orange Money, and MascomMyzaka. These applications added value by addressing and minimizing the issue of limited access to banking services in Africa. Nevertheless, there are assertions that "m-commerce" would ultimately surpass "e-commerce" as the favored approach for digital business transactions (Niu, & Zhao, 2023).

In addition, Bwalya (2011) suggests that the Southern African Development Community (SADC) block, to which Botswana belongs, has great potential for the development of e-Commerce and, more recently, mobile commerce (m-Commerce: ePayment, eTickets, eBanking, etc.), due to the increasing adoption of electronic technologies in the region. This can be attributed in part to prudent initiatives and laws that have created a conducive environment for e-commerce. However, there are ongoing challenges in the realm of e-commerce that the SME sector faces on a daily basis, as highlighted by scholars like Shemi and Procter (2013).

Recent studies by Hwang & Seo (2016) have extensively examined the online customer experience in the hospitality industry. This research is supported by the fact that tourism is the largest category for online spending and that online transactions are becoming more prevalent in the lodging industry. Thus, it is evident that business websites are crucial platforms for effectively providing a satisfactory experience that aligns with organizations' assertions (Dubs et al., 2003). Given the significant expansion of the internet and social media in customers' daily lives, the online customer experience will remain crucial.

Shemi & Procter (2013), Zaied (2012), and Uzoka et al. (2006) found that the majority of e-commerce studies were conducted in developed nations and the Asia-Pacific region. This is because e-commerce was still in its early stages in Botswana and many other African countries at that time. One of the first significant academic articles on ecommerce in Botswana was published in 2006. The article focused on the development of business-to-consumer (B2C) ecommerce in Africa, specifically using Botswana as a case study (Mohamad, Hassan, & Abd Elrahman, 2022). This research led to the creation of two important

papers: "Behavioral Influences on E-Commerce Adoption in a Developing Country Context" by Uzoka, Shemi, and Seleka (2007), and a case analysis that examined the environmental and organizational barriers to ecommerce adoption in developing countries. The studies conducted by Uzoka, Seleka, and Khengere in 2007 are foundational in the field of ecommerce adoption in Botswana. Uzoka's work in 2007 focuses on examining the influence of organizations on e-commerce adoption in a developing country context using UTAUT. (Uzoka & Ndzinge, 2009) investigated the factors affecting the adoption of biometric technology, as well as conduct an empirical analysis of its acceptance in Botswana. Alam, Alam, Omar, and Hashim (2011) conducted a study on Malaysia. This study applies the idea of perceived characteristics of innovating (PCI) to examine the adoption of information and communication technology (ICT) in small and medium-sized enterprises (SMEs) in Malaysia. The research is based on the work by Uzoka and Seleka (2006). In Uzoka's (2020) study, the author investigated the factors that influence the adoption of e-commerce in Botswana, specifically focusing on organizational, environmental, and technological determinants.

Despite claims of uneven distribution of Internet and e-commerce between affluent developed nations and impoverished developing ones, a significant portion (26%) of e-commerce adoption studies were actually focused on Southeast Asia, which consists of developing countries, as reported by Khoo & Ahmi&Saad (2018). Given that companies in underdeveloped countries have taken advantage of the e-commerce potential, it seems that concerns regarding the digital gap are no longer relevant. However, research conducted in developed nations were significantly more advanced compared to those in Southeast Asia, as they had already initiated efforts to enhance adoption rates.

## **5.0 E-Commerce Adoption in Botswana**

### **5.1 Overview of Botswana's economy and digital landscape**

Botswana, a landlocked country in Southern Africa, has one of the world's fastest-growing economies. The country's economy is largely dependent on mining, particularly diamonds, tourism, and services sector. In recent years, Botswana has made significant strides in digital transformation, with increased internet penetration and mobile phone usage (World Bank, 2023). The digital landscape in Botswana is rapidly evolving, with the government actively promoting digitalization as a means to diversify the economy and improve public service delivery. The Botswana Communications Regulatory Authority (BOCRA) has been instrumental in driving the country's digital agenda, including the promotion of e-commerce (BOCRA, 2023).

