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E-COMMERCE WITHIN THE FRAMEWORK OF THE AFRICAN CONTINENTAL FREE TRADE AREA (AfCFTA)

How could E-commerce fuel SMEs' participation in the AfCFTA?

E-COMMERCE WITHIN THE FRAMEWORK OF THE AFRICAN CONTINENTAL FREE TRADE AREA (AfCFTA)

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Disclaimer

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LIST OF ACRONYMS

AfCFTA	African Continental Free Trade Area
AU	African Union
COMESA	Common Market for Eastern and Southern Africa
EAC	East African Community
ECOWAS	Economic Community of West African States
ICT	Information and Communication Technology
ITA	International Trade Administration
LPI	Logistics Performance Index
MSMEs	Micro, Small, and Medium-sized Enterprises
SADC	Southern African Development Community
SMEs	Small and Medium-sized Enterprises
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

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FOREWORD

The African continent stands at a historic crossroads. The African Continental Free Trade Area (AfCFTA) represents the most ambitious economic transformation initiative in its history, with strong potential to unlock unprecedented opportunities for the 1.6 billion people in the continent. AfCFTA will contribute to accelerating economic growth, generating employment, and alleviating poverty across the continent by establishing the world's largest single market for goods and services. It aims to integrate African economies through a unified market, facilitating intra-African trade and shifting the continent away from reliance on raw commodity exports toward a more industrialized and diversified economic base. This transition fosters regional value chains, attracts investment, and enhances Africa's global competitiveness.

Central to this transformation are small and medium-sized enterprises (SMEs), the engine of Africa's economy. The AfCFTA places particular emphasis on empowering SME's, particularly those led by women and youth, while advancing digital trade protocols and green initiatives. SMEs are the backbone of Africa's economy, accounting for approximately 85% of employment and contributing around 35% to GDP. The AfCFTA presents a unique opportunity for SMEs to expand their market reach and integrate into regional and continental value chains. By leveraging technology and e-commerce platforms, SMEs can overcome logistical barriers and access broader markets, enhancing their competitiveness and resilience.

In line with these recent developments and the ongoing negotiations for the AfCFTA Protocol on e-Commerce, this study is both timely and highly relevant, addressing two key areas: SMEs and e-commerce. The study examines the current state and future potential of e-commerce within the framework of AfCFTA, with a particular focus on how it can fuel the SME participation in Africa. The analysis identifies regulatory barriers, assesses the e-readiness of the Continent, and provides actionable recommendations for policymakers, firms, and donors to enhance digital trade.

The focus on e-commerce represents a pivotal component of modern trade, especially in the digital age, with global e-commerce valued at approximately US$6.42 trillion in 2025. In contrast, Africa's e-commerce market is projected to exceed US$40 billion by 2025 and potentially reach US$60 billion by 2027, representing only about 0.6% of the global value.

The study offers useful conclusions and recommendations for all stakeholders through AfCFTA as it represents an opportunity to foster a conducive environment for digital trade. The findings indicate that by addressing regulatory, infrastructural, and socio-economic challenges, Africa can harness the transformative power of e-commerce to drive inclusive growth and prosperity across the Continent.

We extend our sincere gratitude to all contributors who made this study possible. This collaboration between the Islamic Development Bank (IsDB), the International Trade Centre (ITC), and the Islamic Centre for Development of Trade (ICDT) demonstrates the power of partnership in action. It leverages partnerships to help member countries and regional bodies harmonize development efforts and address shared challenges through digital trade.

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EXECUTIVE SUMMARY

This comprehensive study examines the current state and future potential of e-commerce within the framework of the African Continental Free Trade Area (AfCFTA), with a particular focus on how it can fuel the participation of Small and Medium-sized Enterprises (SMEs) in Africa. The analysis identifies regulatory barriers, assesses the e-readiness of the continent, and provides actionable recommendations for policymakers, firms, and donors to enhance digital trade.

E-commerce has become a pivotal component of modern trade, especially in the digital age, with global e-commerce growing by 30% between 2014 and 2019 and projected to reach approximately $4.28 trillion in 2021. However, Africa's contribution to this booming market remains below 0.5%, indicating a significant lag behind other regions. Despite this, the AfCFTA is seen as a potential catalyst for bridging this gap by fostering an inclusive digital trade environment.

1.Regulatory frameworks for e-commerce in Africa

Overview of the current regulatory landscape: tariffs on ICT goods are a significant barrier to developing Africa's digital infrastructure. the reluctance of many African countries to participate in WTO Information Technology Agreements further exacerbates this issue, with only a few nations like Egypt and Morocco being parties to such agreements. High tariff rates on ICT goods within Africa impede intra-Africa imports and reduce affordability.

Telecom regulations and competition: limited telecommunications liberalization and stringent licensing requirements are significant barriers to investment. in many African countries, governments hold substantial shares in telecom companies, which undermines competition. The absence of passive infrastructure sharing obligations also contributes to a less favourable investment climate.

Cross-border data policies and domestic data protection: The lack of agreements facilitating open transfers of cross-border data flows and varying degrees of domestic data protection and privacy policies are highlighted as hurdles to investment in data-related infrastructure like data centers. These governance challenges must be addressed to foster a conducive environment for digital infrastructure investment and data trade across Africa.

The African Continental Free Trade Area (AfCFTA) and E-commerce: The AfCFTA, signed by 54 AU member states, aims to promote intracontinental trade and investment by reducing or eliminating tariffs and nontariff barriers to trade. With a joint GDP of approximately $3.4 trillion and a population of roughly 1.4 billion people, the AfCFTA has significant potential to boost intra-African trade and encourage e-commerce development. The ongoing negotiations for the AfCFTA Protocol on E-Commerce aim to harmonize digital economy regulations across Africa, providing a unique opportunity for member states to operate under a unified framework.

SMEs opportunities in e-commerce within AfCFTA: SMEs play a significant role in Africa's economy, contributing around 85% of employment and 35% to GDP. The AfCFTA offers opportunities for SMEs to expand their market reach and integrate into regional and continental value chains. Leveraging technology and e-commerce platforms can help SMEs overcome logistical hurdles and reach a broader audience.

2. Brief review of Africa's e-commerce ecosystem

Definition of an E-commerce ecosystem: The e-commerce ecosystem encompasses a broad range of online business activities, from digital goods and services to marketing, customer support, and transaction management. The ecosystem's vitality is enhanced with each new entrant, increasing its value and offerings. Consumers provide feedback, data suppliers refine business models, and developers collaborate with platforms to enhance functionalities. Public policies play a crucial role in creating an enabling environment for the ecosystem's growth.

Assessment of Africa's E-readiness for E-commerce

Infrastructure availability: Internet connectivity is essential for digital trade. While Africa has seen significant growth in internet users, regional disparities persist. Mobile broadband has driven internet penetration, but fixed broadband remains underdeveloped.

Regulatory and government initiatives: African countries like Nigeria, South Africa, and Ethiopia have implemented strategies to address legal, infrastructural, and accessibility barriers. However, a harmonized approach at both national and regional levels is essential for fostering e-commerce growth.

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Market size and access: The e-commerce market in Africa is expected to grow rapidly, with projections indicating over 500 million users by 2025. However, financial barriers and limited access to digital payment solutions remain significant challenges.

Digital literacy and skills development: Improving digital literacy and skills is crucial for unlocking the potential of e-commerce. Tailored training programs and inclusive educational paradigms can empower SMEs and individuals to use digital technologies effectively.

Startups and SMEs in E-commerce: Startups and SMEs are leveraging e-commerce platforms to reach wider audiences. Despite infrastructure limitations and varying regulations, their adaptability and resilience drive the evolution of e-commerce in Africa.

Development of E-commerce Platforms in the African Ecosystem:

Growth and behaviour of E-commerce platforms: Digital platforms like Jumia and Konga are expanding beyond traditional retail to offer a range of services, enhancing the value proposition for consumers and businesses.

Trade portals: National and regional trade facilitation portals improve transparency and streamline trade operations. These digital infrastructures are critical for enhancing cross-border trade.
Mobile optimization: Given the dominance of mobile devices, optimizing e-commerce platforms for mobile use is imperative. However, the high cost of mobile services and devices remains a barrier.

Security measures and cybersecurity: trust in digital transactions relies on robust security measures. addressing cybersecurity challenges is crucial for promoting e-commerce growth.

Payment systems

Overview of payment methods: while mobile money has revolutionized financial services in Africa, financial inclusion remains a challenge. Interoperability in payment systems is essential for reducing transaction costs and promoting digital trade.

Challenges for digital Payments: The lack of interoperability and regulatory constraints pose significant barriers. Localization requirements and new tax regimes also hinder the growth of fintech firms.

> While mobile money has revolutionized financial services in Africa, financial inclusion remains a challenge. Interoperability in payment systems is essential for reducing transaction costs and promoting digital trade.

Role of fintech in advancing payment solutions: fintech innovation offers alternative payment solutions, but regulatory frameworks must address consumer protection, data privacy, and cybersecurity concerns.

Logistics development in Africa: Africa's logistics performance index highlights the need for improved infrastructure. Innovative solutions like Egypt Post's services for SMEs and Nigeria Postal Service's use of what3words are improving delivery efficiency.

Consumer behaviour: Significant growth in e-commerce users is projected by 2027. However, the persistence of cash transactions and socio-economic barriers must be addressed to enhance digital financial services adoption.

Conclusion and recommendations

E-commerce holds significant untapped potential for economic development in Africa. The AfCFTA provides a unique opportunity to create a conducive environment for digital trade, but strategic interventions are necessary to overcome existing barriers. By addressing regulatory, infrastructural, and socio-economic challenges, Africa can harness the transformative power of e-commerce to drive inclusive growth and prosperity across the continent. Following recommendations are provided.

For countries:

- Adapt regulatory frameworks to support e-commerce, focusing on reducing tariffs on ICT goods and liberalizing telecom sectors.

- Improve distribution and logistics infrastructure through targeted investments and industrial policies.
- Create registries and networking platforms for e-commerce sites to build consumer trust.
- Support SMEs with financial incentives and training to transition to e-commerce.
- Enhance data protection and cybersecurity measures.
- Promote accessible e-payment solutions to advance financial inclusion.
- Foster regional cooperation and harmonization of policies under the AfCFTA to boost intra-African trade.

For firms/platforms:

- Invest in user-friendly websites and mobile apps optimized for various devices.
- Prioritize payment security and convenience to build consumer trust.
- Leverage data analytics to understand consumer behavior and tailor offerings accordingly.
- Collaborate with logistics providers to improve delivery services.

For donors:

- Support capacity-building initiatives to improve digital literacy and skills development.
- Fund infrastructure projects that enhance internet connectivity and logistics capabilities.
- Promote public-private partnerships to drive innovation and investment in e-commerce.

For the African Union/AfCFTA:

- Finalize and implement the AfCFTA Protocol on Digital Trade to create a harmonized regulatory framework.
- Promote digital skills development and innovation through targeted policies.
- Enhance cooperation among member states on cybersecurity and data protection issues.

INTRODUCTION

E-commerce is a crucial aspect of modern trade, particularly in the digital age. The e-commerce landscape has grown exponentially around the world, with an increasing number of online marketplaces offering a wide range of products and services. Over the past decade, e-commerce has dominated the retail sector, driven by technological advancements, and increasing consumer participation. From 2014 to 2019, e-commerce grew by 30%, with the growth trend continuing to this day. In 2021 alone, global e-commerce sales will reach approximately $4.28 trillion. In 2023, global e-commerce sales reached an estimated 5.8 trillion U.S. dollars. Global ecommerce sales are forecast to hit $6.3 trillion in 2024. The growth rate for the same year was around 20%. The main contributors to this booming e-commerce landscape are China, the United States, and the United Kingdom, with China leading the way in terms of e-commerce revenue generated.

E-commerce is a crucial aspect of modern trade, particularly in the digital age. The e-commerce landscape has grown exponentially around the world, with an increasing number of online marketplaces offering a wide range of products and services. Over the past decade, e-commerce has dominated the retail sector, driven by technological advancements, and increasing consumer participation. From 2014 to 2019, e-commerce grew by 30%, with the growth trend continuing to this day. In 2021 alone, global e-commerce sales will reach approximately $4.28 trillion. In 2023, global e-commerce sales reached an estimated 5.8 trillion U.S. dollars. Global ecommerce sales are forecast to hit $6.3 trillion in 2024. The growth rate for the same year was around 20%. The main contributors to this booming e-commerce landscape are China, the United States, and the United Kingdom, with China leading the way in terms of e-commerce revenue generated.

Despite the universal surge in digital transactions, Africa's e-commerce landscape remains underdeveloped. Africa's contribution to the global e-commerce market is less than 0.5%, according to estimates by the United Nations Conference on Trade and Development (UNCTAD). This indicates a significant disparity in participation compared to other regions.

The African Continental Free Trade Area (AfCFTA) aims to bridge the gap by recognizing the crucial role of digital trade. It introduces and accelerates the development of the ‹e-commerce protocol' to catalyze e-commerce growth across the continent. However, the efficacy of these measures remains uncertain. There is skepticism about the potential of e-commerce in Africa due to the observed decline of 5% in consumer visits to e-commerce platforms between 2017 and 2019. This decline occurred during a period of exponential e-commerce expansion elsewhere. However, the COVID-19 pandemic may have changed the situation, potentially reversing the previous downward trend. The pandemic has accelerated the adoption of digital technologies and changed consumer behavior, which could create new opportunities for

> E-commerce has the potential to offer many opportunities for SMEs in Africa. Unlike traditional brick-and-mortar setups, e-commerce platforms provide SMEs with a cost-effective way to showcase their products and services to a broader audience, transcending geographical constraints.

e-commerce growth in Africa under the AfCFTA.

Small and Medium Enterprises (SMEs) are essential for Africa's inclusive socio-economic development and growth. They generate work opportunities, income, and wealth, which enhances poverty reduction. SMEs make up around 80% of jobs in Africa, making them a significant driver of socio-economic growth. In Sub-Saharan Africa alone, there are an estimated 44 million SMEs. Moreover, the AfCFTA offers the potential to broaden SMEs' access to regional and continental export markets. For instance, in African countries like Uganda, Ethiopia, and Kenya, up to 90% of the population is employed by SMEs (World Bank, 2019). SMEs facilitate invention, innovation, and the development of new ideas and technologies.

E-commerce has the potential to offer many opportunities for SMEs in Africa. Unlike traditional brick-and-mortar setups, e-commerce platforms provide SMEs with a cost-effective way to showcase their products and services to a broader audience, transcending geographical constraints. In a continent with vast distances and fragmented markets, e-commerce enables SMEs to overcome logistical hurdles and reach customers beyond their local communities. Additionally, e-commerce provides SMEs with valuable tools for market research, customer engagement, and data analytics. This equips them with insights to tailor their offerings and optimize their operations. E-commerce lowers the barriers to entry, allowing SMEs with limited resources and access to capital to compete more equitably with larger enterprises.

The untapped potential of e-commerce in Africa is significant, given the continent's burgeoning population, growing middle class, and increasing internet penetration. There is a vast market waiting to be explored. To achieve this potential, it is necessary to carefully examine the landscape, confront obstacles directly, and chart a course towards digital competitiveness. Africa's low e-readiness is a significant barrier, so strategic interventions are essential to harness the transformative power of e-commerce and usher in a new era of economic prosperity across the continent.

The aim of this paper is to examine the regulatory and readiness landscape of the e-commerce ecosystem in Africa, focusing on the influence of the African Continental Free Trade Area (AfCFTA) and to provide policy recommendations to support SMEs so they can benefit from the opportunities offered by the AfCFTA to enhance digital trade. It will identify regulatory barriers that impede the participation of small and medium-sized enterprises (SMEs) in e-commerce. Additionally, it will conduct a thorough evaluation of Africa's e-commerce ecosystem, including its technical infrastructure and preparedness for advancement. The paper aims to provide practical recommendations to policymakers by analyzing these factors.

The paper is structured in three chapters. The first chapter describes the regulatory frameworks relevant to e-commerce in Africa, demonstrate how the AfCFTA can create a landmark regulatory framework for e-commerce in Africa and describe the key regulatory issues in order to enhance SMEs' participation in e-commerce in Africa. The second chapter reviews the state of e-readiness within Africa and delves deeper into selected foundational technical areas associated with E-commerce. As such, it will serve as a resource base for government officials on the current status of E-commerce development in the continent. The third chapter will consolidate the key findings of the study to provide critical and concise guidance for policymakers to support SMEs to develop their activities in the e-commerce sector at the local and regional levels.

CHAPTER-01

E-COMMERCE REGULATION & THE PROMOTION OF SME TRADE

1.1. Regulatory Frameworks for E-commerce in Africa

1.1.1. Overview of the current regulatory landscape

In the realm of trade and tariffs, the presence of tariffs on Information and Communication Technology (ICT) goods poses a significant hindrance to Africa's digital infrastructure development. The reluctance of many African countries to participate in WTO Information Technology Agreements exacerbates this issue, with only a few nations, notably Egypt and Morocco, being parties to such agreements. This lack of participation contributes significantly to the restrictiveness of tariffs applied to ICT goods. Additionally, high tariff rates on ICT goods within Africa itself impede intra-Africa imports and diminish the affordability of such products. Countries like Cameroon, Chad, Ethiopia, Gabon, and Senegal exhibit particularly restrictive tariff regimes. While no African nation imposes trade defense measures like anti-dumping duties on ICT goods, the exclusion of ICT goods from tariffs under the AfCFTA offers a pathway towards liberalizing trade in this sector.

Telecom regulations and competition further influence investment dynamics in Africa's telecommunications sector. Limited telecommunications liberalization, coupled with stringent licensing requirements and governments' significant shares in telecom companies, undermine competition. The absence of passive infrastructure sharing obligations in many countries contributes to a less favorable investment climate. Although certain countries, such as Madagascar and Rwanda, demonstrate more liberal telecom landscapes, most nations have governments holding substantial shares in telecommunications entities. Moreover, the lack of adherence to the WTO Telecom Reference Paper and limited passive infrastructure sharing obligations exacerbate these challenges, creating barriers to investment and competition.

Regarding cross-border data policies and domestic data protection, governance issues emerge as potential hurdles to investment in data-related infrastructure like data centers. None of the sampled African countries has committed to agreements facilitating open transfers of cross-border data flows, indicating a prevailing conditional flow regime on data. Additionally, limited regulations exist to prohibit local processing requirements of personal data. Domestic data protection and privacy policies vary across nations, with varying degrees of restriction. Notably, minimum data retention periods range widely among countries, with implications for privacy and data security. Overall, addressing these governance challenges is essential for fostering a conducive environment for digital infrastructure investment and data trade across Africa.

1.1.2. Examples from African Union (AU) member states

The AU's 'Digital Transformation Strategy for Africa (2020–2030)' (AU, 2020) aims to create an integrated and inclusive digital society and economy in Africa to improve quality of life, strengthen economic sectors and ensure diversification and development. It looks to harness digital technologies to transform African societies and economies, promote African integration, create jobs, reduce the digital divide and contribute to poverty reduction. In terms of e-commerce, the strategy aims to build a secure 'Digital Single Market' in Africa by 2030 through the AfCFTA, harmonize policies and regulations to strengthen intra-African trade, enable the coherence of future digital policies and strategies at the regional and national levels, promote data security (cybercrime, consumer protection etc.), and promote policies that foster digital trade. More specifically, it seeks to promote postal services, particularly their digitalization, as these tend to be significant providers of financial accounts (thereby promoting financial inclusion), which can be used to engage in ecommerce. It also aims to reduce barriers to cross-border digital trade, develop a regulatory framework for e-commerce at the continental level, promote cross-border money transfer, improve the regulatory environment for financial and payment services, reduce unjustified geo-blocking, support the adoption of electronic payment systems (particularly in peri urban and rural areas), promote e-commerce skills training and resolve postal issues such as package delivery and the lack of a physical address.

1.1.3. Overview of African Supranational and Intergovernmental Organizations

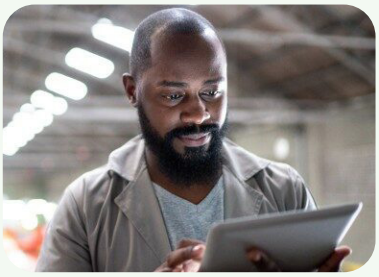
The African continent is home to several supranational and intergovernmental organizations, each with its objectives, structures, and focus. These organizations, which span all regions of Africa, play a critical role in shaping policy and fostering cooperation and integration among member states.

One of the most notable of these entities is the African Continental Free Trade Area (AfCFTA), represented. It represents an ambitious effort to boost intra-African trade, including e-commerce. The AfCFTA, which came into effect on January 1, 2021, is the largest free trade area in the world in terms of the number of participating countries. By eliminating tariffs on most goods and services, the AfCFTA aims to create a single African market of more than 1.2 billion consumers with a combined GDP

BOX 1. CASE STUDIES OF E-COMMERCE OF SOME AU MEMBER STATES

South Africa stands as a significant hub for digital trade in Africa, boasting the highest number of online marketplaces on the continent. With a strong foundation in internet infrastructure and high connectivity rates, the country has attracted major global digital platforms like Netflix and Spotify. However, despite its advancements, affordability remains a challenge, leading to a digital divide among its populace. The country's sophisticated banking sector has also played a pivotal role in facilitating digital transactions, with a substantial percentage of South Africans owning bank accounts. Despite legal frameworks in place for consumer protection and privacy, efforts are needed to ensure wider access to affordable internet and bridge the affordability gap.

Nigeria emerges as Africa's largest B2C digital trade market, driven by its sizable population and vibrant tech sector. The country's home-grown digital platforms, like Konga, have flourished alongside government incentives aimed at fostering digital trade. However, challenges such as poor connectivity and slow internet speeds hinder further growth. Legal reforms, including pending bills on data protection and taxation for digital services, signify Nigeria's commitment to enhancing its digital trade landscape.



Kenya showcases a thriving e-commerce ecosystem, supported by improved internet connectivity and widespread adoption of mobile money services like MPESA. Investment in digital infrastructure, such as the National Optic Fiber Backbone Infrastructure, has bolstered internet accessibility. Legal frameworks governing electronic transactions and consumer protection provide a supportive environment for digital trade growth, while initiatives like the Digital Services Tax aim to regulate the sector further.

Ghana has made notable strides in creating an enabling environment for digital trade, with initiatives like the National Digital Property Addressing System and support for online marketplaces. Despite challenges in broadband penetration, the country's mobile internet penetration and regulatory support for mobile money interoperability fuel digital transactions. Legal frameworks addressing electronic transactions and data protection signify Ghana's commitment to fostering a conducive environment for digital trade growth.

of more than $3.4 trillion. It offers tremendous potential to boost intra-African trade and, in the process, encourage the development of e-commerce.

While the AfCFTA is a promising initiative, other regional economic communities (RECs) also play an important role in promoting trade and economic cooperation. These include the East African Community (EAC), the Economic Community of West African States (ECOWAS), the Southern African Development Community (SADC), the Common Market for Eastern and Southern Africa (COMESA), the Economic and Monetary Community of Central Africa (CEMAC), and the Arab Maghreb Union (AMU), among others. The African Union (AU) also plays an important role in supporting and coordinating these efforts.

> The AfCFTA, which came into effect on January 1, 2021, is the largest free trade area in the world in terms of the number of participating countries. By eliminating tariffs on most goods and services, the AfCFTA aims to create a single African market of more than 1.2 billion consumers with a combined GDP of more than $3.4 trillion.

These supranational and intergovernmental organizations play an important role in promoting e-commerce in Africa. By harmonizing policies, removing trade barriers, and promoting regional integration, these organizations create an environment conducive to the development and expansion of e-commerce. For example, the AfCFTA, through its Protocol on Trade in Services, promotes the development of regional value chains, including in the digital economy and e-commerce. It also encourages member states to cooperate on issues related to e-commerce, such as cybersecurity, data protection and electronic transactions.

Similarly, regional economic communities such as the EAC, ECOWAS, and SADC are actively promoting the digital economy within their regions. For example, the EAC's Digital Economy Strategy outlines measures to promote digital transformation, including the development of e-commerce. The AU's Digital Transformation Strategy for Africa (2020-2030) also provides a framework for the continent's digital transformation, covering areas such as digital trade and e-commerce, digital financial services, and cybersecurity.

1.2. The African Continental Free Trade Area (AfCFTA) and E-commerce

1.2.1. Introduction to AfCFTA

The African Continental Free Trade Area (AfCFTA) is a free trade zone for goods and services created by African Union (AU) member states. Its purpose is to promote intracontinental trade and investment, spurring economic integration and growth in Africa. The AfCFTA has been signed by 54 AU member states. The region it covers has a joint gross domestic product of approximately $3.4 trillion and a population of roughly 1.4 billion people (Lema et al, 2022). The agreement focuses on reducing or eliminating tariffs and nontariff barriers to trade. It includes up to 97% of all tariff lines (Lema et al, 2022). The agreement came into force in May 2019 and will be supplemented by additional protocols on specific trade issues. Some protocols have been provisionally agreed upon, while others are still subject to negotiation.

The initial implementation phase of AfCFTA, which focuses on trade in goods, began in January 2021. Currently, there has been little trading under the agreement due to the need to finalize administrative processes and negotiate certain issues, such as rules of origin. The long-term goals of AfCFTA are to establish a single market for goods, services, and capital, including a single African customs union, and to facilitate the free movement of people within the region. The AfCFTA is viewed by many policymakers and economists as an ambitious trade policy initiative with significant potential to stimulate economic development in Africa if implemented as envisioned. According to the World Bank, the AfCFTA could increase Africa-wide real income by 7% and potentially lift 30 million people out of extreme poverty by 2035 (Lema et al, 2022). The agreement's ultimate success may depend on signatory countries' ability and political will to resolve remaining negotiation issues and effectively implement their AfCFTA commitments. Private sector use of AfCFTA benefits will also impact success.

1.2.2. Potential of AfCFTA to create a landmark regulatory framework for e-commerce

The member states have focused on Africa's economic development and integration since the establishment of the African Continental Free Trade Area (AfCFTA). Harnessing the digital economy and realizing its opportunities is a top policy priority. Therefore, the heads of state and governments of the AU mandated negotiations for an AfCFTA Protocol on E-Commerce under Phase II of the AfCFTA negotiations. The Protocol was initially planned for Phase III but has been expedited to Phase II. Negotiations are currently ongoing to finalize the protocol by July 2023. This will provide member states with a unique opportunity to operate under harmonized digital economy regulations, with the aim of achieving collective economic growth through trade.

The African Union (AU) Assembly adopted the AfCFTA Protocol on Digital Trade (the Protocol) during the 37th Summit on 18th February 2024. The Protocol establishes a shared understanding of the regulation of the digital economy in Africa. This presents significant opportunities for MSMEs to expand their market reach and contribute to the overall economic growth of the region. To ensure the success of the Protocol, it is important to focus the e-commerce tax regime on reaping broader economic benefits for the continent, rather than just bolstering tariff collections. This will lead to an increase in trade.

“The heads of state and governments of the AU mandated negotiations for an AfCFTA Protocol on E-Commerce under Phase II of the AfCFTA negotiations. The Protocol was initially planned for Phase III but has been expedited to Phase II. Negotiations are currently ongoing to finalize the protocol by July 2023. This will provide member states with a unique opportunity to operate under harmonized digital economy regulations, with the aim of achieving collective economic growth through trade.

BOX 2. RULES AND REGULATIONS THE AfCFTA PROTOCOL FOR DIGITAL TRADE

The Protocol focuses on legal convergences that impact e-commerce in Africa. It outlines several objectives to promote digital trade on the continent, including:

- Eliminating trade barriers among state parties;
- Establishing clear, transparent and predictable harmonized rules, and common principles and standards for digital trade;
- Creating an open, transparent, secure, predictable and trustworthy digital ecosystem for businesses and consumers;
- Enhancing cooperation among state parties on matters related to digital trade;
- Establishing an institutional framework for the implementation and administration of the Protocol;
- Promoting common and open standard to enable the interoperability of frameworks and systems to facilitate cross-border digital trade;
- Encouraging trusted, safe, ethical and responsible adoption and regulate the use of emerging and advanced technologies to support and promote digital trade;
- Promoting digital skills development, innovation and entrepreneurship and digital industrialization as well as develop digital infrastructure to facilitate digital transformation of state parties; and
- Provide a common legal framework for digital trade among state parties.
- As mentioned above, these areas of law include consumer protection, data protection, intellectual property rights, competition policy and tax-related issues.

SOURCE: CROSS BORDER E-COMMERCE UNDER THE AFRICAN CONTINENTAL FREE TRADE AREA

1.2.3. Benefits of a unified e-commerce regulatory framework under AfCFTA

The benefits of establishing a unified e-commerce regulatory framework under the AfCFTA are manifold and far-reaching. At its core, the Protocol seeks to streamline and harmonize the legal landscape governing digital trade across Africa. By eliminating trade barriers among member states, the Protocol paves the way for seamless cross-border transactions, fostering greater economic integration and cooperation among African nations. This elimination of barriers is crucial for businesses, as it reduces the complexity and uncertainty associated with navigating disparate regulatory regimes, ultimately leading to cost savings and increased efficiency in conducting e-commerce activities.

Furthermore, the establishment of clear, transparent, and predictable rules, as well as common principles and standards for digital trade, creates a conducive environment for businesses to operate in. This clarity helps mitigate risks and uncertainties associated with regulatory compliance, thereby instilling confidence among investors and fostering a conducive environment for digital entrepreneurship and innovation. Moreover, a harmonized regulatory framework promotes fairness and a level playing field for businesses, ensuring that all participants in the digital marketplace adhere to the same set of rules and standards.

Another significant benefit of the unified e-commerce regulatory framework is the creation of an open, transparent, secure, predictable, and trustworthy digital ecosystem for both businesses and consumers. This fosters trust and confidence in online transactions, which are essential for the continued growth of e-commerce on the continent. Additionally, by enhancing cooperation among member states on digital trade matters, the Protocol facilitates knowledge sharing, capacity building, and the exchange of best practices, thereby promoting collective learning and development in the field of digital trade.

Moreover, the Protocol aims to promote digital skills development, innovation, and entrepreneurship, as well as digital industrialization, by developing digital infrastructure and facilitating the digital transformation of member states. By providing a common legal framework for digital trade, the Protocol also addresses key areas of law such as consumer protection, data protection, intellectual property rights, competition policy, and tax-related issues. This comprehensive approach ensures that the benefits of digital trade are realized in a manner that is inclusive, sustainable, and equitable for all stakeholders involved, thereby contributing to the overall socio-economic development of the continent.

1.3. SMEs Opportunities in E-commerce within AfCFTA

SMEs across Africa grapple with numerous challenges stemming from inadequate digital infrastructure, exclusive financial sectors, costly border procedures, and stringent trade regulations. These obstacles can weigh heavily on SMEs, hindering their growth and expansion prospects. Regulatory barriers, marked by bureaucratic hurdles, high taxes, and complex legal frameworks, further impede SMEs from flourishing and expanding across borders. However, despite these challenges, SMEs constitute a significant portion of domestic market players and play a crucial role in the economic landscape of African nations.

Well, AfCFTA is expected to provide increased opportunities for all types of businesses to expand their customer base and increase their exports - so not just large businesses, but also SMEs which are such an important component of the commercial landscape in Africa. Indeed, according to a report by the Economic Commission for Africa, SMEs account for about 85% of employment and contribute about 35% to GDP in Africa. The World Bank estimates them to represent about 90% of businesses and more than 50% of employment worldwide, where formal SMEs contribute up to 40% of national income (GDP) in emerging economies. The implementation of AfCFTA holds the potential to fuel SME growth, providing avenues for enhanced cross-border trade and investment.

Various sectors, including agro-food processing, textiles, cosmetics, and technology, offer promising prospects for SMEs willing to embrace innovation and entrepreneurship. Additionally, the agreement not only facilitates cross-border trading but also opens up in-country opportunities for SMEs to integrate into value chains. Access to funding and investment may also improve for SMEs under AfCFTA, albeit challenges such as increased competition from larger enterprises and multinational corporations loom.

To fully capitalize on AfCFTA, SMEs must equip themselves with the requisite tools and strategies. Leveraging technology, such as e-commerce platforms, can enhance operational efficiency, expand market reach, and reduce costs for SMEs. Moreover, SMEs need to navigate regulatory complexities, including tax implications of cross-border activities, and engage effectively with stakeholders to eliminate bottlenecks. Despite the hurdles, the potential benefits of AfCFTA for SMEs are substantial, incentivizing them to overcome challenges and seize the vast opportunities presented by the agreement.

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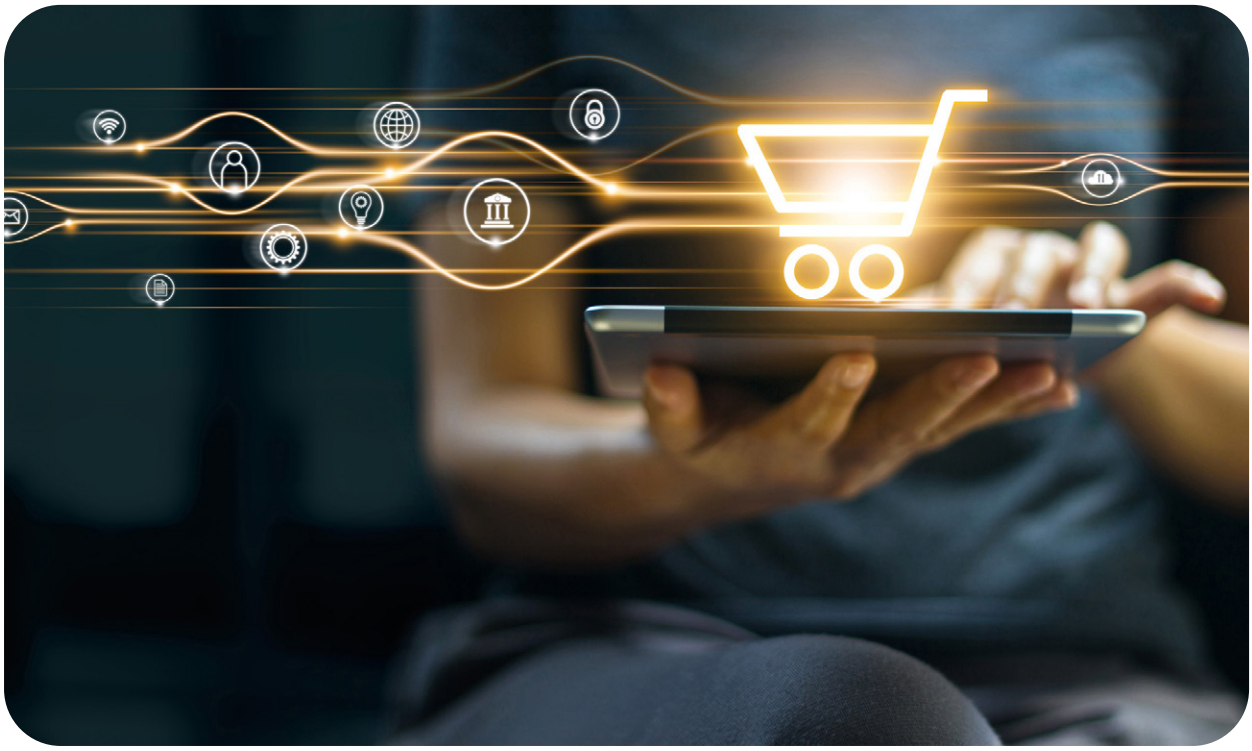

1.4. Conclusions

The regulatory landscape for e-commerce in Africa is complex. It presents challenges and opportunities for promoting SME trade. Tariffs on ICT goods and limited participation in international agreements exacerbate barriers to digital infrastructure development and intra-Africa imports. Telecom regulations, competition dynamics, and cross-border data policies influence investment dynamics in the telecommunications sector. Governance challenges also hinder investment in data-related infrastructure. However, the AU's Digital Transformation Strategy and initiatives like the AfCFTA aim to create an integrated digital society and economy in Africa. They promote policies to foster digital trade and address regulatory gaps.

The AfCFTA has the potential to create a regulatory framework for e-commerce. Negotiations for a Protocol on E-Commerce are ongoing, with the aim of harmonizing digital economy regulations. The adoption of the AfCFTA Protocol on Digital Trade presents opportunities for MSMEs to expand their market reach and contribute to regional economic growth. The Protocol aims to create a favorable environment for digital entrepreneurship and innovation by eliminating trade barriers, establishing transparent rules, and fostering cooperation among member states. It also addresses key areas of law, such as consumer protection, data protection, and tax-related issues, to ensure that the benefits of digital trade are realized equitably across the continent.

SMEs can benefit from increased opportunities for cross-border trade and investment within the AfCFTA framework. Sectors such as agro-food processing, textiles, and technology can be leveraged. To capitalize on AfCFTA, SMEs should embrace innovation, leverage technology, and navigate regulatory complexities. Although there are challenges such as regulatory barriers and increased competition, SMEs can still benefit from AfCFTA. AfCFTA can benefit SMEs by incentivizing them to overcome hurdles and seize opportunities for growth and integration into regional value chains. This can ultimately contribute to the economic development of Africa.

CHAPTER-02

BRIEF REVIEW OF AFRICA'S E-COMMERCE ECOSYSTEM

2.1.Definition of an E-commerce ecosystem (components)

2.1.1 Components of the E-commerce ecosystem

Africa's e-commerce ecosystem stands as a beacon of innovation and growth, an embodiment of how digital technologies can transform traditional marketplaces into vibrant, interconnected networks. Initially defined by Turban (2010) as a platform for the digital exchange of goods, services, and information, it has grown to encompass a much broader range of online business activities. Chaffey et al. (2019) further broaden this horizon, depicting e-commerce not only as an exchange platform but also as a holistic arena for digital business, extending its reach to digital goods and various online services. This expansive view is supported by Laudon and Laudon (2020) and Strauss and Frost (2020), who consider e-commerce to encompass all forms of business activity conducted over electronic networks, integrating essential business functions such as marketing, advertising, customer support, and transaction management into its framework.

The vitality of the ecosystem is greatly enhanced with each new entrant, increasing its value and offerings. As outlined by Briscoe et al. (2006) and Shapiro & Varian (1998), the addition of each actor to this digital network enriches the collective experience and value, fostering a more vibrant marketplace. Despite concerns about increased competition and market saturation highlighted by Zhao et al. (2020), the ecosystem has demonstrated resilience and adaptability, and its overall value continues to grow. The fabric of this ecosystem is woven by manufacturers, end-users, retailers, and wholesalers, whose intricate interactions and transactions are central to the trade process. This critical interplay is underscored by Böttcher et al. (2021), who highlight the interconnected roles each plays within this digital commerce web.

Information systems are the linchpin of this ecosystem, as noted by Tiwana et al. (2010). They not only connect these different actors, but also provide a breeding ground for innovation, fostering the development of functionalities such as customized shop themes, digital platform integrations, and various feature add-ins. This technological backbone is essential, as it provides the ecosystem with the agility to adapt and evolve in response to emerging trends and challenges. The incorporation of emerging technologies, particularly artificial intelligence and blockchain, represents a significant leap forward, opening new avenues for efficiency, security, and innovation in the e-commerce landscape.

A robust regulatory framework underpins this ecosystem, ensuring an environment where fair competition thrives, and consumer rights are protected. This structure is critical to fostering collaborative efforts to address the myriad challenges facing the ecosystem, including infrastructure deficits, regulatory hurdles, and the digital divide. Expanding such collaborative efforts is essential to unlocking the full potential of e-commerce to catalyze economic growth and increase accessibility across the continent. The United Nations (2023) and GSMA (2023) reports shed light on these issues and provide insights into the digital business ecosystem tailored for e-commerce in Africa.

Figure 1 illustrates the intricate interplay of components within the e-commerce ecosystem, highlighting the seamless integration of different participants through border resources. This visual representation underscores the complexity of the ecosystem and the organized nature of digital commerce operations, providing a clearer understanding of how each component contributes to the overall functionality and growth of the ecosystem.

The African e-commerce ecosystem, with its rich tapestry of participants, technologies, and regulatory frameworks, is therefore a testament to the transformative power of digital innovation. It embodies the essence of modern commerce, characterized by dynamic growth, adaptability, and the potential to reshape economic landscapes across the continent.

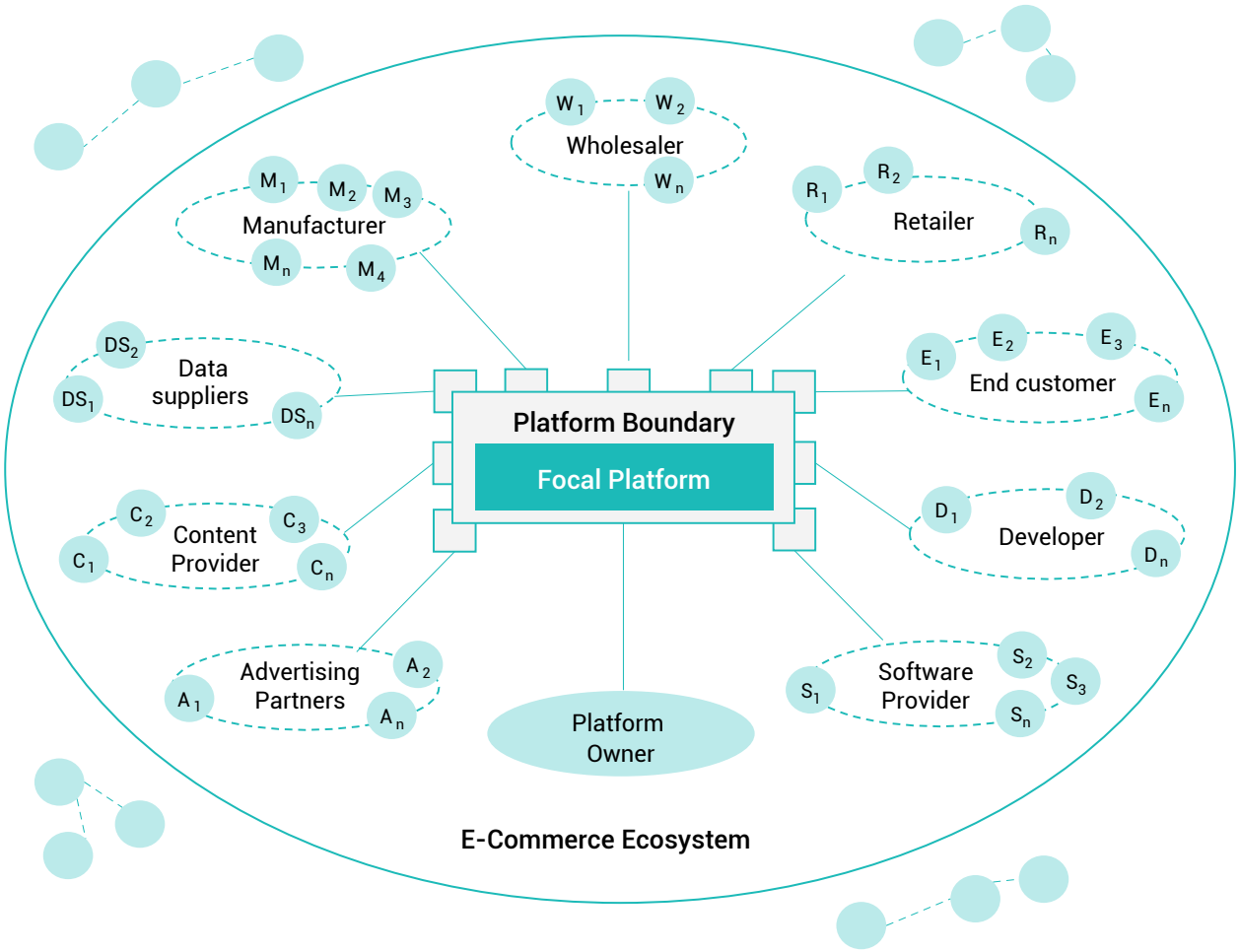

Figure 1. E-commerce ecosystem components (Source: Wulfert et al., 2022)

2.1.2. Interactions among actors in an ecosystem

A dynamic ecosystem requires interactions between its components. Consumers provide feedback to manufacturers and platforms about their products and services. Data suppliers work with manufacturers and wholesalers to refine their business models. Developers and software providers collaborate with focal platforms to better understand the needs of the actors. The essence of an ecosystem is the interactions between its components to serve the interests of its members.