### **5.2 Analysis of e-commerce adoption in Botswana**

The adoption of e-commerce in Botswana is now in its early phases, but it is experiencing a consistent growth. The findings suggest that the rate of e-commerce adoption among firms in Botswana is still comparatively low. Although the country has a high level of e-readiness, there are obstacles and impediments, such as the absence of a regulatory and legislative framework, limits in infrastructure, and organizational constraints. This implies that there is potential for enhancement and heightened endeavors to encourage the use of e-commerce in the country. Nazir and Khan (2023) conducted a study which revealed that small and medium-sized enterprises (SMEs) in Botswana are progressively embracing e-commerce. This adoption is driven by a range of technological, organizational, and environmental factors. Nevertheless, the rate at which adoption occurs differs greatly among various sectors and regions, with metropolitan areas and industries like retail and services taking the lead.

**Table 2 : E-commerce Adoption in Botswana**

Factors	Description
Technological Factors	Internet connectivity, technological infrastructure, availability of e-commerce platforms (Hossain et al., 2023)
Organizational Factors	Business size, management support, employees' ICT skills (Nazir& Khan, 2023)
Environmental Factors	Government policies, legal and regulatory framework, customer readiness for e-commerce (Nazir& Khan, 2023)
Opportunities	Wider market reach, cost reduction, improved customer service, economic diversification, job creation, inclusive growth (World Bank, 2023)
Challenges	Inadequate ICT infrastructure, lack of digital skills, online security and privacy issues, lack of comprehensive legal and regulatory framework for e-commerce (Nazir& Khan, 2023; BOCRA, 2023)

**5.3 Factors influencing e-commerce adoption in Botswana**

Various determinants impact the implementation of e-commerce in Botswana. Technological elements, like internet access, technological infrastructure, and the presence of e-commerce platforms, have a significant impact (Hossain et al., 2023). The adoption of e-commerce is influenced by organizational characteristics such as the business's size, managerial support, and employees' ICT abilities (Nazir & Khan, 2023). In addition, environmental factors such as government policies, legal and regulatory framework, and customer preparedness for e-commerce have a crucial role (Nazir & Khan, 2023). Hwang & Seo (2016) assert that customers play a significant role as stakeholders in the advancement of e-commerce. Consequently, the online customer experience in e-commerce has garnered considerable interest from both scholars and practitioners in the broader business community over the past few decades. The studies emphasize multiple aspects that impact the adoption of e-commerce, encompassing organizational, environmental, technological, and behavioral drivers. Organizational size, management support, communication, information availability, ease of use, and compatibility are influential factors in determining the decision to adopt e-commerce. Gaining insight into and effectively dealing with these factors can assist in promoting the acceptance of e-commerce in Botswana as well as other developing nations.

**Table 3 : Organizational Factors Influencing E-commerce Adoption**

Variables/Observations	Empirical Findings	Reference
E-readiness	E-readiness of SMEs is crucial for the successful implementation of e-commerce.	Mbamba, U.O.L. (2023). Relationship between Organisational E-readiness and E-Commerce Implementation in Developing Countries: Perspectives from Tanzania. University of Dar es Salaam Library Journal.
Government Support	Local government facilities play a significant role in facilitating the	Harmawan, B.N. (2022). E-Readiness Of SMEs In Adoption Of E-Commerce Through Local Government Facilities. Journal IlmuAdministrasi: Media.

	adoption of e-commerce by SMEs.	
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#### 5.4 Opportunities and challenges for e-commerce in Botswana

Botswana can benefit from several prospects presented by e-commerce. It can assist firms in expanding their market reach, lowering operational expenses, and enhancing customer service. Moreover, e-commerce has the potential to enhance economic diversification, foster job creation, and promote inclusive growth, as stated by the World Bank in 2023.

Nevertheless, the implementation of e-commerce in Botswana faces many hurdles. These factors encompass insufficient information and communication technology infrastructure in certain regions, a deficiency of digital competencies among small and medium-sized enterprises, and concerns pertaining to online security and privacy (Nazir & Khan, 2023). Moreover, the absence of a complete legal and regulatory framework for electronic commerce is a substantial obstacle (BOCRA, 2023).

In order to surmount these obstacles and exploit the possibilities of e-commerce, it is imperative for Botswana to allocate resources towards ICT infrastructure, improve digital literacy, and create a favorable legislative and regulatory framework for e-commerce.