These interactions are crucial for the ecosystem and are guided by two main forces: cooperation and competition. Firms compete to provide the best products and services for consumers, but they also need to cooperate to ensure secure use of the platforms and promote the e-commerce ecosystem, given the mutual benefits. Public policies can help the ecosystem grow by creating an enabling environment for its actors. Good regulations and appropriate laws are essential for the ecosystem's development.

2.1.3. Main outcomes of a good ecosystem

The participating actors in e-commerce ecosystems work together to provide products and services to end customers (Adner, 2017). An e-commerce ecosystem performs essential functions, bridging discrepancies in time, space, and quantity within a supply ecosystem, from suppliers of raw materials to end customers (Schütte, 2017).

As the ecosystem matures and integrates, consumers enjoy lower prices and higher quality products. Firms are compelled to innovate and offer new goods and services, while value chains are structured to create jobs for all involved. International commerce, including cross-border trade, can be encouraged.

2.2. Assessment of Africa's e-readiness for e-commerce

2.2.1. Infrastructure availability (internet access, mobile penetration, etc.)

Internet connectivity is essential for digital trade as it enables the exchange of goods and services online across countries and regions. Africa has been lagging in internet usage compared to other regions due to limited internet infrastructure and high internet service costs. However, the region is gradually catching up. The number of internet users in Africa has grown rapidly. From 2013 to 2022, the number of Africans using the internet increased almost fourfold as it is shown in figure 2.

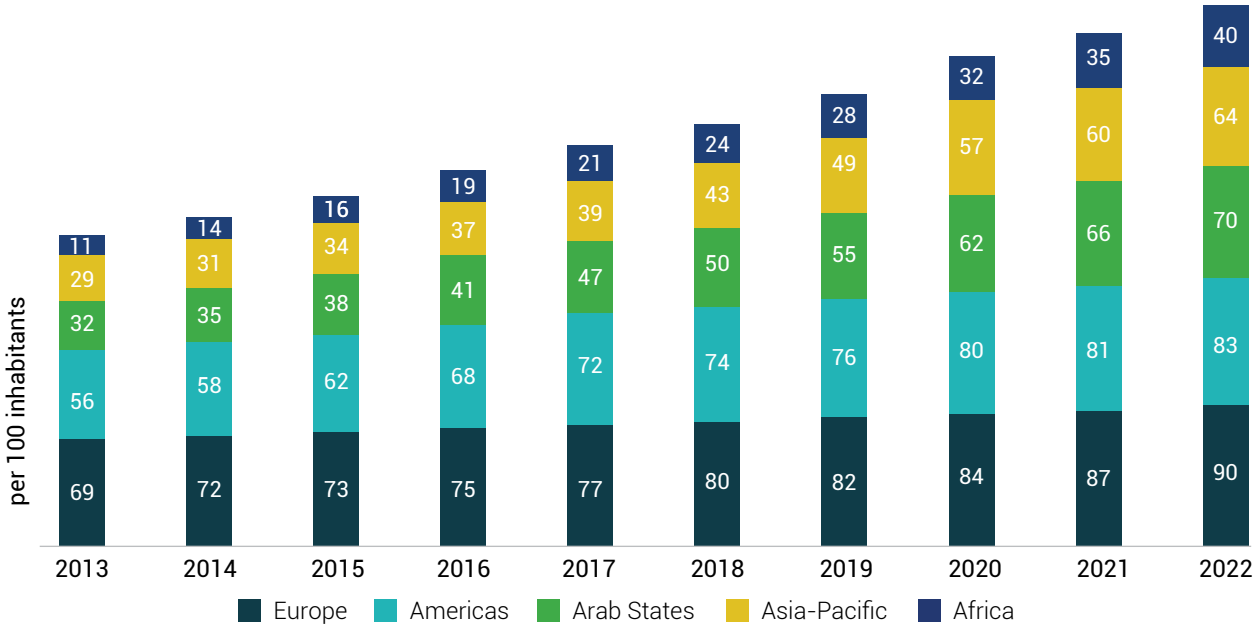

Figure 2. Individuals using the internet, by world region, 2013–2022

Regional data reveals disparities in internet use by country, gender, and living area. In Burundi, Congo, Somalia, and South Sudan, less than 10% of the population uses the internet, while in Morocco, Tunisia, and Seychelles, more than 80% do (ITU, 2023). In 2022, men (46%) used the internet more than women (34%) on a regional level. Additionally, internet usage in urban areas is almost three times higher than in rural areas (ITU, 2023).

The growth of mobile broadband networks has been the main driver of internet penetration in Africa. Between 2013 and 2022, fixed broadband penetration in Africa remained consistently below 1%. In the same period, mobile broadband penetration increased from 11% to 42%. Mobile broadband dominates due to the low cost of upgrading mobile cellular networks compared to extending fixed networks. Additionally, mobile services can be offered competitively in most countries, while fixed networks often have attributes of a natural monopoly (ITU, 2022). In 2021, the fixed broadband penetration rate for more than half of African countries was below 1%, though Seychelles and Mauritius had rates higher than the world average of 16.8%.

As of 2022, over 82% of Africa's population had access to a 3G network, which is significantly lower than the coverage in the Americas, Arab States, Asia-Pacific and Europe, where it exceeds 95%. Similarly, Africa's 4G network coverage is only around 50%, which is far below the coverage in America, Asia-Pacific and Europe, where it exceeds 90% (ITU, 2023). Notably, urban areas in Africa have higher 3G and 4G network coverage than rural areas. The adoption of 5G networks in Africa is still in its infancy stage. As of March 2023, only 10 African countries had access to commercial 5G services (GSMA, 2022b; Telegeography, 2023).

BOX 3. INFRASTRUCTURE BARRIERS FOR E-COMMERCE FROM THE RESULTS WITH THE INTERVIEWS WITH 5 AFRICAN COUNTRIES

Tunisia: Technology, infrastructure, and connectivity are not considered barriers to e-commerce growth. The focus group and interviews suggest favorable infrastructure for e-commerce development.

Egypt: High connectivity rates facilitate e-commerce growth, but there is room for improvement in high-speed internet access and connectivity in rural areas.

Morocco: Significant improvements in technology, infrastructure, and connectivity have led to increased adoption of e-commerce, particularly in major cities. However, there are still disparities in internet penetration and connectivity between urban and rural areas.

Uganda: E-commerce is growing, especially after the COVID-19 pandemic, driven by youth with ICT skills. However, internet coverage and speed need improvement, particularly in rural areas, and reliability of technology providers is a concern.

Cote d'Ivoire: While technology, infrastructure, and connectivity are not barriers, internet prices are high due to the cost of infrastructure, and there are limitations in telecommunications infrastructure, especially in rural areas, affecting various sectors including business, education, and healthcare.

2.2.2. Regulatory and government initiatives for e-commerce

Africa's e-commerce landscape is rapidly evolving and at a critical juncture. The continent's regulatory environment heavily influences this landscape, presenting a complex web of challenges and opportunities that are critical to the growth and sustainability of e-commerce. To foster ecosystems conducive to e-commerce, a nuanced and tailored approach to regulatory frameworks is essential, given the unique hurdles presented by Africa's digital landscape.

Nigeria has formulated digital-led strategies to address challenges and bridge the digital divide. These strategies aim to harness the potential of the digital economy by addressing legal, infrastructural, and accessibility barriers. Ali and Odularu (2020) have highlighted the importance of ensuring equitable participation in the digital economy. South Africa is exploring the use of artificial intelligence (AI) in e-commerce. This highlights the importance of regulatory policies that facilitate technological advancement while addressing data privacy and ethical concerns. Ethiopia is committed to e-commerce and recognizes the need for a supportive legal and technological framework to address delivery, payment, and consumer behavior challenges. Younger, innovation-driven firms in Morocco with highly educated workforces tend to adopt e-commerce. This highlights the interplay between digital skills and e-commerce use, indicating the need for policies that enhance digital skills training and foster a culture of innovation (Ben Youssef & Dahmani, 2023).

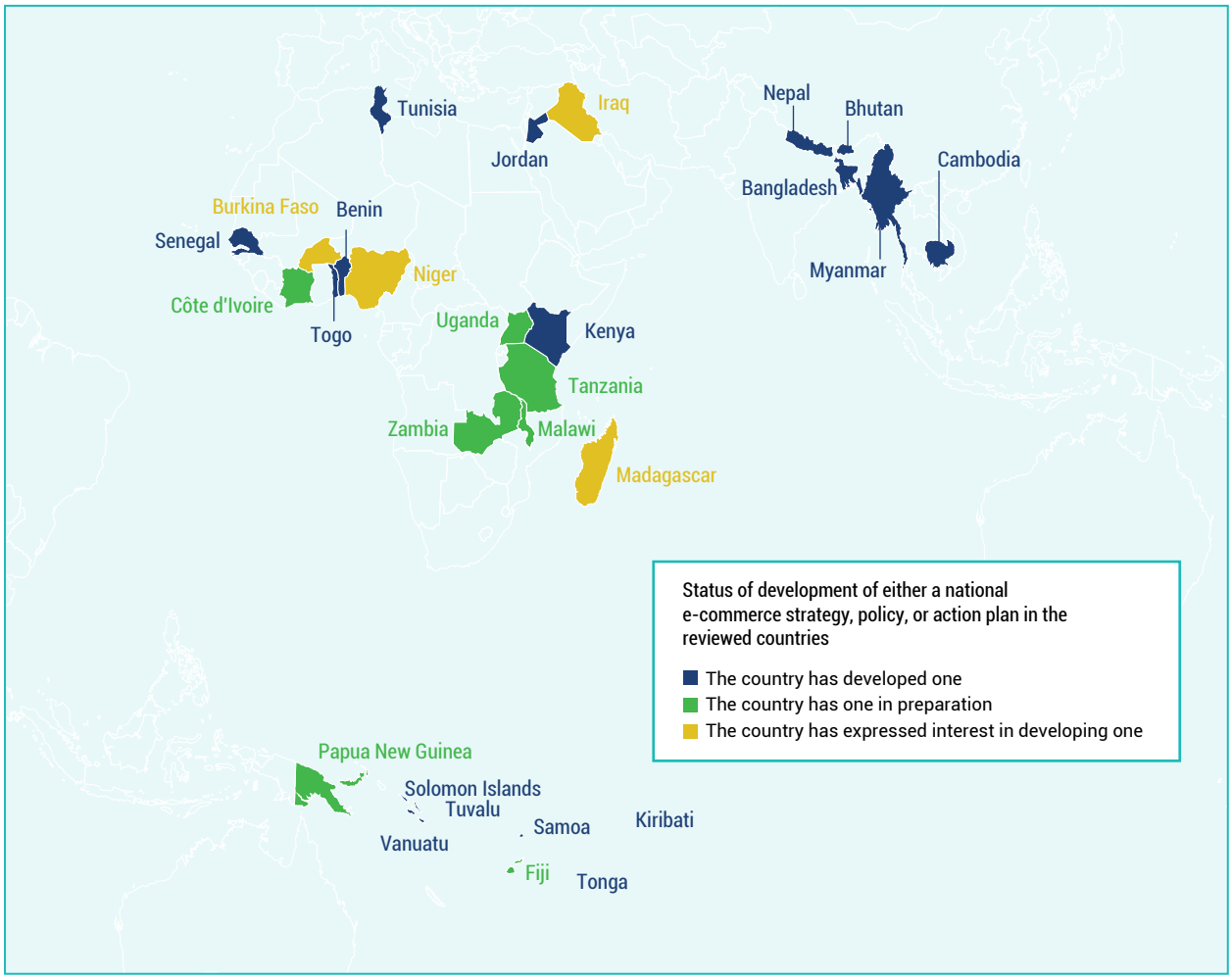

Figure 3. Strategies and initiatives for e-commerce (UNCTAD, 2024)

To navigate this regulatory landscape effectively, it is essential to adopt a harmonised approach at both national and regional levels. This approach should involve crafting privacy legislation that meets international compliance standards while also considering the unique socio-economic and cultural nuances of African countries. Additionally, significant investments in technology infrastructure and efforts to improve digital literacy are critical. Encouraging innovation and entrepreneurship in the digital space is crucial for fostering an e-commerce ecosystem. This is demonstrated by the readiness conceptual framework for e-commerce and entrepreneurship in the context of the African Continental Free Trade Area (AfCFTA) (Makoza, 2023).

To create a regulatory environment that promotes the growth of e-commerce in Africa, a comprehensive and collaborative strategy is necessary. Africa can unlock the full potential of its digital economy, drive sustainable economic development, and ensure inclusive growth across the continent by weaving together supportive regulatory frameworks, investments in technological infrastructure, and policies that encourage innovation.

African Countries, as it is shown in figure 3, are adopting a coordinated and well-governed implementation process, but in most cases governance arrangements are still at a nascent stage. African Countries such as Senegal, Tunisia, Togo, Benin and Kenya have already developed an e-commerce strategy. Other countries like Côte d'Ivoire, Uganda, Zambia, Malawi and Tanzania are in the procedures of the preparation of an e-commerce strategy. Burkina Faso, Niger and Madagascar, which have already reported the establishment of e-commerce committees, working groups, and/or e-commerce implementation units in previous implementation reviews.

GOVERNMENT SUPPORT BARRIERS

POLICY & REGULATORY GAPS

- Lack of coordinated policies and visibility
- Absence of clear regulatory framework
- Inadequate consumer protection laws

ADMINISTRATIVE & BUREAUCRATIC HURDLES

- Complex tax systems
- Administrative red tape and delays
- Restrictive exchange rate laws
- Complicated cross-border trade processes

IMPLEMENTATION & ENFORCEMENT ISSUESS

- Poor enforcement of existing regulations
- Gaps in regulatory consistency
- Limited awarenes of policies among citizens

DIGITAL & DATA CHALLENGES

- Data protection regulation abuse
- Privacy and fraud concerns

2.2.3. Market size and access

Africa's e-commerce sector is growing rapidly. The Africa e-commerce market size reached US$ 277.1 Billion in 2023. Looking forward, IMARC Group expects the market to reach US$ 939.8 Billion by 2032, exhibiting a growth rate (CAGR) of 14.4% during 2024-2032. The US International Trade Administration (ITA) predicts that the continent will have over 500 million e-commerce users by 2025, with a compound annual growth rate (CAGR) of 17% (ITA, 2023). By 2025, the e-commerce market is expected to reach 40% penetration, demonstrating its potential for growth. The e-commerce market is expected to see significant revenue growth in the fashion and electronics sectors. By 2025, fashion products are projected to generate $13.4 billion in sales, while electronics are expected to reach $11.2 billion in annual sales (ITA, 2023) (refer to Figure 4).

The ITA projects that approximately 500 million people across the continent will be e-commerce users by 2025 (ITA, 2023). In addition, the United Nations Trade and Development (UNCTAD) estimates that digital commerce could add as much as $180 billion to the region's GDP by the same year (UNCTAD, 2022).

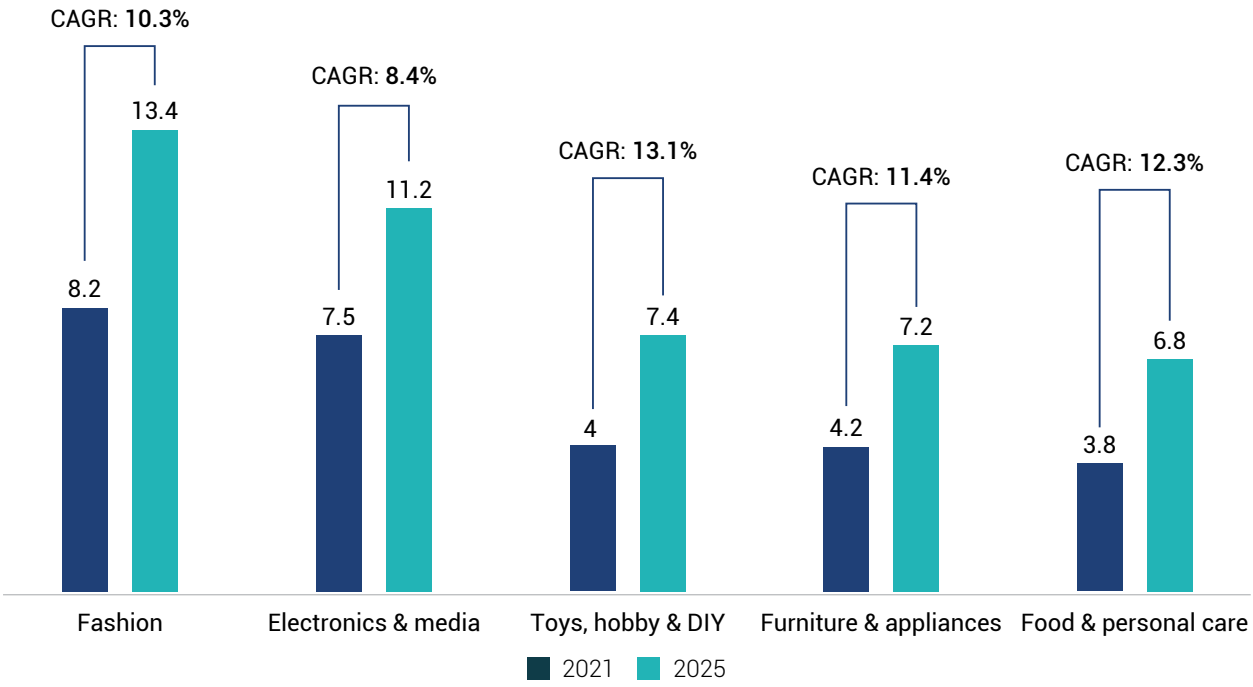

Figure 4. E-commerce revenues by sector in Africa in 2021 and 2025, in billions USD (source: ITA, 2023)

BOX 5. MARKET ACCESS BARRIERS FOR E-COMMERCE FROM THE RESULTS WITH THE INTERVIEWS WITH 5 AFRICAN COUNTRIES

Tunisia: Access to finance poses a significant barrier to the development of technology start-ups and e-commerce operators in Tunisia. Restrictive financing conditions, including high bank financing costs and collateral requirements, hinder sector growth. Moreover, the high initial investment required for creating and maintaining websites and apps, along with advertising and marketing costs, further exacerbates financial challenges for small businesses venturing into e-commerce.

Morocco: Moroccan businesses encounter multifaceted financial barriers when considering adopting e-commerce. High initial costs for establishing e-commerce platforms, integrating payment systems, and ensuring data security present significant challenges. Limited access to financing exacerbates the situation, particularly for SMEs struggling to secure capital from traditional financial institutions. Additionally, logistics and delivery costs add to the financial burden, especially when targeting customers in remote areas.

Egypt: Access to market and finance presents considerable barriers to e-commerce growth in Egypt. High entry costs, including setting up e-commerce platforms and ensuring data security, pose challenges for entrepreneurs. Limited access to funding further inhibits e-commerce ventures, with traditional banking institutions often reluctant to lend to startups. High delivery costs also impact the overall cost structure of e-commerce businesses, making them less competitive.

Uganda: Access to market and finance remains a significant obstacle for e-commerce growth in Uganda. High initial setup costs, coupled with the prohibitive cost of internet access, deter small and medium enterprises from venturing into e-commerce. The investment required for building and maintaining e-commerce platforms, along with recurring fees for hosting and maintaining website performance, presents formidable financial challenges for businesses.

Cote d'Ivoire: E-commerce businesses in Cote d'Ivoire face substantial challenges in accessing finance and market opportunities. Lack of financing for entrepreneurs hampers the initial capital required for setting up online platforms and investing in technology. High distribution costs further strain businesses, with factors like distance and delivery options contributing to increased expenses. Moreover, the entry and maintenance costs associated with building professional e-commerce websites and robust hosting infrastructure add to the financial burden for entrepreneurs in Cote d'Ivoire.

2.2.4. Digital literacy and skills development

Improving digital literacy and skills in Africa is crucial to unlocking the full potential of e-commerce. The continent's progress towards digital transformation highlights the potential for e-commerce to drive significant economic growth and promote social inclusion. However, there are complex challenges that must be overcome to achieve this. Adam and Alhassan (2021) emphasize the importance of ICT access and digital literacy in promoting e-commerce adoption. They also highlight the significant role of social media in this process. Therefore, it is crucial to include social media literacy in digital skills training programs. The digital divide in Africa is significant. To increase e-commerce adoption among diverse communities, especially SMEs and rural areas, social media can act as a bridge. Emphasizing social media literacy broadens the digital engagement of these entities and enhances their participation in the digital economy.

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Ollerenshaw et al. (2021) demonstrated the transformative power of education in the digital realm by showing the effectiveness of targeted training programs in increasing digital literacy and confidence among SMEs. Tailoring such training to Africa's unique landscape of challenges and opportunities can accelerate the digital and e-commerce maturity of SMEs, thereby driving economic innovation and growth. The need for a customized education paradigm is emphasized here. It should not only provide individuals with digital skills but also instill confidence in them to navigate and utilize digital technologies for business improvement. Cordes and Marinova (2023) examine the potential of e-commerce to promote sustainable development and reduce poverty in sub-Saharan Africa. They advocate

for the integration of digital literacy and e-commerce strategies. The integrated approach can empower small and medium-sized enterprises (SMEs) through innovation, entrepreneurship, and collaboration. This can usher in a new era of sustainable economic and social development. Therefore, digital literacy programs should evolve to include elements that prepare participants not only for digital navigation but also for using e-commerce in innovative and sustainable ways.

To address the challenges of digital literacy and skills development, a comprehensive and collaborative approach is necessary. This involves establishing a clear and inclusive definition of digital skills to inform the development of accessible training programs for people from all socio-economic backgrounds. Investment in the digital skills ecosystem is crucial. The focus should be on increasing access to digital devices and the internet. Educational content should be engaging, relevant, and culturally sensitive. Digital skills training should be holistic, incorporating cognitive, social, and emotional learning objectives to provide a well-rounded educational experience. Fostering public-private partnerships can increase the reach and effectiveness of digital literacy programs. This ensures inclusivity and accessibility for individuals across the continent. By addressing these strategic areas effectively, Africa can create an enabling environment for digital literacy and skills development. This will ensure that the benefits of the digital economy are shared equitably across the continent and promote the transformative potential of e-commerce for economic empowerment and inclusive growth.

2.2.5. Startups and SMEs in matter of E-commerce

Startups and SMEs in Africa are increasingly recognizing the immense opportunities presented by the burgeoning e-commerce landscape across the continent. With a rapidly growing middle class, increasing internet penetration, and the widespread adoption of smartphones, there's fertile ground for businesses to thrive online. These smaller enterprises are leveraging e-commerce platforms to reach a wider audience beyond their localities, tapping into both domestic and international markets. Moreover, the rise of digital payment solutions tailored to African markets is further facilitating transactions, making it easier for startups and SMEs to conduct business seamlessly.

BOX 6. SKILLS BARRIERS FOR E-COMMERCE FROM THE RESULTS WITH THE INTERVIEWS WITH 5 AFRICAN COUNTRIES

Tunisia: While digital skills in Tunisia are favorable for e-commerce development, there is room for improvement. Targeted training on monetary transactions, blockchain technologies, and e-commerce concepts can bridge existing skill gaps. Future vocational training programs should focus on enhancing employees' understanding of e-commerce non-technical aspects, such as advertising and marketing strategies, to strengthen competitiveness in the market.

Morocco: The level of technical skills and e-commerce knowledge varies in Morocco, with larger companies and urban areas having better-trained teams. However, small businesses and less developed regions may need to improve their technical skills. Future training initiatives should prioritize enhancing technical expertise among employees and improving digital literacy among consumers, especially the elderly population.

Egypt: Digital skills are not a significant barrier to e-commerce growth in Egypt, but improvements are needed. Future training should focus on enhancing technical skills among entrepreneurs and small businesses to establish and maintain online stores effectively. Additionally, initiatives aimed at improving digital literacy among citizens, especially in rural areas, are essential to broaden access to e-commerce platforms.

Uganda: Although digital skills are not a major barrier, there is a need for future improvement in Uganda. Initiatives should focus on providing training on technical aspects of e-commerce, especially for those in traditional industries. Capacity-building programs and awareness campaigns on e-commerce are crucial, particularly in rural areas with limited internet access and low literacy levels.

Cote d'Ivoire: Digital skills are not considered a significant barrier, but future training for entrepreneurs is essential. Many entrepreneurs lack the technical skills required to establish and maintain e-commerce websites. Programs aimed at reducing illiteracy rates and improving digital literacy among the population are crucial to broaden access to e-commerce platforms and foster growth in Cote d'Ivoire's e-commerce sector.

However, navigating the complexities of e-commerce in Africa presents its own set of challenges for startups and SMEs. Infrastructure limitations, logistical hurdles, and varying regulations across different countries require innovative approaches to overcome. Additionally, building trust among consumers in online transactions remains paramount, necessitating investments in customer service, secure payment gateways, and reliable delivery networks. Despite these challenges, the adaptability and resilience of startups and SMEs are driving forces in the evolution of e-commerce across Africa, paving the way for economic growth and digital transformation on the continent.

More than 330 e-commerce and digital retail companies have been funded in the region as of 2022 and over 20 per cent of these were in the retail sector, more than double any other category of products. While fintech remained the most funded sector, e-commerce was the third most funded sector in 2022, accounting for 13 per cent of total funds invested.

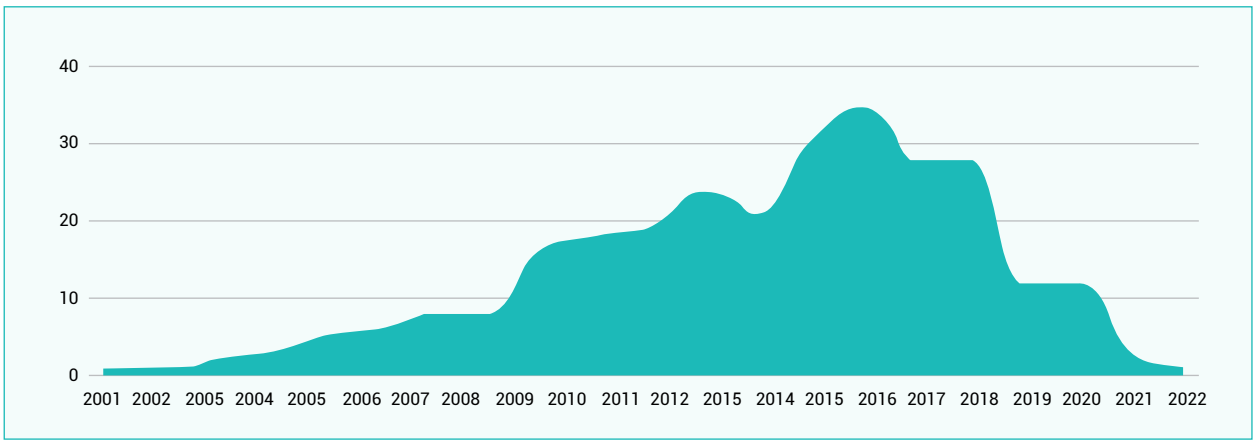


Figure 5. Number of e-commerce start-ups founded in Africa, by year (Source: Briter Bridges (2023))

2.3. Development of e-commerce platforms in the African ecosystems

2.3.4. Growth and behavior of e-commerce platforms

E-commerce platforms have a significant impact on the digital infrastructure landscape, acting as gateways to a wide range of online goods and services provided by both the public and private sectors. While these platforms facilitate access to products and services, they also generate valuable data insights. This information is critical for businesses seeking to better understand consumer behavior and preferences, and to drive product and service innovation and customization. However, the focus of analysis within Africa has been predominantly on B2C digital trade platforms for physical goods, e-government platforms, and trade facilitation portals, due to limited data on service-oriented digital platforms.

Central to the development of e-commerce platforms in Africa are factors such as the digitization of payment systems, trust in digital transactions, and the ability of these platforms to meet the unique needs of the African market. Research by Amofah and Chai (2022) identifies trust and payment mechanisms as critical factors influencing the adoption of e-commerce, highlighting the role of trust in mediating the relationship between digital platforms and their users, thereby affecting adoption rates and the long-term viability of e-commerce in the region. Beyond their role as transactional intermediaries, digital platforms have become fundamental to the infrastructure of the digital economy. Companies such as Jumia and Konga have expanded beyond traditional retail to offer a range of services, from product sales to logistics and financial transactions. This comprehensive approach not only diversifies the e-commerce landscape, but also enhances the value proposition of these platforms for both consumers and businesses.

The prevalence of online marketplaces varies across the continent, with countries such as Algeria, Egypt, Morocco, South Africa, and Tunisia hosting a significant number, while others, including Eritrea, Sao Tome and Principe, and South Sudan, have far fewer (ITC, 2021). Notably, the majority of these marketplaces in Africa operate as classifieds sites, advertising goods online but finalizing transactions offline, often through cash-on-delivery. This model highlights the intermediary role of such platforms in connecting buyers and sellers, with the transaction process, including payment and delivery, coordinated directly between them, reflecting the need for integrated payment solutions. Conversely, transactional marketplaces, which offer streamlined transaction processes by integrating payments and additional services, represent a smaller segment of the online marketplace ecosystem in Africa.

> Central to the development of e-commerce platforms in Africa are factors such as the digitization of payment systems, trust in digital transactions, and the ability of these platforms to meet the unique needs of the African market.

BOX 7. AFRICA LAND OF TECHNOLOGICAL INNOVATIONS: M-PESA A MOBILE PAYMENT SYSTEM THAT BOOSTS THE GROWTH OF ONLINE EXCHANGES

M-Pesa, which means «mobile money» in Swahili, was first launched in Kenya in 2007 by Safaricom, the country's largest mobile operator. This service allows users to store and transfer money using their mobile phone. M-pesa is now a joint venture between Safaricom and Vodacom starting in 2020. This service has also expanded to other countries including the Democratic Republic of Congo (DRC), Egypt, Ghana, Lesotho, Mozambique and Tanzania.

This service has been a resounding success in Africa, especially in rural areas where access to traditional banking services is limited. M-Pesa has overcome the barriers of geographic distance and lack of banking infrastructure, providing unbanked populations with a secure and convenient way to manage their money.

The impact of M-pesa on the growth of online trade in Africa is undeniable. By facilitating electronic payments, this system has encouraged the growth of e-commerce on the continent. Users can now make online purchases, pay for services and transfer money quickly and easily, using just their mobile phone. This has spurred the development of new online businesses and created a thriving digital ecosystem in Africa.

With mobile payment services such as M-Pesa, market traders, debt collectors, farmers and taxi drivers can avoid transportation or high-value cash transactions. This reduces the risk of associated theft, burglary and fraud. Additionally, individuals and contractors are no longer forced to spend hours queuing to pay their electricity and water bills, as these payments can now be made easily through M-Pesa. All allowing the poorests obtain finance through transfers and remittances.

M-Pesa is used by various actors in city life, such as banana vendors and street vendors. Its use is so simple and fast. Once you have made a transaction, you will immediately receive a confirmation text. Simply click on the app, select «send money», enter the recipient's phone number and the amount to be transferred, then enter your four-digit password and voila! The transaction is completed in just 20 seconds, even when you are stuck in traffic. Even beggars in front of malls remind you that they accept payment via M-Pesa.

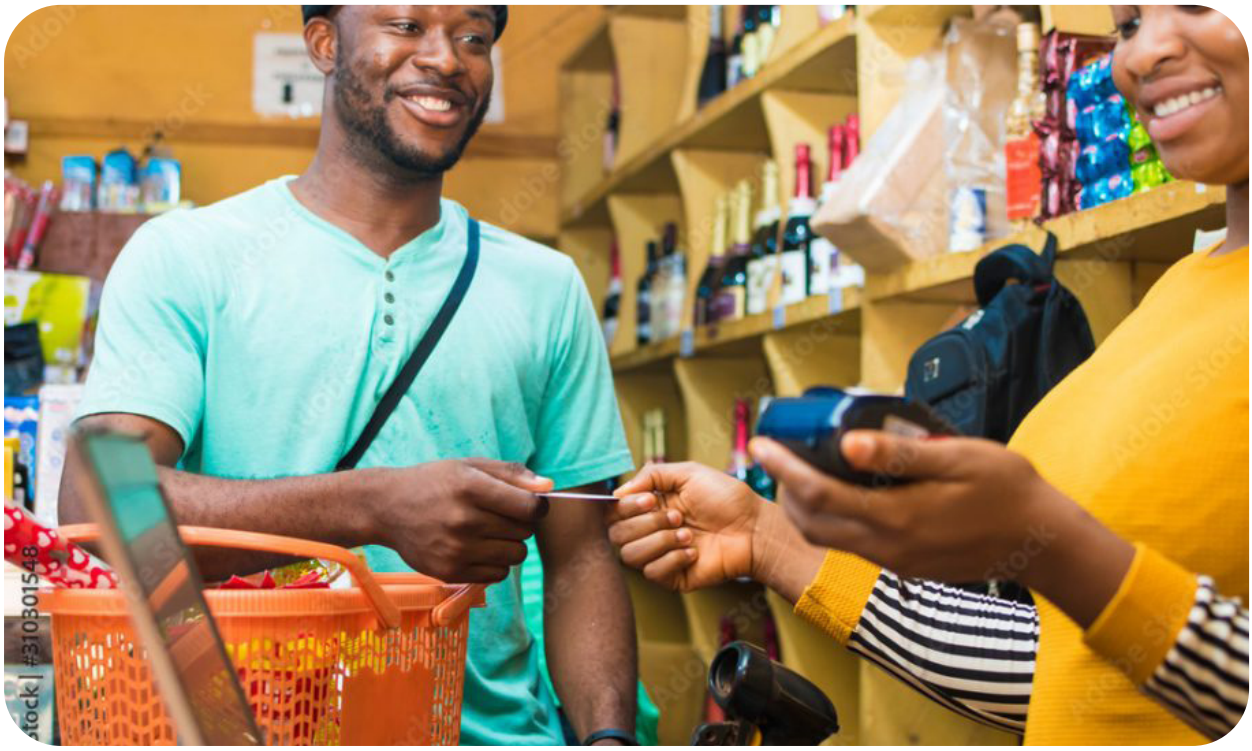
2.3.5. Trade portals

Trade facilitation portals are critical digital infrastructures that provide comprehensive guidance on import, export and transit processes from a trader's perspective. These portals greatly enhance transparency, a fundamental aspect underscored by the Trade Facilitation Agreement. For traders, these digital platforms provide detailed insights into compliance with national regulations, streamlining the compliance process and facilitating smoother trade operations. Policymakers use these portals to identify and remove procedural redundancies and administrative barriers, thereby increasing the efficiency of trade facilitation mechanisms.

Several African countries have initiated national trade facilitation portals, coordinated by national trade facilitation committees. These efforts represent a collaborative ethos, bringing together the efforts of public institutions and the private sector toward a unified understanding of trade processes (Mohdhar & Shaalan, 2021). This collaboration is critical in aligning stakeholder goals and fostering an environment conducive to trade facilitation. Another way to stimulate trade activity among African countries is through the development of continental and regional trade facilitation portals. These portals serve as centralized hubs for accessing trade-related information and opportunities, thereby facilitating cross-border trade (Thiaw, 2024). Such initiatives are not only informational resources, but also central to the advancement of economic integration by providing a streamlined platform for navigating the complexities of African trade. Some of the African trade portals are presented below:

African Union Commission Digital Trade and Investment Portal. Developed to facilitate engagement among businesses within and outside Africa, this digital trade and investment portal was created primarily to serve international exporters, importers, manufacturers, traders, services providers and merchants looking to establish contacts with their business counterparts in Africa.

AfCFTA Portal. The official portal of the AfCFTA, it serves as a platform for businesses to access information on tariffs, rules of origin, trade regulations and market opportunities within the AfCFTA framework.



African Export–Import Bank's African Trade Portal. An online platform to promote and facilitate intra-Africa trade, it provides information on trade opportunities, market intelligence, trade finance solutions and access to a network of African businesses.

Tradeforum Africa. An online business-to-business marketplace connecting African exporters with international buyers, it offers a platform for businesses to showcase products, negotiate trade deals and expand their market reach.

Export Portal. A global business-to-business e-commerce platform enabling businesses to engage in international trade. It provides a secure and transparent marketplace for buyers and sellers from various countries, including African nations, to conduct trade transactions

2.3.3. Mobile optimization

Mobile optimization is emerging as a critical element in the development of e-commerce ecosystems in today's African digital marketplace. Given the dominance of mobile devices as the primary gateway to Internet services across the continent, optimizing e-commerce platforms for these devices goes beyond a mere benefit - it becomes an imperative. This imperative is underpinned by a projected surge in smartphone penetration, heralding a significant expansion opportunity for mobile-driven e-commerce growth. However, this potential is tempered by significant barriers, most notably the prohibitive cost of mobile services and devices, which inhibit broader adoption of e-commerce efforts.

> Africa's economic landscape presents a unique challenge to the ubiquity of mobile e-commerce. The financial burden associated with acquiring mobile technology and Internet access remains a formidable barrier for a significant portion of the African population.

Africa's economic landscape presents a unique challenge to the ubiquity of mobile e-commerce. The financial burden associated with acquiring mobile technology and Internet access remains a formidable barrier for a significant portion of the African population. This problem is compounded by the diverse socio-economic conditions across the continent, which further complicate the adoption and integration of e-commerce solutions. As a result, the formulation and implementation

of strategies aimed at reducing these financial barriers is critical. Efforts to reduce handset costs and improve the affordability of Internet services are essential to unlocking the full potential of mobile e-commerce in Africa.

Mobile optimization in African e-commerce ecosystems is not only a strategic advantage, but a fundamental requirement for the sector's growth and sustainability. The trajectory of e-commerce development in Africa is inextricably linked to the proliferation of mobile technologies, requiring concerted efforts to address the challenges of affordability and accessibility. By embracing innovative solutions and fostering an enabling environment for the widespread adoption of mobile e-commerce, Africa can harness its demographic and technological dynamism to catalyze significant economic transformation.

2.3.4. Security measures and cybersecurity

The burgeoning e-commerce sector in Africa's digital economy demands a robust security framework to counter the escalating threat of cyber-attacks. Trust, essential for digital transactions, relies on rigorous security measures such as SSL certificates, encryption, and comprehensive cybersecurity strategies. Despite cybersecurity legislation in various African markets, a noticeable gap persists in digital cybersecurity infrastructure and policy readiness, leaving organizations vulnerable to cyber threats and resulting in substantial financial losses annually.

SSL certificates and encryption are pivotal for e-commerce security, ensuring secure data transmission and fostering consumer trust. However, beyond technical measures, the challenge extends to broader cybersecurity policy and governance. The multifaceted nature of cyber threats necessitates adaptable cybersecurity frameworks, as highlighted by research identifying vulnerabilities within global mobile ecosystems. Integrating advanced technologies like blockchain, coupled with collaborative policy initiatives and international cooperation, is crucial for building a resilient e-commerce infrastructure and safeguarding against evolving cyber risks. Thus, prioritizing cybersecurity is indispensable for the sustainable growth and resilience of Africa's e-commerce sector amid digital transformation.

BOX 8. CYBERSECURITY BARRIERS FOR E-COMMERCE FROM THE RESULTS WITH THE INTERVIEWS WITH 5 AFRICAN COUNTRIES

Tunisia: Trust and cybersecurity are major concerns for e-commerce adoption in Tunisia, affecting both consumers and businesses. Consumer confidence plays a crucial role in the development of e-commerce, with the security of online transactions being a significant issue. Although cybersecurity risks are perceived to be lower due to modest online transaction volumes, companies are actively reinforcing IT security measures to mitigate risks and enhance consumer trust.

Morocco: Trust and security are crucial for the success of e-commerce in Morocco. To minimize risks, businesses invest in IT security measures and cybersecurity audits. However, challenges such as concerns about the security of online payments, protection of personal data, counterfeiting, fraud, and product delivery issues hinder e-commerce growth. Therefore, it is essential to address these concerns to foster consumer trust and facilitate e-commerce adoption.

Egypt: Challenges include data breaches, phishing attacks, and payment fraud. To build consumer trust and confidence in e-commerce platforms, it is essential to ensure the security of online payment methods and protect customer data. Cybersecurity is a major obstacle to the growth of e-commerce in Egypt. Addressing these cybersecurity challenges is crucial for promoting the growth of e-commerce in Egypt.

Uganda: E-commerce development in Uganda faces major concerns regarding trust and security, especially cybersecurity. Consumer hesitancy towards online transactions is contributed by payment fraud, counterfeit products, and privacy issues. Consumer trust in e-commerce platforms is further eroded by the lack of robust payment security measures and concerns about the conformity of merchandise delivered.

Cote d'Ivoire: Similarly, trust and cybersecurity issues significantly impact e-commerce development in Cote d'Ivoire. Cybercrime, counterfeiting, and product conformity issues are undermining consumer trust and confidence in online transactions. To foster consumer trust and promote the growth of e-commerce in Cote d'Ivoire, it is essential to address these concerns and implement robust security measures.

2.4. Payment systems

2.4.1. Overview of payment methods in Africa

The landscape of online payments and transactions plays a pivotal role in facilitating digital trade, with disparities evident across regions and countries. In developed regions, credit and debit cards dominate digital payments, while cash on delivery remains prevalent in most developing regions, including Africa. This discrepancy reflects varying levels of financial inclusion, with a significant portion of Africa's population lacking bank accounts, a prerequisite for accessing credit or debit cards. At least half the population in just five African countries (i.e. Mauritius (90%), South Africa (84%), Libya and Namibia (66% each), and Kenya (51%) have accounts at financial institutions (World Bank, 2021). Financial technology (fintech) has been instrumental in enhancing financial inclusion, with mobile money serving as a prime example. Mobile money has revolutionized financial services by overcoming barriers to traditional banking, enabling individuals to transact without needing a bank account. Its continued growth is paramount for expanding digital trade participation.