#### 5.0 Study Methodology

This study used Boolean search on Google Scholar search engine to retrieve studies on ecommerce adoption and development in Botswana in general between year 2000 and 2020, the reason for a 20 year range being limited results. The authors first conducted a search between the years 2010 and 2020 to retrieve the journal articles o ecommerce development and adoption in Botswana but, the results were very limited and then the authors expanded the Boolean search to include papers from 2000 to 2020 and the results improved and were summarized in Table 1, even though still limited but much better than the 2010 to 2020 Boolean search. It needs to be noted that we tried to limit the search to 10 years but the results were very limited, hence we increased the search to between 2000 and 2020. Additional literature from similar settings in Africa which were retrieved by the Boolean search were also reviewed. The review excluded developed nations and developing nations that are advanced in ecommerce adoption and development research.

As the search results moved on to the next pages, the years of publications and the results were falling completely out of the scope of this review paper. Articles that were inaccessible or locked were accessed through other means, like using university-subscribed databases. The study reviewed a sample of twenty articles that were retrieved from Google Scholar using a Boolean search of "ecommerce, development, and adoption in Botswana" due to the lack of a literature review on the subject in Botswana. We assessed the papers by looking at the author, year of publication, country where the study was conducted, framework or theory used, methodology used, context, findings, and gaps (see table 1). The reason for using the Google Scholar database is due to its wider coverage of journal range than several other databases, offering about 88% coverage. A previous study by computer scientists Madian Khabisa and C. Lee Giles of Pennsylvania State University, University Park, estimated the size of Google Scholar at 100 million documents, suggested that it covers about 88% of all scholarly documents accessible on the Web in English.

In addition to the academic literature, this research also considered relevant secondary sources such as newspaper reports, public policy documents, and industry reports. These sources provided supplementary

information and perspectives on e-commerce in Botswana, contributing to a more comprehensive understanding of the topic.

The review of literature and secondary sources involved a systematic approach, including search strategies, data collection, and analysis. Key themes, trends, and findings from the literature and secondary sources were identified and synthesized to generate meaningful insights and conclusions.

By conducting a comprehensive review of existing literature and considering relevant secondary sources, this research methodology provided a solid foundation for understanding the past state of e-commerce development and adoption in Botswana. It enabled the identification of key factors, challenges, and opportunities related to e-commerce in the country and helped generate recommendations for future initiatives and policies in the field.

## 6.0 Discussions and Findings

Our study identified a conspicuous deficiency of research about the progress and acceptance of e-commerce in Botswana, with a substantial cessation of research efforts in the preceding ten years. The research undertaken around ten years ago was primarily led by a small group of writers, namely AP Shemi and FME Uzoka, from 2005 to 2013. The most current study was released in 2018. Moreover, the study predominantly concentrated on small and medium enterprises (SMEs), examining the obstacles these organizations have while embracing e-commerce. Khoo, Ahmi, and Saad (2018) found that a significant portion (26%) of the selected publications on e-commerce adoption focused on Southeast Asia, namely developing countries. In contrast, research in wealthy nations has moved beyond the stage of simply adopting e-commerce.

The obstacles to the adoption of e-commerce that have been identified in prior research encompass a range of factors, such as exorbitant internet fees, concerns about internet security, frequent power outages, prevailing market conditions, insufficient innovation, inadequate management commitment, government policies, deficient infrastructure, literacy levels, limited credit card usage, sluggish internet speed, organizational size, subpar and user-unfriendly website design, legal and regulatory matters, limited utilization of online banking, issues with telecommunication infrastructure, consumer lack of skills in utilizing e-commerce, limited access to computers, a population without bank accounts, low internet penetration, resistance to change, and low wages. Zaied (2012) suggests that these hurdles can be classified into social, economic, technical, political, organizational, and legal and regulatory impediments. A recent study conducted by Foya and Garikayi (2021) in Zimbabwe, Africa, reaffirmed these findings. The study identified several barriers to the adoption of e-commerce during the Covid-19 pandemic in 2021, including limited computer ownership, inadequate telecommunication infrastructure, low smartphone ownership, financial constraints, unreliable network connectivity, slow internet speeds, and the absence of payment platforms for small and medium-sized enterprises (SMEs) and their customers. The difficulties highlighted in e-commerce development and adoption literature published 10 years ago are reflected in these current barriers, indicating that there has been little progress in the advancement of e-commerce development and adoption.