Africa stands as a leader in the mobile money industry, with approximately 781 million registered accounts in 2022, accounting for a significant portion of global mobile money transactions (GSMA, 2023). East Africa, particularly Kenya, Tanzania, Uganda, and Rwanda, spearheaded the adoption of mobile money services, with M-PESA being the trailblazer. East Africa boasts the highest number of registered mobile money accounts, closely followed by West Africa. Countries like Côte d'Ivoire, Ghana, and Senegal lead mobile money adoption in West Africa. However, despite the success of mobile money, financial inclusion remains a challenge across Africa. Debit card usage is limited to a mere 10% of the population, with credit card ownership averaging at just 2% (ITA, 2023). Kenya leads in financial inclusion, with a substantial percentage of its population having bank accounts, followed by South Africa, Nigeria, Morocco, and Egypt. Addressing barriers to financial inclusion and promoting innovative fintech solutions are crucial for further advancing digital trade across Africa.

2.4.2. Challenges for digital payments

The lack of interoperability in payment systems poses a significant barrier to cross-border trade within Africa, particularly for SMEs. Without interoperability, SMEs face increased time, costs, and complexity when making payments across national borders, hindering their ability to expand into new markets. One crucial aspect of interoperability is account-to-account interoperability, which enables the seamless transfer of funds between mobile money accounts across different providers or between mobile money providers and traditional banks (GSMA, 2020).

Regulatory interoperability plays a vital role in fostering account-to-account interoperability. Domestic regulations can establish policies mandating payment interoperability as a goal, ensure equal access to payment networks for all providers meeting regulatory standards, and set clear standards for network participation. Similarly, cross-border regulatory convergence is essential for enabling seamless payments across borders. Examples like the European Union's Payment Services Directive and international agreements like the Digital Economy Partnership Agreement highlight the importance of regulatory alignment in promoting payment interoperability (WEF, 2022). The AfCFTA Protocol on Digital Trade presents an opportunity to enhance cross-border regulatory interoperability within Africa, drawing lessons from regional initiatives such as the COMESA Regional Payment and Settlement System and the East African Community Payment System.

However, several bottlenecks hinder the growth and advancement of fintech firms and impede efforts to enhance payment interoperability. Localization requirements, driven by regulatory concerns over data privacy and national security, often lead to increased capital spending on local hosting infrastructure, thereby

raising costs for fintech firms. Conversely, leveraging cloud services could mitigate costs and promote financial inclusion, yet such initiatives face resistance due to regulatory constraints. Additionally, the introduction of new tax regimes targeting mobile money services has raised transaction costs, potentially deterring investment in the sector. Addressing these bottlenecks is crucial for promoting payment interoperability, reducing transaction costs, and fostering the growth of digital trade within Africa.

2.4.3. Role of fintech in advancing payment solutions

Africa's fintech landscape is experiencing a significant transformation, with mobile money services provided by mobile network operators dominating the ecosystem. In recent years, there has been a surge in fintech startups offering innovative payment solutions, which presents a positive development for intra-Africa digital trade by providing alternative cross-border payment options for sellers and buyers. However, the rapid expansion of fintech brings inherent risks, including concerns related to consumer protection, data privacy, cybersecurity, money laundering, and counterterrorism financing.

One of the primary concerns regarding fintech is data privacy, as many fintech firms rely on automated processing of vast amounts of personal data, often handled by foreign companies operating in jurisdictions with differing approaches to data privacy. This raises questions about data security and individuals' control over their personal information (AFI, 2023). Additionally, fintech business models may create uncertainty among customers regarding accountability for errors and complaints resolution, particularly in cases where

In recent years, there has been a surge in fintech startups offering innovative payment solutions, which presents a positive development for intra-Africa digital trade by providing alternative cross-border payment options for sellers and buyers.

financial services are provided by unregulated startups, leaving customers vulnerable to financial losses beyond the scope of consumer protection authorities.

Furthermore, the rapid evolution of the fintech landscape often outpaces regulatory frameworks, creating a regulatory lag that may exacerbate risks and challenges associated with fintech services. However, the emergence of digital currencies, including cryptocurrencies and central bank digital currencies, presents new opportunities and challenges in the digital payment space (IMF, 2022). While digital currencies widen payment options and facilitate cross-border transactions, they also introduce new risks, such as regulatory uncertainty and potential vulnerabilities to illicit activities.

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BOX 9. PAYMENT BARRIERS FOR E-COMMERCE FROM THE RESULTS WITH THE INTERVIEWS WITH 5 AFRICAN COUNTRIES

Tunisia: E-commerce in Tunisia faces significant challenges regarding online payment, primarily due to fragmented payment methods and low adoption of credit cards. Consumers exhibit reluctance to use credit cards for online transactions, preferring the «cash on delivery» method, which limits the dematerialization of payments. Additionally, the monopoly of online payment services by one provider results in insufficient quality of service and lack of competition. International payment restrictions, limited access to international bank cards, and regulatory constraints further hinder e-commerce growth, particularly for businesses looking to expand internationally.

Morocco: E-commerce development in Morocco is hindered by financial and payment method barriers, including lack of access to banking services, high transaction fees, and low adoption of credit cards. Online payment security concerns and lack of diversity in payment options also pose challenges, potentially excluding certain segments of the population from participating in e-commerce. Investment in payment infrastructure, awareness, and appropriate regulations are necessary to enable the growth of e-commerce in Morocco.

Egypt: Payment methods are a significant barrier to e-commerce development in Egypt, with challenges including a cash-based economy, issues with foreign currency transactions, and low e-banking penetration. While digital payment options have gained popularity, a significant portion of the population still prefers physical currency for transactions, hindering the adoption of digital payment methods. Foreign currency problems and low e-banking penetration further impede e-commerce growth in Egypt.

Uganda: E-commerce in Uganda faces several financial and payment barriers, including limited access to digital payment solutions and a lack of diverse payment options. While mobile money services are prevalent, not all businesses and consumers have easy access to these digital payment solutions. Expanding digital payment services to underserved areas and offering a variety of payment methods are crucial for broader e-commerce adoption in Uganda.

Cote d'Ivoire: Online payment in Cote d'Ivoire is limited by a lack of reliable payment systems and high fees for payment with foreign currency exchange. PayPal restricts transactions due to cybercrime risks, limiting options for both customers and merchants. Additionally, high fees for payments with foreign currency discourage online purchases and hinder the growth of e-commerce. Addressing these payment method obstacles is essential for fostering e-commerce development in Cote d'Ivoire.

2.5. Logistics development in Africa

Africa's overall Logistics Performance Index (LPI) paints a sobering picture, with only Côte d'Ivoire, Rwanda, and South Africa surpassing the global average score. This underscores the persistent challenge of inadequate logistics infrastructure hindering enterprises engaged in cross-border digital trade across the continent. A closer examination of the contributing indicators reveals that while African countries generally perform well in terms of timeliness, customs procedures and infrastructure emerge as significant bottlenecks affecting the logistics ecosystem.

Comparatively, Africa lags behind other world regions in most LPI indicators, particularly in relevance and reach, which compromises the attractiveness of the continent's postal network as a reliable delivery method, especially for cross-border digital trade. Consequently, various alternatives have emerged for parcel delivery, ranging from larger businesses developing proprietary distribution networks to the utilization of courier companies and motorbikes, particularly by micro, small, and medium enterprises (MSMEs). The burgeoning e-logistics platform market in Africa is driven by expanding digital infrastructure and technological solutions, yet a pervasive issue affecting all physical delivery modes is the lack of robust addressing systems in many African countries, leading to parcel collection at designated points by buyers.

However, several African nations have made strides in postal development, reflected in their high Integrated Index for Postal Development scores. For instance, Egypt Post introduced a service allowing SMEs to ship products through its post offices, enabling payment on delivery, which can be received through various channels, enhancing accessibility and convenience (Farouk, 2022). Similarly, Nigeria Postal Service's adoption of the what3words service has significantly improved delivery efficiency by overcoming poor addressing systems. This innovative approach, utilizing a three-word address system, has streamlined postal service operations, leading to shorter delivery times and enhanced customer satisfaction (Lemma et al., 2022). Such initiatives underscore the importance of leveraging innovative solutions to address the logistical challenges impeding cross-border digital trade in Africa.

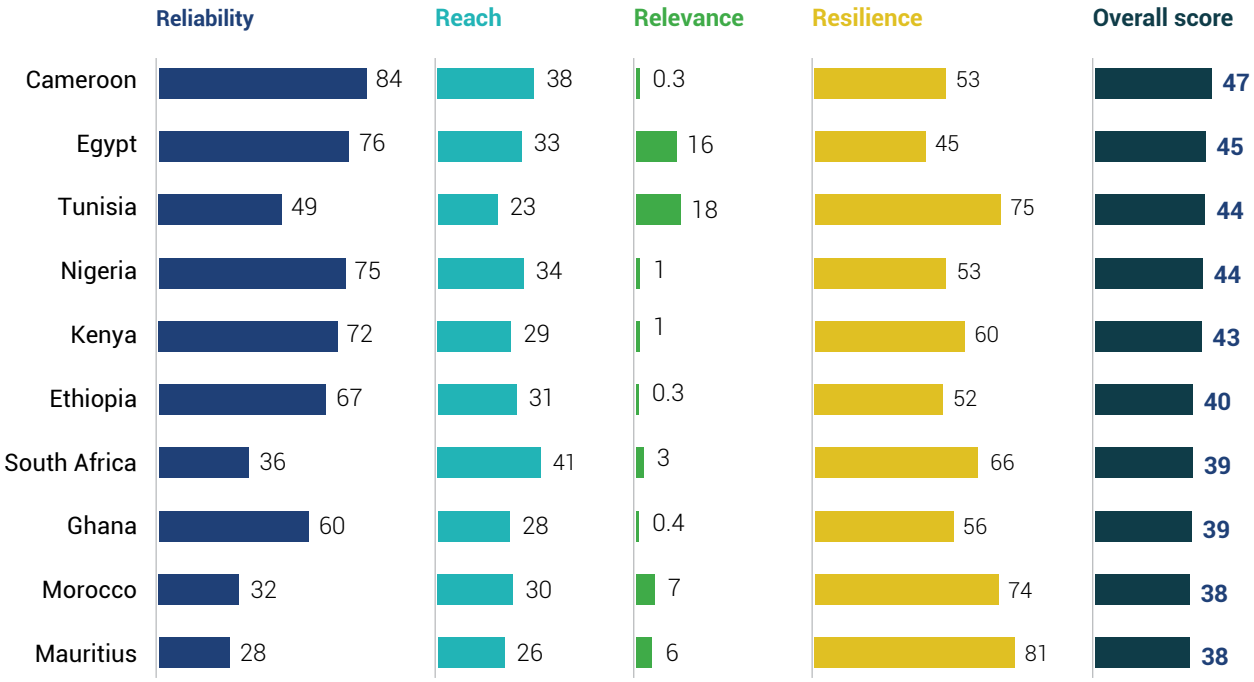

Figure 6. Universal Postal Union Integrated Index for Postal Development scores for the 10 highest scoring African countries, by indicator, 2021 (Source: Based on data from UPU (2022))

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BOX 10. LOGISTICS BARRIERS FOR E-COMMERCE FROM THE RESULTS WITH THE INTERVIEWS WITH 5 AFRICAN COUNTRIES

Tunisia: While logistics infrastructure is relatively developed in Tunisia, there are still challenges that need to be addressed to ensure efficient logistics and transport, especially for exports. Issues such as last-mile delivery limitations and uncertain customs processing times can hinder the growth of e-commerce, particularly in the international market.

Morocco: In Morocco, logistics and transport infrastructure challenges are more prominent in rural areas, where poor roads, security concerns, and delivery delays can hinder e-commerce development, especially for exports. Investments in logistics infrastructure are necessary to improve competitiveness in the online and international market.

Egypt: In Egypt, last-mile delivery challenges and the lack of well-established courier and delivery services can hinder e-commerce growth, particularly in reaching customers in remote or less-developed regions. Improvements in delivery infrastructure are needed to support the expansion of e-commerce across the country.

Uganda: In Uganda, poor road networks and limited infrastructure pose significant challenges to logistics and transport, especially in rural areas. Efficient logistics and transportation systems are crucial for e-commerce development and the competitiveness of Ugandan products in national and international markets.

Cote d'Ivoire: In Cote d'Ivoire, small businesses often face challenges with the means of delivery, relying on motorbikes which can be insecure. Delay due to a lack of effective logistics further hampers e-commerce growth, impacting customer satisfaction and business reputation. Investment in secure and efficient delivery methods is essential to overcome these barriers.

2.6. Consumer behavior

From a consumer perspective, e-commerce provides access to a wider variety of products and saves time and money. The African e-commerce market is expected to experience remarkable growth by 2027, with a projected user base of 609.3 million users, resulting in a penetration rate of 44.3% (Statista, 2023b) (see Figure 6). This industry expansion promises to stimulate economic growth, create employment opportunities, boost the digital economy, and improve access to goods and services, especially for consumers in rural areas.

Although digital transformation has taken place, over 40% of Africa's population remains unbanked, and almost 90% of financial transactions are still cash-based (African Banker, 2023). This persistence of cash transactions underscores the ongoing challenges in achieving widespread financial inclusion and transitioning to digital financial services across the continent. Despite advancements in technology and digital infrastructure, barriers such as limited access to banking services, lack of trust in digital transactions, and socioeconomic disparities continue to impede the adoption of digital financial solutions among African populations.

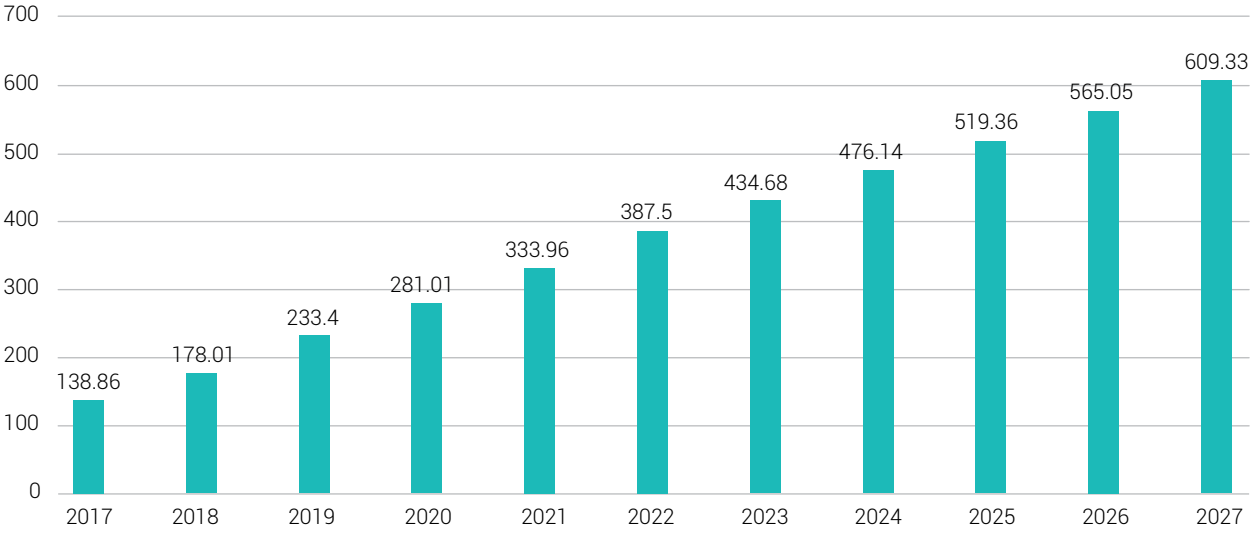

Figure 7. Number of e-commerce users in Africa 2017-2027 in USD billions (source: Statista, 2023)

BOX 11. SOCIO-ECONOMIC BARRIERS FOR E-COMMERCE FROM THE RESULTS WITH THE INTERVIEWS WITH 5 AFRICAN COUNTRIES

Tunisia: Socio-cultural barriers to e-commerce adoption in Tunisia include traditional shopping habits, a lack of e-commerce culture, and consumer distrust of online payments. Tunisians prefer in-person interactions and cash-on-delivery payment methods, which hinder the expansion of e-commerce.

Morocco: In Morocco, socio-cultural barriers include consumer distrust, a preference for in-person interactions, attachment to traditional commercial practices, and a preference for cash payments. These barriers reflect deeply ingrained cultural norms and behaviors that can impede the adoption of e-commerce.

Egypt: Egypt faces socio-cultural barriers such as a preference for cash-on-delivery payments, attachment to traditional shopping practices, and language barriers. Traditional shopping in local markets and concerns about language accessibility on e-commerce platforms hinder widespread adoption of e-commerce in Egypt.

Uganda: In Uganda, socio-cultural barriers to e-commerce adoption include consumer trust issues, a preference for face-to-face interactions, cash preference, and language barriers. Ugandans are accustomed to traditional shopping practices and bargaining, which presents challenges for the transition to e-commerce.

Cote d'Ivoire: Socio-cultural barriers in Cote d'Ivoire include language barriers and shopping habits rooted in traditional marketplaces and in-person interactions. The preference for shopping in physical stores and the limitation of e-commerce platforms to French may hinder the expansion of e-commerce in the country.

2.7. Conclusion

Assessing Africa's readiness for e-commerce shows progress in internet connectivity and mobile broadband penetration. However, there are regional disparities in coverage and usage rates. Regulatory and government initiatives are crucial in shaping the e-commerce landscape. Nigeria, South Africa, and Ethiopia have implemented strategies to address legal, infrastructural, and accessibility barriers. Estimates suggest that there will be a substantial increase in e-commerce users and market penetration by 2025, alongside significant revenue growth in key sectors such as fashion and electronics. The market size and access show promising growth projections.

Improving digital literacy and skills development is crucial to unlocking the full potential of e-commerce in Africa. Targeted training programs and inclusive educational paradigms can empower SMEs and individuals to use digital technologies effectively. E-commerce opportunities are increasingly being embraced by startups and SMEs, thanks to growing internet penetration and innovative payment solutions tailored to African markets.

E-commerce platforms and trade portals offer opportunities to improve digital infrastructure and facilitate cross-border trade. Payment systems, especially mobile money services, are promoting financial inclusion and expanding digital trade participation. However, challenges such as interoperability and regulatory barriers remain. Fintech innovation shows potential but needs proper regulation to address concerns regarding consumer protection, data privacy, and cybersecurity.

Improving logistics development remains a challenge due to inadequate infrastructure and addressing systems that hinder cross-border digital trade. However, postal services' innovative solutions and initiatives demonstrate progress in improving delivery efficiency and accessibility. To drive e-commerce growth, it is crucial to understand consumer behavior and overcome barriers to digital financial services adoption, achieving widespread financial inclusion.

CHAPTER-03

RECOMMENDATIONS

3.1. Recommendations for the countries

African countries need to adapt their regulatory frameworks to support the development of e-commerce in the continent. Currently, the lack of government support and appropriate regulation is hindering the growth of e-commerce. Many African countries are concerned about the expansion of e-commerce due to its association with tax evasion and informality. However, implementing the right regulations and evolving their fiscal systems to catch up with e-commerce practices can be a game changer. To do so, helping African countries to adapt their fiscal practices to e-commerce can foster these practices and reduce the administrative barriers for e-commerce.

African countries need to improve their distribution and logistics to take advantage of e-commerce. The private sector is investing in these activities, but logistics platforms are still lacking, and the value chain needs to be optimized. To improve delivery speed and shorten distances, consider using last-mile delivery options like local warehouses, lockers, and third-party delivery services. It is highly recommended that specific industrial policies target these firms to upgrade their performance. Improving the logistics sector can be a game-changer for e-commerce in Africa.

Create registries and networking platforms for e-commerce sites. E-commerce is growing in Africa, but consumers often struggle to find information about the market's actors. Providing accessible information can increase trust and awareness of e-commerce opportunities. Several African countries should establish official registries for e-commerce sites to build trust with consumers. Creating a platform for networking at the national, regional, or continental level to exchange knowledge on e-commerce and clarify the roles of each firm is crucial for the future of e-commerce in Africa. The platform can facilitate strategic partnerships and assist stakeholders in overcoming obstacles to the growth of e-commerce on the continent.

Supporting SMEs with finance to transition to e-commerce is crucial. Over 95% of firms in Africa are SMEs and encouraging them to shift to e-commerce can help spread this practice and increase their sales and productivity. To achieve this, a financial incentive mechanism should be established to assist these firms in adopting e-commerce. Various instruments and incentives can be utilized. E-commerce can help save resources for authorities and create jobs, making it a budget-neutral option. The savings can then be used as subsidies to encourage SMEs to adopt e-commerce, which can also boost cross-border trade.

Ensure data protection and cybersecurity, strengthen regulations and measures to safeguard SMEs and consumers against cyber threats and data breaches. Offer guidance and resources to help SMEs implement robust cybersecurity protocols, secure online payment systems, and protect sensitive customer information. This will enhance trust and confidence in e-commerce transactions.

Promoting accessible e-payment solutions across Africa is crucial for advancing financial inclusion and accelerating e-commerce growth. African countries should prioritize policies that facilitate easy access to alternative payment methods, including mobile money and digital currencies, tailored to diverse socio-economic contexts, to ensure broader participation in the digital economy.

Enhancing digital trade within Africa is crucial for fostering economic growth, stability, and development across the continent. Here are some recommendations for African countries to achieve this:

- **Harmonization of policies and regulations**: African countries should work towards harmonizing their policies and regulations to create a conducive environment for regional trade. This includes aligning trade policies, customs procedures, and standards to reduce barriers to trade.
- **Promotion of Intra-African trade**: African countries should prioritize intra-African trade by reducing tariffs and non-tariff barriers, promoting regional value chains, and providing incentives for businesses to engage in intra-regional trade.
- **Financial integration**: Strengthening financial integration within Africa, including the development of regional financial markets, payment systems, and

banking infrastructure, can facilitate cross-border investment, capital flows, and financial transactions.