Furthermore, the study revealed a dearth of research focused on examining the acceptance and advancement of e-commerce from the standpoint of users or clients. According to Hwang & Seo (2016), customers play a crucial role in the advancement of e-commerce, and the online customer experience in e-commerce has received considerable focus from researchers and professionals in recent years. Hence, it

is imperative to examine the viewpoint of users or customers in the adoption and advancement of e-commerce.

Furthermore, the research did not include important industries in Botswana, such as tourism and airlines, which heavily rely on e-commerce. These companies offer their services through online platforms, catering to both local and international markets. Particularly, the tourism industry focuses on serving tourists from industrialized nations such as Germany, Japan, and the United States of America (USA).

Furthermore, according to the data presented in Table 1, much of the little research carried out on e-commerce in Botswana did not employ theoretical frameworks such as the Technology Acceptance Model. FME Uzoka conducted a study from the Botswana perspective and tested several models, including the theory of planned behaviour (TPB), which was found to be validated by the study's findings. Furthermore, certain studies have uncovered compelling discoveries that warrant additional examination. For instance, Uzoka (2008) utilized the Unified Theory of Acceptance and Use of Technology (UTAUT) and proposed that gender adversely influences the adoption of e-commerce, whereas organization size, management support, communications, and information accessibility have beneficial effects. Moreover, the study served as a subsequent investigation to previous research that emphasized the organizational aspects of adapting to e-commerce. Additionally, it offered insights on the implementation of e-commerce in a nation with xenophobic tendencies, such as Botswana. Additional investigation is necessary to ascertain the reasons behind the influence of xenophobia, company size, and gender on the adoption of e-commerce. The available research mostly concentrated on small and medium-sized enterprises. Several studies have presented contradictory conclusions. For instance, Asare, Gopolang, and Mogotlhwane (2012) did not identify skills as a factor affecting e-commerce adoption and development in Botswana, although Shemi and Procter (2013) and Uzoka and Seleka (2006) did.

## **7.0 Conclusion**

### **7.1 Summary of key findings**

The research highlights the challenges faced by Botswana in implementing e-commerce, despite obstacles such as insufficient ICT infrastructure, limited digital skills, and concerns over online security and privacy. Government support, investment in ICT infrastructure, and a favorable legal and regulatory environment are crucial factors affecting e-commerce adoption. Previous studies have identified factors such as expensive internet fees, internet security concerns, power outages, and market conditions. However, Botswana's research has neglected sectors like tourism and the airline industry, and failed to consider customer perspectives. Most studies in Botswana did not use technology and innovation theoretical models to understand e-commerce progress. Future research should assess the validity of previous findings, assess changes in adoption rates, and validate Botswana's low score in the UNCTAD B2C E-commerce Index report. It is also necessary to investigate the underlying factors that led to the pause in e-commerce acceptance and advancement, such as the emergence of mobile commerce. Various frameworks and theoretical models should be evaluated for their applicability in Botswana and other African countries.

### **7.2 Contributions to Knowledge**

This review contributes to the existing body of knowledge by providing a comprehensive overview of e-commerce adoption in Botswana, a context that has been relatively underexplored in the literature. It also offers insights into the factors influencing e-commerce adoption in developing economies more broadly, and highlights the policy implications for promoting e-commerce. The review further underscores the



potential of e-commerce in driving economic diversification and inclusive growth in developing economies.

### 7.3 Limitations and Further Research

This analysis provides valuable insights into e-commerce in Botswana and other developing economies, but it relies on limited studies and references. Future research should focus on empirical studies on the impact of e-commerce on economic diversification and inclusive growth, especially in Botswana and developing economies. It is also important to examine user perspectives, website design, interaction, user capabilities, past experiences, and emotional states. Social media's influence on online consumer experiences is also crucial. In Botswana, consumer experience may suffer due to slow internet and power disruptions, hindering e-commerce adoption. Further research is needed to understand the variables affecting e-commerce adoption and develop targeted interventions and tactics.

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