- **Promotion of cross-border investments**: Encouraging cross-border investments and partnerships among African countries can foster economic cooperation and integration. Governments can provide incentives for businesses to invest in neighbouring countries and support initiatives that promote cross-border collaboration.
- **Investment in infrastructure**: Developing and improving infrastructure such as transportation networks, energy grids, and telecommunications is essential for facilitating the movement of goods, services, and people across borders. Investments in infrastructure projects should prioritize connectivity between the African countries.
- **Trade facilitation measures**: fostering regional collaboration on cross-border e-commerce facilitation for businesses is key to simplify cross-border trade, reduce trade costs and enhance digital trade across the continent. Implementing trade facilitation measures, such as streamlined customs procedures, digital documentation processes, and single-window systems can help SMEs to increase e-commerce within the continent.
- **Political commitment and leadership**: Political commitment and leadership at both national and regional levels are essential for driving forward the regional integration agenda. African leaders should demonstrate strong commitment to regional integration and work collaboratively towards common goals.
- **Public-Private Partnerships**: Engaging the private sector in regional integration efforts through public-private partnerships (PPPs) can leverage private sector expertise, resources, and innovation to support the development of regional infrastructure and promote cross-border trade and investment.
- **Engagement with regional organizations**: African countries should actively engage with regional organizations such as the African Union (AU), Regional Economic Communities (RECs), and other regional bodies to coordinate regional integration initiatives, share best practices, and address common challenges.

3.2. Recommendations for the firms/platforms

African SMEs entering the e-commerce market should prioritize creating user-friendly websites and mobile apps. It is important to ensure that the user experience is seamless across different screen sizes and devices. This can be achieved by investing in responsive design and optimizing loading times to minimize bounce rates and maximize conversions.

Payment security and convenience should also be prioritized. Building trust with customers is crucial for the success of any e-commerce venture. African SMEs should prioritize implementing secure payment gateways and offering a variety of payment options to cater to diverse consumer preferences. They can enhance convenience and accessibility for customers by integrating popular local payment methods alongside global options. This will ultimately boost sales and foster loyalty.

Efficient logistics and fulfillment are crucial for successful e-commerce operations. African SMEs should partner with reliable logistics providers capable of delivering across diverse locations. To minimize delays and errors, implement robust inventory management systems and streamline fulfillment processes. This will ensure timely delivery and enhance customer satisfaction.

Adopting advanced e-commerce technologies is key to developing digital trade, as it enable businesses to leverage digital platforms, tools and solutions to facilitate online transactions, streamline operations, enhance the customer shopping experience, and expand their reach in domestic and international markets.

Providing exceptional customer service is key to building a loyal customer base and encouraging repeat business. African SMEs should prioritize delivering personalized shopping experiences and promptly addressing customer inquiries and concerns. Encouraging and soliciting feedback from customers can provide valuable insights for improving products, services, and user experience. This drives continuous growth and competitiveness in the e-commerce landscape.

> Providing exceptional customer service is key to building a loyal customer base and encouraging repeat business. African SMEs should prioritize delivering personalized shopping experiences and promptly addressing customer inquiries and concerns.

Investing in digital literacy and training in Africa is crucial. Training programs and workshops can equip the workforce with essential digital skills. These programs should focus on e-commerce fundamentals, digital marketing strategies, and data analytics. By doing so, employees can make informed decisions and effectively manage online operations.

At the regional level, SMEs play a crucial role in driving e-commerce within Africa. Here are some recommendations for SMEs to enhance their participation in regional e-commerce:

- **Improve regional online presence**: SMEs should invest in building a strong online presence through user-friendly websites, mobile apps, and social media platforms. Having a professional and easily accessible online storefront can attract customers from across the region.
- **Cross-Border logistics solutions**: Compagnies operating in the digital trade should partner with reliable regional logistics and shipping companies that specialize in cross-border deliveries. Efficient logistics solutions can help SMEs overcome challenges related to shipping, customs clearance, and delivery times.
- **Localization of content and services**: SMEs should tailor their products, services, and marketing content to meet the specific needs and preferences of customers in different regions in the African continent. Localization can include language translation, cultural adaptation, and customization of product offerings.
- **Participate in e-commerce platforms**: Join regional e-commerce platforms and marketplaces that cater to a diverse customer base across multiple countries. Leveraging established platforms can provide SMEs with access to a larger market and reduce barriers to entry.
- **Ensure payment security and trust**: Implement secure payment methods and encryption technologies to protect customer data and transactions. Building trust and credibility with customers is essential for encouraging repeat purchases and fostering loyalty.
- **Compliance with regulations**: Stay informed about e-commerce regulations and compliance requirements in different countries within the region. Ensure that your business adheres to legal and

regulatory standards related to online sales, data protection, and consumer rights.

- **Customer support and feedback**: Provide responsive customer support services to address inquiries, resolve issues, and handle returns or refunds promptly. Collecting and acting upon customer feedback can help SMEs improve their products and services based on customer preferences.
- **Collaborate with other SMEs and stakeholders**: Collaborate with other SMEs, industry associations, and government agencies at the continental level to share knowledge, resources, and best practices related to e-commerce. This can lead to mutual benefits and strengthen the overall e-commerce ecosystem.
- **Continuous learning and adaptation**: Stay abreast of emerging trends, technologies, and market developments in the e-commerce space. Continuously learn and adapt your strategies to remain competitive and capitalize on new opportunities in the evolving regional e-commerce landscape.

By implementing these recommendations, SMEs can enhance their participation in regional e-commerce and capitalize on the growing opportunities for cross-border trade and business expansion within Africa.

> Provide responsive customer support services to address inquiries, resolve issues, and handle returns or refunds promptly. Collecting and acting upon customer feedback can help SMEs improve their products and services based on customer preferences.

3.3. Recommendations for the donors and development organizations (DDO)

Donors and development organizations can support SMEs by providing technical assistance and capacity-building programs focused on e-commerce skills and knowledge. Investing in human capital through training programs, skills development initiatives, can enhance the capacity of governments, businesses, and institutions to participate effectively in regional integration efforts. This may include training programs on digital marketing, website development, online payment systems, and data analytics. By equipping SMEs with the necessary skills and expertise, donors can empower them to effectively navigate the complexities of the digital marketplace and capitalize on e-commerce opportunities.

Market linkages initiative can help SMEs to gain market access by connecting them with e-commerce platforms, marketplaces, and potential buyers, both locally and internationally. DDO can support networking opportunities, such as trade fairs, business conferences, and matchmaking events, to enable SMEs to showcase their products and services and form strategic partnerships with other players in the e-commerce ecosystem.

DDO should consider setting up targeted programs that focus on key sectors vital to African economies. E-commerce has already made significant strides in delivering specific goods like food. However, there is immense potential to expand its reach to other sectors that hold high social and economic returns. The creative economy, which encompasses cultural goods and services, represents a promising niche for African countries to develop and scale up. Donors can establish e-commerce programs tailored for specific sectors, such as the creative economy, to lay the groundwork for expansion into other sectors. Thorough evaluations of these initiatives are crucial to inform future strategies and ensure sustainable growth.

Addressing the gender gap in entrepreneurship is paramount for fostering social and economic inclusion across Africa, including promoting women's entrepreneurship in e-commerce. In many African countries, women's participation in entrepreneurship is below desirable levels. E-commerce provides a unique opportunity to economically empower women and enable them to establish their businesses. Furthermore, e-commerce offers flexibility that aligns with socioeconomic constraints, such as unpaid care

work that is predominantly carried out by women. The International Trade Centre (ITC) and other donors can expand their programs to support women entrepreneurs by helping them set up e-commerce ventures. This can be achieved by providing resources, training, and support to establish their online presence and connect with major e-commerce platforms in Africa. Such an initiative promotes gender equality and contributes to economic growth and empowerment at both individual and community levels.

At the regional level, donors can support initiatives that facilitate cross-border e-commerce by investing in trade facilitation measures, such as streamlined customs procedures, digital documentation systems, and harmonized trade regulations. By reducing barriers to cross-border trade, donors can promote regional integration and unlock the potential of digital trade to drive economic growth and development across Africa.

Here are some recommendations for DDO to consider:

- **Facilitation of cross-border e-commerce**: DDO can support initiatives that facilitate cross-border e-commerce by investing in trade facilitation measures, such as streamlined customs procedures, digital documentation systems, and harmonized trade regulations. By reducing barriers to cross-border trade, donors can promote regional integration and unlock the potential of digital trade to drive economic growth and development across Africa.
- **Capacity building and skills development**: DDO should invest in capacity building programs and skills development initiatives that equip entrepreneurs, small businesses, and policymakers with the knowledge and skills needed to harness the opportunities of digital trade. This includes training in e-commerce strategies, digital marketing, online payment systems, and cybersecurity best practices to enhance the competitiveness of African businesses in the digital economy.
- **Support for digital payment systems**: DDO can provide funding and technical assistance to support the development and adoption of digital payment systems, including mobile money platforms, digital wallets, and electronic payment solutions. Promoting digital financial inclusion enables individuals and businesses to participate more actively in digital trade

> DDO can provide funding and technical assistance to support the development and adoption of digital payment systems, including mobile money platforms, digital wallets, and electronic payment solutions. Promoting digital financial inclusion enables individuals and businesses to participate more actively in digital trade and facilitates cross-border transactions within the region.

and facilitates cross-border transactions within the region.

- **Advocacy for Policy Reforms**: DDO should advocate for policy reforms that create an enabling environment for digital trade and regional integration. This includes supporting efforts to harmonize trade regulations, strengthen intellectual property rights protection, and promote data privacy and cybersecurity standards to build trust and confidence in digital transactions across borders.
- **Promotion of Regional Digital Marketplaces**: DDO can support the development of regional digital marketplaces and e-commerce platforms that connect buyers and sellers across borders within Africa. By promoting regional digital marketplaces, donors can facilitate cross-border trade, foster economic integration, and create new opportunities for businesses to access regional markets and expand their customer base.
- **Investment in Digital Trade Hubs**: DDO can invest in the establishment of digital trade hubs and innovation centers that serve as hubs for digital entrepreneurship, innovation, and collaboration across Africa. These hubs can provide entrepreneurs and startups with access to mentorship, training, funding, and networking opportunities to accelerate the growth of digital businesses and promote regional integration.
- **Monitoring and Evaluation**: DDO should invest in monitoring and evaluation mechanisms to assess the impact of their interventions in enhancing digital trade and regional integration across Africa. By tracking progress, measuring outcomes, and identifying lessons learned, donors can refine their strategies and interventions to maximize their effectiveness and achieve sustainable results.
- **Collaboration and Coordination**: DDO should collaborate and coordinate their efforts with other development partners, multilateral organizations, and private sector stakeholders working in the field of digital trade and regional integration in Africa. By pooling resources, sharing knowledge, and aligning objectives, donors can amplify their impact and contribute to collective efforts to promote economic growth, trade, and integration across the continent.

By implementing these recommendations, donors can play a critical role in unlocking the potential of digital trade to drive economic development, foster regional integration, and create opportunities for inclusive growth and prosperity across Africa.

3.4. Recommendations for African Union/AfTCFA

Simplifying Procedures for International Trade. Consumers and producers in African nations face many obstacles when engaging in cross-border e-commerce, which makes it difficult to establish effective trade between countries. The AfCFTA Council, the African Union, and other relevant organizations need to expedite these processes in order to resolve this problem. Promoting the use of electronic documentation—such as digital shipping manifests and invoices—is essential to streamlining data exchange between companies and customs authorities. The efficiency and expansion of transnational e-commerce in Africa could be greatly improved by the adoption of these digital formats.

Fostering the connectivity and accessibility of the SMEs. AfCFTA emphasizes the importance of digital connectivity and infrastructure development to support e-commerce growth. Initiatives aimed at improving internet access, digital literacy, and e-payment systems enable SMEs to overcome logistical challenges and capitalize on the digital marketplace. SMEs can efficiently connect with suppliers, customers, and partners across Africa by leveraging digital technologies and online platforms. This facilitates seamless transactions and fosters economic integration.

Fostering knowledge sharing and collaboration among SMEs, industry stakeholders and e-commerce experts is critical to driving innovation and growth within the AfCFTA e-commerce ecosystem. To facilitate this, platforms, forums, and networks should be established where SMEs can exchange experiences, share best practices, and forge partnerships. This can foster a vibrant e-commerce community within the AfCFTA region. Governments can support these initiatives by providing funding, resources, and incentives. This will encourage collaboration and collective learning, ultimately empowering SMEs to thrive in the digital marketplace under AfCFTA.

Encourage innovation and digital entrepreneurship. To foster innovation and digital entrepreneurship, provide incubation support, funding opportunities, and mentorship for e-commerce startups and SMEs. Encourage the development of innovative solutions, technologies, and business models that address specific market needs and challenges. This will drive economic growth and job creation across Africa.

Monitor and evaluate the impact of the efforts of SMEs for development of e-commerce. Establish monitoring and evaluation mechanisms to track the impact of AfCFTA initiatives on SME participation in e-commerce. Assess the effectiveness of support programs and policies by collecting data on key performance indicators, such as SME growth, job creation, trade volumes, and digital inclusion. This will inform evidence-based decision-making and continuous improvement efforts by organizing capacity program for the benefit of SMEs and an international forum and Expo of African SMEs on annual basis to showcase their products and services. It will be useful also to create an African Federation of SMEs Agencies and initiate institutional policy dialogue and reverse linkage program.

By implementing these recommendations, African countries can make significant strides towards enhancing regional integration within the continent and unlocking the full potential of intra-African trade and cooperation.

> To foster innovation and digital entrepreneurship, provide incubation support, funding opportunities, and mentorship for e-commerce startups and SMEs. Encourage the development of innovative solutions, technologies, and business models that address specific market needs and challenges. This will drive economic growth and job creation across Africa.

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SUREVY ON BARRIERS TO E-COMMERCE IN AFRICA:

Findings and recommendations from the surveys in 5 African countries: Côte d'Ivoire, Egypt, Morocco, Tunisia, and Uganda

CONTENTS

INTRODUCTION

The development of e-commerce in Africa remains well below its potential. The outbreak of the COVID-19 pandemic has propelled the rapid growth of digital trade worldwide, making it increasingly essential for businesses and consumers. However, Africa's share of the global e-commerce market is estimated to be less than 0.5%, according to the United Nations Conference on Trade and Development (UNCTAD).

Africa's small share of e-commerce market is due to the overall inadequate e-readiness of African countries. The present study aims to provide a comprehensive assessment of the African e-commerce landscape. By gathering first-hand insights from Small and Medium Enterprises (SMEs) and conducting an in-depth analysis of the AfCFTA e-commerce framework, it seeks to provide a holistic view of the e-commerce landscape in Africa and to offer a better understanding of the status and future potential of the e-commerce. Ultimately, the study strives to increase SME participation, reduce e-readiness disparities across the continent, and provide actionable recommendations to foster the growth and development of Africa's e-commerce sector. The goal is to transform challenges into opportunities for a robust and inclusive e-commerce ecosystem in Africa.

This project adopts a two-pronged approach to comprehensively examine the e-commerce sector in Africa:

1) Survey and consultations with SMEs: to collect primary data through extensive surveys and consultations with SMEs across five African countries selected as pilot countries, namely Cote d'Ivoire, Egypt, Morocco, Tunisia, and Uganda. The survey explores key issues such as access to digital infrastructure, availability of skills and training, regulatory constraints, and other critical aspects.
2) Technical paper on e-commerce in the AfCFTA: This involves an in-depth analysis of the e-commerce framework in the AfCFTA. The technical paper will identify the strengths, weaknesses, opportunities, and threats of the current e-commerce landscape within the AfCFTA.

This document focuses primarily on the results of the surveys and consultations in the five selected countries. It describes the adopted methodology and details the main barriers hindering the development of digital trade in each country, from the SMEs perspective. It provides policy recommendations that will help design tailored actions to support SMEs in unlocking the potential of e-commerce and accessing new markets within the AfCFTA and beyond at international level.Top of Form

“The survey explores key issues such as access to digital infrastructure, availability of skills and training, regulatory constraints, and other critical aspects.

01

THE LANDSCAPE OF E-COMMERCE IN AFRICA

1.1. Exploring the e-Commerce landscape: insights from varied perspectives

E-commerce, often considered an offspring of the Internet revolution, presents a challenge in pinning down its precise meaning due to varying interpretations by different authors. These definitions reveal different aspects of the dynamic and multidimensional nature of e-commerce.

Turban (2010) defines e-commerce with a focus on online transactions, portraying it as the process of buying, selling, transferring, or exchanging products, services, and/or information over computer networks, predominantly the Internet and intranets. In contrast, Chaffey et al. (2019) offer a broader view, suggesting that e-commerce involves conducting various business activities online through websites and other Internet applications. It extends beyond physical products to include services, digital goods, and information. Laudon and Laudon (2020) assert that e-commerce encompasses using the Internet for business activities, such as buying and selling goods and services, online advertising and marketing, customer support, and transaction management. Strauss and Frost (2020) view e-commerce as an all-encompassing term covering all business activities conducted over electronic communication networks, including functions like marketing, advertising, customer service, and transaction management.

These diverse interpretations have significant implications for understanding the scope of e-commerce, its regulation, and how its growth and impact are measured and compared across regions and over time. For instance, while Turban's definition focuses on transactions, the perspectives of Chaffey et al., Laudon and Laudon, and Strauss and Frost take a more holistic approach, encompassing a broader range of business functions under the e-commerce umbrella. These distinctions also influence regulatory approaches, potentially leading to regulations that may overlook aspects like online advertising, privacy, and cybersecurity with narrower definitions.

In the context of Africa, defining e-commerce requires a nuanced approach considering unique regional factors, including the digital divide, dominance of the informal economy, widespread use of mobile money, and the aspirations of regional trade agreements such as the AfCFTA. The digital divide poses a significant challenge, necessitating a comprehensive definition that reflects the realities of both highly digitized urban centers and less connected rural areas. Moreover, Africa's large informal sectors often rely on digital platforms for business, challenging traditional definitions of e-commerce, as seen in informal online sales through social media platforms like Facebook and WhatsApp.
Mobile money services, such as M-Pesa, widely used in Africa, could be considered a form of e-commerce, although not included in some conventional definitions. Regional trade agreements, such as the AfCFTA, aim to boost intra-African trade, including e-commerce, requiring a common understanding of what constitutes e-commerce, a complex task given different interpretations across countries.

In essence, a comprehensive and applicable definition of e-commerce for Africa should acknowledge the continent's unique digital landscape, rapid technological evolution, and the rise of digital trade. It should be flexible and inclusive, encompassing a broad spectrum of online business activities, from formal transactions to informal digital trade, and from online sales to digital marketing and customer service. This approach will empower Africa to fully leverage the potential of e-commerce as a catalyst for economic development and digital transformation.

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1.2. Global and African e-commerce : A comprehensive overview

1.2.1. Transformative trends in global e-commerce

The global e-commerce landscape has experienced remarkable growth, characterized by an expanding array of online marketplaces offering diverse products and services. The year 1995 marked a pivotal moment with Amazon and eBay revolutionizing online shopping.

Visionaries like Jeff Bezos and Pierre Omidyar laid the foundation for this surge, exemplified by the launch of Amazon in 1997, initially envisioned as the "world's largest bookstore," generating an impressive $252 million in revenue in its inaugural full year. Similarly, Omidyar's AuctionWeb, which later evolved into eBay, generated nearly $95 million in its second year of operation. Amazon, now a leading online retailer, began as a book-centric platform, setting standards with its user rating system and category pages. Business-to-business e-commerce transactions have surpassed $15 trillion annually, and business-to-consumer transactions contribute another $1 trillion (Statista, 2022).

Presently, e-commerce operates in electronic markets and online supply chains, encompassing consumer-oriented markets like Amazon and eBay, multichannel retailers such as L.L. Bean, and extensive business-to-business markets dominated by giants like Alibaba (Investopedia, 2021). These electronic markets offer abundant buying and selling opportunities, seamlessly connecting buyers and sellers worldwide, providing consumers with product variety and giving sellers global visibility (Britannica, 2023).

In the past decade, e-commerce has dominated the retail sector, spurred by technological advancements, and increasing consumer participation. From 2014 to 2019, e-commerce witnessed a 30% growth, and this upward trend continues. In 2021 alone, global e-commerce sales are projected to reach approximately $4.28 trillion, with a growth rate of around 20%. China, the United States, and the United Kingdom are the primary contributors to this thriving e-commerce landscape, with China leading in terms of generated e-commerce revenue. The digital trade was further propelled by the covid-19 pandemic and the lockdown measures imposed by around the world.

1.2.2. Advancement of e-commerce in Africa: A comprehensive Exploration

The e-commerce sector in Africa is experiencing a significant upswing, with the US International Trade Administration (ITA) forecasting that the continent will surpass half a billion e-commerce users by 2025, representing a robust compound annual growth rate (CAGR) of 17% (ITA, 2023). Further penetration of the e-commerce market is anticipated to reach 40% by 2025, a testament to the sector's growth potential (see Figure 1).

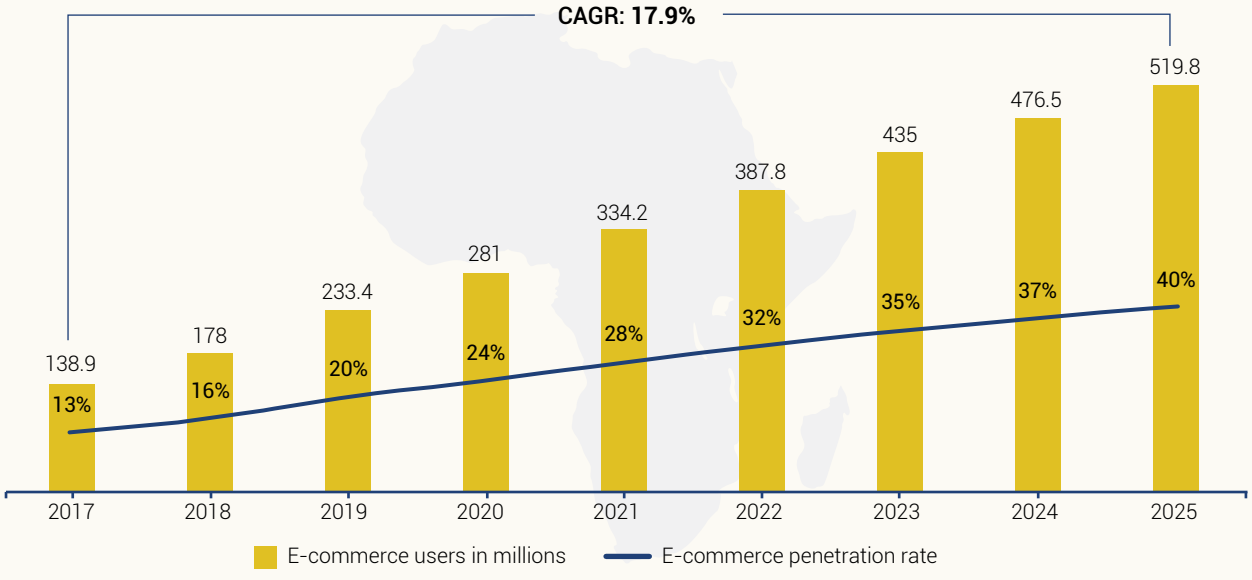


Figure 1. E-commerce penetration in Africa (source: ITA, 2023)

The use of mobile devices, a key catalyst for this market growth, accounted for 70% of total web traffic in Africa in 2022 (Statista, 2023a). Forecasts suggest that Africa could become a predominantly mobile-based market by 2040 (ITA, 2023) (see Figure 2).

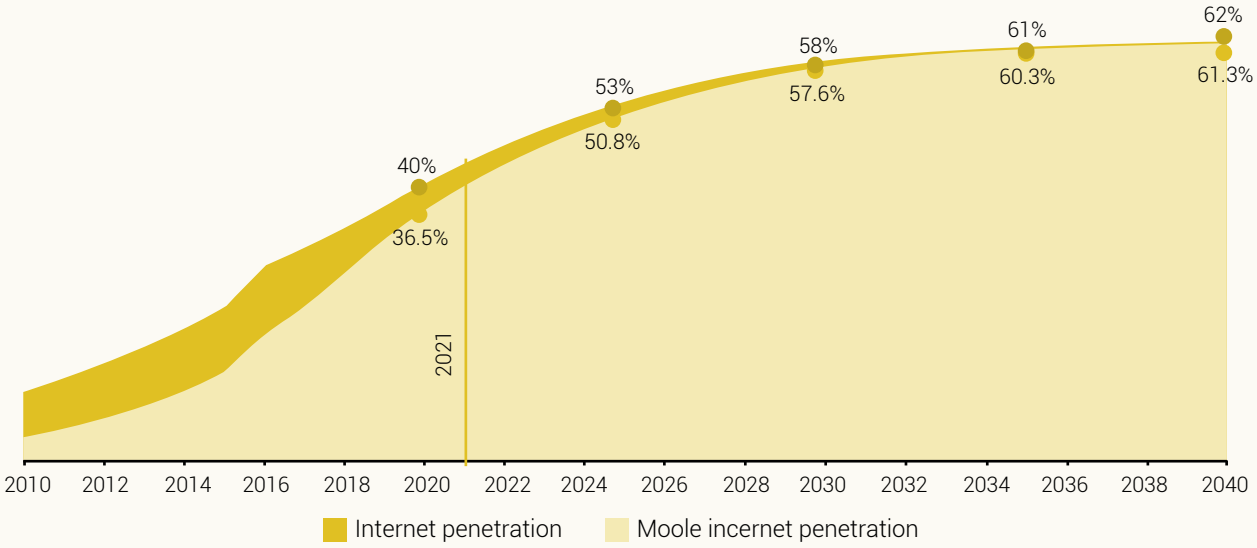


Figure 2. Internet penetration in Africa (source: ITA, 2023)

Despite this progress, financial inclusion in Africa remains a significant challenge. Debit card usage is limited to 10% of the population, and credit card ownership is low at an average of 2% across the continent (ITA, 2023). However, Kenya leads the way in financial inclusion with 88% of its population having a bank account, followed by South Africa at 82%, Nigeria at 51%, Morocco at 42%, and Egypt at 38% (ITA, 2023).

In terms of sector growth, the fashion and electronics sectors are forecast to generate significant revenues in the e-commerce market. Fashion products are projected to reach $13.4 billion in sales by 2025, while electronics are expected to generate $11.2 billion in annual sales (ITA, 2023) (see Figure 3).

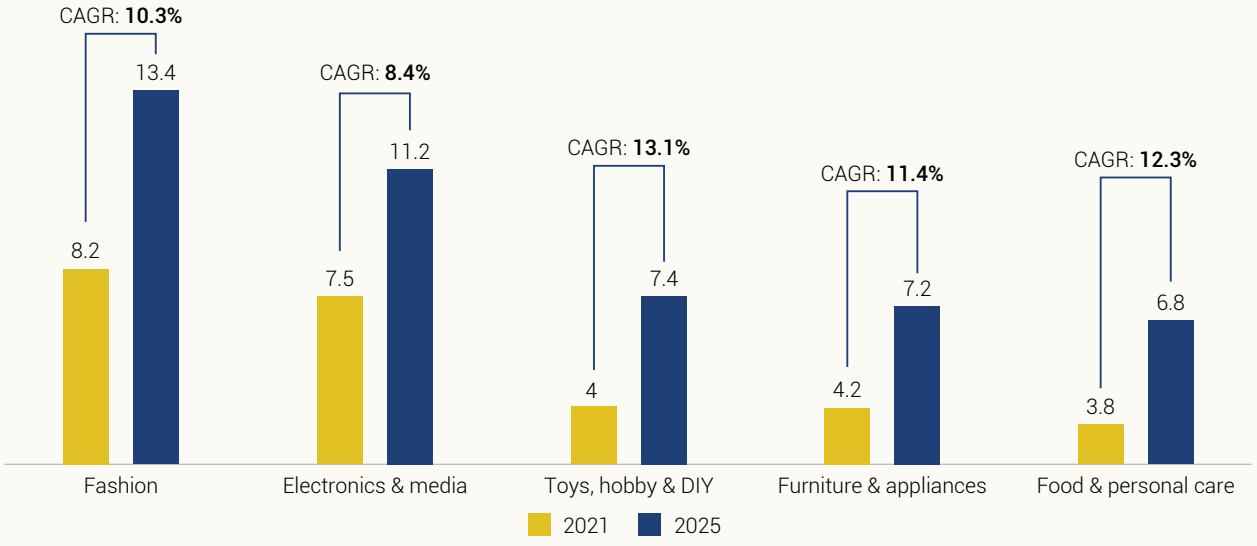


Figure 3. E-commerce revenues by sector in Africa in 2021 and 2025 in billions USD (source: ITA, 2023)

Despite digital transformation, more than 40% of Africa's population remains unbanked and nearly 90% of financial transactions are cash-based (African Banker, 2023). However, the GSM Association (GSMA) estimates that by 2025, 61 percent of connections in Africa will be via smartphones, indicating an opportunity for increased digital transactions (GSMA, 2022). The African e-commerce market reached an impressive $241.6 billion in 2022 and a staggering $567.6 billion by 2028. This represents a CAGR of 15.3% over the period 2023-2028, highlighting the rapid growth of the sector (IMARC Group, 2022).

1.3. Potential of e-commerce in Africa

1.3.1. Channels of change and impact

The e-commerce landscape in Africa is undergoing an unprecedented transformation. According to the ITA, it is anticipated that around 500 million people across the continent will be active e-commerce users by 2025, as outlined in their 2023 report. Additionally, the United Nations Conference on Trade and Development (UNCTAD) estimates that digital commerce has the potential to contribute up to $180 billion to the region's GDP by the same year (UNCTAD, 2022).

The GSMA forecasts a substantial increase in smartphone usage, with 61% of connections in Africa expected to be through smartphones by 2025, including 33% via 4G (GSMA, 2022). This surge in smartphone adoption aligns with the burgeoning growth of e-commerce across the continent. Simultaneously, the rising adoption of digital financial services, particularly mobile money, is playing a pivotal role in propelling the expansion of e-commerce.

E-commerce serves as a catalyst for businesses, enhancing efficiency, overcoming supply chain challenges, and broadening customer reach through online transactions. From the consumer standpoint, e-commerce offers access to a diverse range of products while saving time and money. Projections indicate remarkable growth in the African e-commerce market by 2027, with an estimated user base of 609.3 million users and a penetration rate of 44.3%, according to Statista's 2023 report (see Figure 4). This industry expansion holds the promise of stimulating economic growth, creating employment opportunities, bolstering the digital economy, and improving access to goods and services, particularly for consumers in rural areas.

1.3.2. Growth of the platform economy in Africa

Africa is becoming a real powerhouse of technological innovation, producing groundbreaking solutions tailored

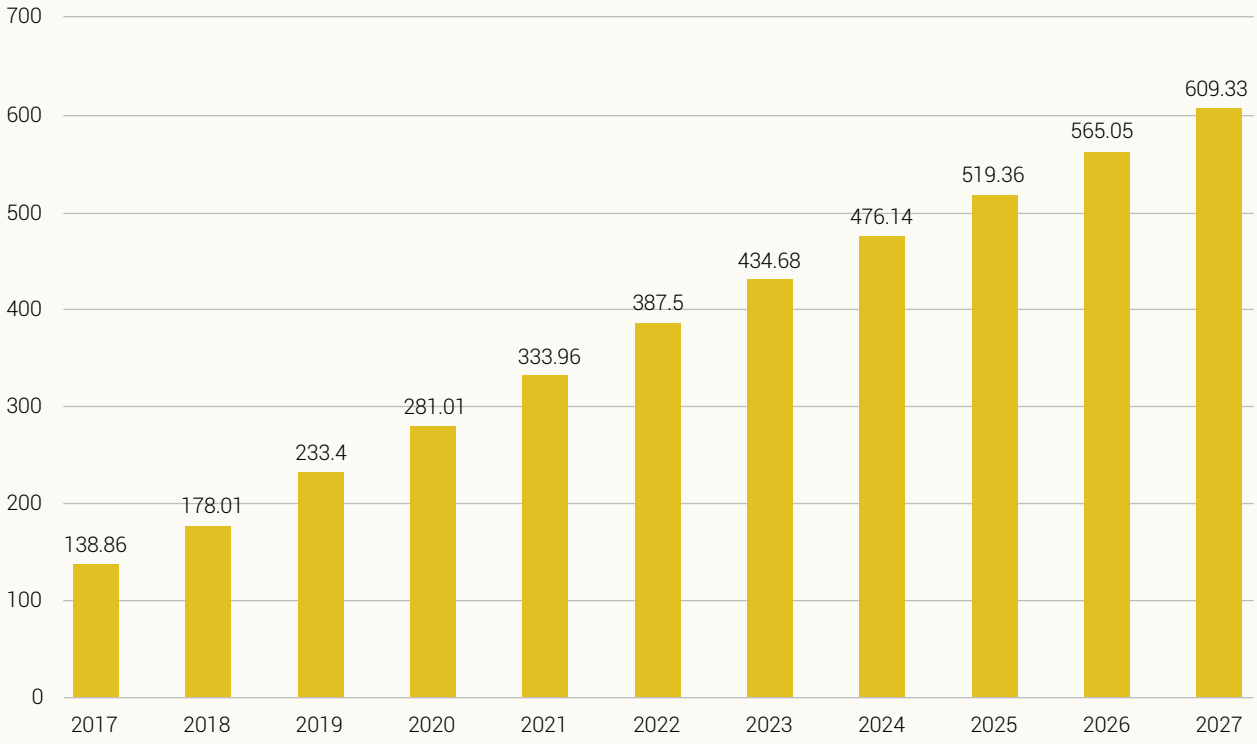


Figure 4. Number of e-commerce users in Africa 2017-2027 in billions USD (source: Statista, 2023b)

to the needs of the continent. One notable example is M-Pesa, a mobile payment system that allows users to store and transfer money using their cell phones.

AFRICA LAND OF TECHNOLOGICAL INNOVATIONS: M-PESA A MOBILE PAYMENT SYSTEM THAT BOOSTS THE GROWTH OF ONLINE EXCHANGES.

M-Pesa, which means «mobile money» in Swahili, was first launched in Kenya in 2007 by Safaricom, the country's largest mobile operator. This service allows users to store and transfer money using their mobile phone. M-pesa is now a joint venture between Safaricom and Vodacom since 2020. This service has also expanded to other countries including the Democratic Republic of Congo (DRC), Egypt, Ghana, Lesotho, Mozambique and Tanzania.

This service has been a resounding success in Africa, especially in rural areas where access to traditional banking services is limited. M-Pesa has overcome the barriers of geographic distance and lack of banking infrastructure, providing unbanked populations with a secure and convenient way to manage their money.

The impact of M-pesa on the growth of online trade in Africa is undeniable. By facilitating electronic payments, this system has encouraged the growth of e-commerce on the continent. Users can now make online purchases, pay for services and transfer money quickly and easily, using just their mobile phone. This has spurred the development of new online businesses and created a thriving digital ecosystem in Africa.

With mobile payment services such as M-Pesa, market traders, debt collectors, farmers and taxi drivers can avoid transportation or high-value cash transactions. This reduces the risk of associated theft, burglary and fraud. Additionally, individuals and contractors are no longer forced to spend hours queuing to pay their electricity and water bills, as these payments can now be made easily through M-Pesa. Allallowing the poorests obtain finance through transfers and remittances.

M-Pesa is used by various actors in city life, such as banana vendors and street vendors. Its use is so simple and fast. Once you have made a transaction, you will immediately receive a confirmation text. Simply click on the app, select «send money», enter the recipient's phone number and the amount to be transferred, then enter your four-digit password and voila! The transaction is completed in just 20 seconds, even when you are stuck in traffic. Even beggars in front of malls remind you that they accept payment via M-Pesa.

Recognizing the potential of e-commerce in Africa, Sacha Poignonnec, co-founder, and co-CEO of Jumia, highlights the opportunities e-commerce presents for businesses of all sizes across Africa. In particular, he points to the importance of this shift for small businesses, allowing them to grow more securely and economically. By moving to online sales, these businesses can grow with less investment while reaching a broader consumer audience.

DIGITIZING TRADE INFRASTRUCTURE IN AFRICA THROUGH A DIGITAL REGISTRY PLATFORM.

Le Smart Trade Africa Marketplace is a digital ledger platform that brings together all the elements of a business transaction: finance, logistics, customs and taxes, regulations and insurance. It allows the entire business value chain to have a single channel of information and facilitates better economic visibility and decision making. The platform integrates inter-African trade protocols as well as legal and regulatory guidelines and requirements of African governments. The Marketplace generates a structural change in the business process by bringing all players together on a single platform, thus reducing bilateral flows of information and documents.

Customer attitudes toward online shopping in both developed and developing economies may not reflect the same level of maturity, and the factors employed may cluster around specific categories in these contexts. Thus, exploring both worlds in the e-commerce sector can broaden our understanding of the context of developing economies for greater progress. This advancement is not limited to improving the online shopping experience but may also indirectly influence entrepreneurial intentions in developing economies. With a better understanding of the factors that influence an individual's intention to shop online, it is highly likely that more entrepreneurs will focus on launching digital commerce startups, which in turn will improve the economies of nations.

02

METHODOLOGY OF THE SURVEY

2.1. Overview of the mixed methods approach

The data collection for this survey has used a mixed method approach, combining both quantitative and qualitative data collection methods. Quantitative data are collected mainly through a survey that has been distributed to a representative sample of SMEs in each country. A total of 154 interviews were conducted across the five countries: 39 in Tunisia, 37 in Morocco, 37 in Uganda, 30 in Ivory Coast, and 11 in Egypt.

This survey consists of questions based on theoretical frameworks that ask respondents to rate their agreement with various statements using a Likert scale. These questions are designed to measure specific variables of interest, such as technology usage, e-commerce adoption, and the perceived impact of e-commerce on business performance.

The countries selected for this study span different regions of Africa, namely Côte d'Ivoire, Egypt, Morocco, Tunisia, and Uganda. The rationale behind the selection of these particular countries stems from their varying levels of e-commerce penetration, cultural diversity, and unique set of e-commerce barriers, thereby providing a rich and holistic overview of e-commerce adoption in Africa.

2.2. Research tools and data collection

For the purpose of this survey, we meticulously aligned our research methods with established academic principles and the current dynamics of the e-commerce sector, ensuring a comprehensive methodological framework. This approach was pivotal in acquiring profound insights into the adoption of e-commerce in African countries.

To achieve this, we formulated an interview guide encompassing both quantitative (for SMEs) and qualitative data (for focus groups), facilitating a nuanced understanding of the barriers to e-commerce in Africa.

The survey comprised questions grounded in theoretical frameworks, prompting respondents to rate their agreement with various statements using a Likert scale. These questions were strategically designed to measure specific variables of interest, such as technology usage, e-commerce adoption, and the perceived impact of e-commerce on business performance.

Subsequently, we convened a focus group in each country covered by the study, ensuring diverse representation from government agencies, telecommunications companies, logistics management, banks and financial institutions, consumer protection agencies, academic researchers, business owners, e-commerce platforms and payment gateways, international development organizations, and education and training institutions. This deliberate selection aimed to gather comprehensive and multifaceted insights into the barriers to e-commerce adoption in Africa.

"The survey comprised questions grounded in theoretical frameworks, prompting respondents to rate their agreement with various statements using a Likert scale.

2.3. Description of the focus groups and profile of interviewed SMEs

2.3.1 Description of the focus groups

The focus group are composed of a wide range of stakeholders in the e-commerce industry in each country covered by the study. This includes:

- **Owners and representatives of small and medium-sized enterprises (SMEs):** As the primary subject of the study, these participants provided first-hand accounts of the barriers and opportunities in adopting e-commerce. Their industries span various sectors such as retail, services, and manufacturing.
- **E-commerce platforms:** Representatives from established e-commerce platforms in Africa provided insights into the operational, logistical, and market dynamics of e-commerce on the continent.
- **Technology and Internet Service Providers:** These participants provided technical perspectives, particularly on issues related to Internet connectivity, cybersecurity, and technology infrastructure.
- **Government Officials:** Representatives from government agencies involved in commerce, technology, and regulation provided an authoritative perspective on policy-related barriers and potential policy remedies to the development of e-commerce.
- **Financial Institutions and Mobile Payment Providers:** These participants will address issues related to financial inclusion, mobile payments, and the role of banks in e-commerce.
- **Consumers:** Regular online shoppers provided a consumer perspective, particularly on issues of trust, product quality and payment methods.

2.3.2. Profile of Interviewed SMEs

The profiles of the interviewed SMEs provide an insightful overview of the key strengths and focal points each participant brings to the survey. These participants predominantly have diverse backgrounds in computer science, international business, management, engineering, and economics. Such expertise is crucial for comprehending the technical, logistical, and commercial facets of e-commerce, contributing significantly to insightful discussions on the challenges and opportunities within this domain.

The younger entrepreneurs offer unique perspectives on current barriers to e-commerce development, while their more experienced counterparts bring practical insights and relevant measures for implementation.

Representing a diverse array of sectors and economic activities, these SMEs facilitate discussions on the opportunities and challenges of e-commerce development in Africa. This diversity also allows for the exploration of potential synergies across various fields. The majority of enterprises fall within the retail sector, with notable representation in information technology, tourism and restaurant, agribusiness, and professional services sectors. Most of the interviewed SMEs are relatively young, with 0-5 years of experience in the market. In terms of size, the majority are small-scale operations with 0-10 employees. Leveraging their practical experience, these SMEs are well-positioned to contribute concrete solutions for advancing e-commerce.

The younger entrepreneurs offer unique perspectives on current barriers to e-commerce development, while their more experienced counterparts bring practical insights and relevant measures for implementation.

03

MAIN FINDINGS

3.1. Côte d'Ivoire

e-commerce sector in Ivory Coast is experiencing rapid growth, propelled by an expanding economy, a burgeoning middle class, and a substantial increase in internet penetration, reaching 45.4% by early 2023. Noteworthy online marketplaces such as Jumia, Afrimarket, and Kaymu have emerged as prominent players. The market, valued at approximately $80 million, encompasses a diverse range of participants, spanning international corporations to informal sellers utilizing social media platforms (Dataportal, 2023a; ITA, 2022a).

Similar to the aforementioned countries, Ivory Coast boasts favorable infrastructure and connectivity, coupled with a skilled workforce. While these aspects require some improvement, they, in general, do not pose significant barriers to e-commerce development. However, key impediments to e-commerce growth in Ivory Coast are primarily attributed to government support, trust and security concerns, payment methods, and socio-cultural factors. Additionally, challenges related to limited access to finance and logistics and transport persist as barriers hindering the advancement of e-commerce in Ivory Coast. Addressing these barriers will be pivotal for fostering sustained growth in the country's e-commerce landscape.

Analysis of the main barriers

Technology, infrastructure and connectivity

Similar to other African countries mentioned, technology, infrastructure, and connectivity do not present significant barriers to e-commerce development in Ivory Coast. However, there are areas that require improvement:

1. ***Internet prices***: The cost associated with constructing and maintaining essential infrastructure, such as high-speed fiber-optic cables, is relatively high in Ivory Coast. This elevated cost is passed on to consumers and businesses, resulting in higher internet access

Technology, infrastructure and connectivity +	Government policies and administrative procedures **	Access to market and finance *	Digital skills +
No barrier, but needs future improvements - The internet prices - Improve telecommunications infrastructure in rural areas	- Regulatory framework (**) - Taxation and Tariffs (**) - High customs duties (*) - The lack of regulation for the predominance of the informal sector (**)	- Lack of training for entrepreneurs (*) - High distribution costs (*) - Entry and maintaining cost (**)	No barrier, but needs future improvements - Future training fo entrepreneurs - Programs for reduction of illiteracy rate
Trust and security (cybersecurity) issues **	**Logistics and transport infrastructures** *	**Payment method obstacles** *	**Socio-cultural barriers** **
Problems linked to cyber crime (**) - Counterfeiting (**) - The lack of conformity between the merchandise online and that delivered (*)	- Means of delivery (*) - Delay due to a lack of effective logistics (*)	- Lack of a reliable payment system (*) - High fee for payment with foreign currency exchange (*)	- Language barriers (*) - Lack of culture for online commerce (**) - Cash preference (**)

Table 1: The sub categorical barriers of e-commerce in Ivory Coast

Note: Big barrier (**); barrier (*); No impact (-); Not a barrier (+); Not a barrier at all (++)

expenses that may be less affordable for some segments of the population.

2. ***Enhance telecommunications infrastructure in rural areas*:** Ivory Coast encounters challenges in its telecommunications infrastructure, particularly in terms of providing reliable internet services and mobile network coverage, especially in rural areas. These limitations have implications for various sectors, including businesses, education, healthcare, as well as communication and information accessibility in these regions. Addressing these infrastructure shortcomings is crucial for fostering equitable development across the country.

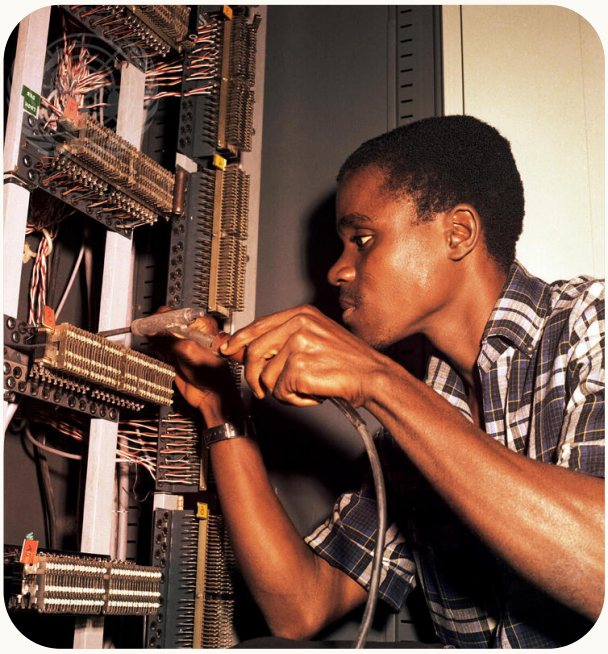
Government policies and administrative procedures

Government support and administrative hurdles emerge as significant barriers to e-commerce growth in Ivory Coast, giving rise to several sub-barriers that impede sectoral expansion:

1. ***Regulatory framework*:** A robust and supportive regulatory framework is crucial for the flourishing of e-commerce. Unfortunately, Ivory Coast currently lacks specific regulations for e-commerce. This absence leaves a void in legal structures that protect consumers, address issues such as fraud and privacy, and establish a fair playing field for e-commerce businesses. Inconsistent or burdensome regulations further hinder the growth potential of the e-commerce sector within the country.

2. ***Taxation and tariffs:*** The complexity of tax structures, coupled with high import tariffs and customs duties on e-commerce transactions, can escalate the overall cost of online goods and services. This elevation in cost puts e-commerce at a disadvantage against traditional brick-and-mortar businesses. The intricate tax environment may discourage potential entrants into the e-commerce market, acting as a hindrance to its growth.

3. ***High customs duties:*** The challenge of accurately predicting and accounting for customs duties poses difficulties for e-commerce businesses. The intricate nature of customs regulations, fluctuating duty rates, and the potential for unforeseen fees introduce uncertainty, discouraging businesses from participating in cross-border trade and impeding the sector's expansion.



> Ivory Coast encounters challenges in its telecommunications infrastructure, particularly in terms of providing reliable internet services and mobile network coverage, especially in rural areas.

4. ***Lack of regulation for the informal sector dominance:*** The prevalence of the informal sector, notably through platforms like Facebook and WhatsApp, presents a challenge for e-commerce development in Ivory Coast. This informal e-commerce landscape, lacking clear regulations, can adversely affect regularly operating businesses and contributes to the ambiguity surrounding the true extent of e-commerce development in the country.

Access to finance and market

Accessing finance and market opportunities for e-commerce growth in Ivory Coast presents considerable challenges, with the following sub-barriers identified:

1. ***Lack of financing for entrepreneurs:*** E-commerce ventures demand substantial initial capital for activities such as establishing online platforms, procuring inventory, and investing in technology.

Securing funding for these purposes proves to be a formidable challenge in Ivory Coast, hindering many entrepreneurs from successfully launching their e-commerce initiatives.

2. ***High distribution costs:*** Distribution costs in Ivory Coast are significantly impacted by factors like distance, urban density, and delivery options. These costs are notably high, adding to the financial burden of e-commerce businesses. Managing returns and handling the reverse logistics process further contributes to the overall expense, encompassing activities such as processing returns, restocking products, and addressing damaged goods.

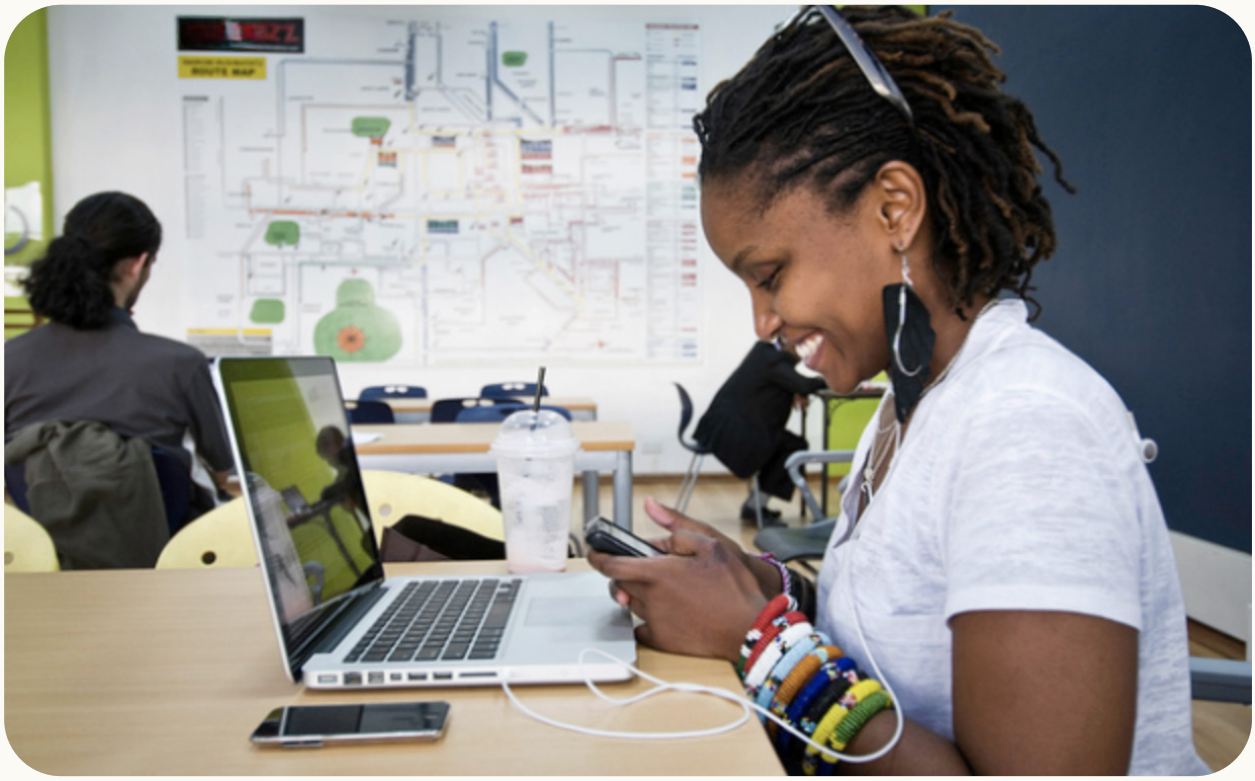
3. ***Entry and maintenance costs:*** Establishing a professional and user-friendly e-commerce website involves considerable expenses, particularly when custom development is required. Subsequent costs include hosting services, essential for ensuring website performance and reliability. These hosting services come with recurring fees, and investing in robust infrastructure becomes necessary to handle website traffic and maintain uptime, thereby incurring additional costs. The combination of entry and maintenance costs poses financial challenges for businesses in Ivory Coast aiming to thrive in the e-commerce sector.

Digital skills

Digital skills are not perceived as a hindrance to e-commerce growth in Ivory Coast; however, the following issues warrant attention for improvement:

1. ***Future training for entrepreneurs:*** The absence of adequate training opportunities for entrepreneurs in Ivory Coast emerges as a significant obstacle to the country's e-commerce expansion. Successfully navigating the realm of e-commerce requires a solid grasp of technology, encompassing skills in website development and online marketing. Many entrepreneurs may lack the necessary technical expertise needed to establish and maintain an e-commerce website, integrate payment gateways, manage inventory, and optimize user experiences. Unfortunately, there is currently a deficit in training programs addressing these essential skills. Consequently, entrepreneurs may be compelled to hire external expertise or, in some cases, refrain from transitioning to online activities due to this skills gap.

2. ***Programs to reduce illiteracy rates*:** Ivory Coast contends with a notable prevalence of illiteracy and digital illiteracy. Individuals with limited literacy skills may struggle to use digital devices, such as smartphones, tablets, or computers. This creates a



Ivory Coast grapples with various forms of online fraud perpetrated by cybercriminals, including payment fraud, identity theft, and phishing. These malicious activities instil a sense of apprehension among consumers, discouraging them from engaging in online transactions and eroding trust in e-commerce platforms.

barrier to accessing e-commerce platforms, hindering their ability to browse, shop, or engage in online transactions.

Addressing the illiteracy challenge through targeted programs is crucial for fostering broader participation in the digital economy and promoting e-commerce inclusivity.

Trust and security (cybersecurity) issues

Trust and cybersecurity pose substantial challenges to e-commerce development in Ivory Coast, with specific issues outlined below:

1. ***Problems linked to Cybercrime*:** Ivory Coast grapples with various forms of online fraud perpetrated by cybercriminals, including payment fraud, identity theft, and phishing. These malicious activities instil a sense of apprehension among consumers, discouraging them from engaging in online transactions and eroding trust in e-commerce platforms.

2. ***Counterfeiting:*** Counterfeiting emerges as a significant impediment in Ivory Coast's e-commerce sector, echoing challenges faced by many nations. The proliferation of counterfeit products carries severe repercussions, including the erosion of consumer trust, damage to legitimate businesses, and the potential hindrance of e-commerce development.

3. ***Lack of conformity between online merchandise and delivery*:** A prevalent issue in Ivory Coast's e-commerce landscape is the discrepancy between online product representations and the delivered items. Businesses often showcase images online that do not accurately reflect the real products, leading to instances where delivered items differ significantly from their online depictions. This disparity undermines consumer trust, prompting a shift towards physical shopping as consumers seek reliability and accuracy in their purchases.

Addressing this challenge is pivotal for restoring and enhancing trust in online businesses.

Logistics and transport infrastructures

Survey findings for Ivory Coast reveal the following barriers:

1. ***Means of delivery*:** In Ivory Coast, motorbikes are predominantly used for short-distance deliveries. However, this mode of delivery poses security concerns, with frequent accidents occurring during the transportation process. Small businesses, constrained by limited financial resources, find it challenging to invest in secure and effective logistics solutions. As a result, they are compelled to resort to less secure and inefficient methods for delivering products to consumers.

2. ***Delays due to a lack of effective logistics*:** Inadequately optimized logistics operations within a company can led to delays in the timely shipment of products to customers. Factors contributing to these delays include suboptimal inventory management, inefficient route planning, and transportation issues. Shipping delays not only result in dissatisfied customers but also have the potential to harm a company's reputation.

Addressing these logistical challenges is crucial for ensuring smooth and timely product deliveries.

Payment method obstacles

Concerning payment method obstacles, the following barriers can significantly impact the development of e-commerce in Ivory Coast:

1. ***Lack of a reliable payment system*:** The availability of online payment options in Ivory Coast is quite limited. A significant portion of the population does not have

access to credit cards, and even platforms like PayPal have stringent restrictions. PayPal imposes limitations on transactions in Ivory Coast due to perceived cybercrime risks. As a result, Ivorian customers and merchants are only able to pay through PayPal by linking a credit card to their accounts, and they face restrictions on receiving or withdrawing money. This limitation poses considerable challenges for entrepreneurs seeking to expand their e-commerce activities.

2. ***High fees for payments with foreign currency exchange*:** The utilization of cards with foreign currencies incurs high fees, discouraging people from making online purchases and deterring them from recommending online shopping to others. The absence of regulations for foreign exchange rates further compounds this issue, directly impacting the overall growth of e-commerce in Ivory Coast.

Addressing these challenges is essential for reducing the informal trade and creating a more inclusive and accessible payment environment for both consumers and businesses.

Socio-cultural barriers

Our survey findings highlight several socio-cultural barriers that influence e-commerce in the following ways:

1. ***Language barriers*:** Language barriers can act as a significant impediment, restricting access to essential information and resources for both e-commerce businesses and consumers. Platforms and product descriptions predominantly presented in French may create difficulties for those who do not speak French, limiting their ability to comprehend and navigate these platforms. E-commerce enterprises exclusively using French may miss opportunities with potential customers who speak other languages, such as Dioula or Bété. Overcoming this language barrier is crucial for expanding the customer base and increasing market reach.

2. ***Lack of online commerce culture:*** Shopping habits in Côte d'Ivoire are deeply ingrained in traditional marketplaces and face-to-face transactions. The cultural preference for physical shopping experiences and engaging in bargaining with sellers poses a challenge to the widespread adoption of e-commerce. The traditional commerce model may be more deeply rooted in the cultural practices of the population, making it essential to address this barrier for successful e-commerce integration.

3. ***Cash preference*:** The "cash-on-delivery" option is widely favoured in Ivory Coast. Customers prefer paying in cash upon the delivery of their online orders. While offering flexibility, managing cash payments can be logistically challenging for e-commerce companies, leading to increased operational costs and potential risks.

Striking a balance between accommodating customer preferences and streamlining payment processes is essential to address this socio-cultural barrier effectively.

3.2. Egypt

As the third-largest economy in Africa, Egypt stands as a promising frontier for the expansion of e-commerce, boasting an Internet penetration rate of 72.2%, equating to 80.75 million users (Dataportal, 2023b). The country's substantial online consumer base, comprising 46.25 million active social media users, equivalent to 41.4% of the total population, underscores the vast potential for e-commerce growth. Noteworthy platforms such as Souq.com and Noon have already experienced considerable success in this dynamic market. However, the current trajectory of e-commerce is hindered by the low adoption of digital payments, primarily due to a sizable unbanked population.

Egypt shares similarities with Tunisia and Morocco, possessing a conducive infrastructure, connectivity, and a skilled workforce that collectively support the development of e-commerce. While these factors present favourable conditions, their optimization remains an ongoing process. The impediments to e-commerce growth in Egypt primarily stem from challenges in government policies and administrative procedures, limited access to finance, trust and security concerns, payment methods, and socio-cultural barriers.

Despite these obstacles, the underlying potential for e-commerce in Egypt remains immense, and addressing these challenges presents an opportunity for further economic development and technological advancement in the region. By strategically overcoming these hurdles, Egypt can unlock the full scope of its e-commerce potential, contributing significantly to the country's economic growth and digital transformation.

Analysis of the main barriers

Technology, infrastructure, and connectivity (+)

Egypt ranks among the African countries with the highest connectivity rates. The survey results underscore that current advancements in infrastructure, technology, and connectivity have not posed barriers to the growth of e-commerce. However, there are areas for potential improvement in the future:

Technology, infrastructure and connectivity + No barrier, but needs future improvements - Improvement High-Speed Internet - Improving the connectivity in rural areas	**Government policies and administrative procedures** * Intellectual Property and Copyright Enforcement (*) - Bureaucratic hurdles and administrative red tape (*) - Taxation and Customs (*)	**Access to market and finance** * - Lack of access to funding(*) - High delivery costs (*)	**Digital skills** + No barrier, but needs future improvements - Future training on digital skills for employees
Trust and security (cybersecurity) issues * Data Breaches (*) - Phishing and Fraud (**) - Payment Security (*). - Lack of Cybersecurity Awareness (*)	**Logistics and transport infrastructures** + No barrier, but needs future improvements - Last-Mile Delivery Challenges - Improvement of limited. Delivery Infrastructure	**Payment method obstacles** * Cash-based economy (**) - Foreign currency problem (*) - Low e-banking penetration (*)	**Socio-cultural barriers** * - Payment preferences and trust issues (*) - Cultural Practices (*)

Table 2: The sub categorical barriers of e-commerce in Egypt

Note: Big barrier (**); barrier (*); No impact (-); Not a barrier (+); Not a barrier at all (++)

1. **Enhancing high-speed internet:** Even among those with internet access, concerns persist regarding the quality and speed of connectivity. Sluggish and unreliable internet connections can dissuade users from actively participating in e-commerce activities, such as online shopping.

2. **Improving connectivity in rural areas:** Certain rural areas face challenges with either no internet access or insufficient internet speeds. This situation poses difficulties for both consumers and businesses. Consumers in these areas struggle to access e-commerce platforms and lack awareness of online shopping opportunities. Simultaneously, businesses encounter obstacles in reaching these consumers, hindering the development of their ventures in regions with slow or absent internet access. Addressing these connectivity issues in rural areas is essential for fostering inclusive e-commerce growth and ensuring that businesses can effectively reach and serve consumers in all parts of the country.

Government policies and administrative procedures (*)

The Egyptian government has implemented various initiatives to foster the development of e-commerce, including a strategy aimed at elevating the current e-commerce share in the GDP to 2.32% and doubling the number of businesses engaged in online sales. Despite these efforts, government support remains a significant obstacle hindering the advancement of online business activities in Egypt. The key sub-barriers identified in the findings include:

> The Egyptian government has implemented various initiatives to foster the development of e-commerce, including a strategy aimed at elevating the current e-commerce share in the GDP to 2.32% and doubling the number of businesses engaged in online sales.

1. **Intellectual property and copyright enforcement:** The effective protection of intellectual property rights, including copyright, is not consistently ensured in Egypt. This inadequacy exposes both local and international e-commerce businesses to challenges such as product counterfeiting and intellectual property theft. The absence of robust intellectual property rights protection significantly impedes business operations, as there is a prevalent lack of safeguards against unauthorized replication.

2. **Bureaucracy and administrative red tape:** Bureaucratic hurdles and administrative red tape pose formidable obstacles to the growth of e-commerce businesses in Egypt. Navigating the regulatory landscape becomes a formidable challenge, as cumbersome administrative procedures slow down business operations. The protracted waiting times for the approval of regulatory paperwork not only cause delays but also hinder the overall development of businesses.

3. **Taxation and customs challenges:** The complexity of the tax system in Egypt and the burdensome nature of certain tax regulations create challenges for e-commerce businesses. Confusing and frequently changing tax laws, customs procedures, and import duties act as barriers to cross-border e-commerce. Additionally, these factors impose considerable administrative burdens on businesses, further impeding their operations.

Addressing these barriers through comprehensive reforms and streamlined processes is crucial to creating an enabling environment for e-commerce growth in Egypt. By mitigating these challenges, the government can actively contribute to the flourishing of online businesses and the broader success of the e-commerce sector.

Access to market and finance (*)

Barriers to e-commerce growth in Egypt are rooted in challenges related to market access and financial constraints. Our findings highlight the following sub-barriers:

1. ***High entry costs*:** The establishment of e-commerce platforms, integration of electronic payment systems, and the implementation of robust data security measures entail substantial upfront expenses. While these costs are essential for ensuring a secure and satisfying client experience, they present a significant hurdle for smaller businesses and emerging entrepreneurs in Egypt. Expenses associated with website development, hosting, payment gateways, and inventory can be particularly burdensome, making it challenging for these entities to enter the e-commerce market without adequate funding.

2. ***Lack of access to funding*:** Entrepreneurs and small businesses in Egypt may encounter difficulties in securing the necessary funding to initiate or expand their e-commerce ventures. Traditional banking institutions may exhibit reluctance in extending loans to startups, and the availability of venture capital or angel investors may be limited, exacerbating the financial constraints faced by emerging businesses.

3. ***high delivery costs*:** The efficiency and affordability of delivery systems are paramount to the success of e-commerce. In Egypt, the logistics and delivery costs can be prohibitively high, influencing the overall cost structure of e-commerce businesses. This cost disparity can render e-commerce less competitive compared to traditional retail, further complicating the landscape for businesses in the sector.

Addressing these financial barriers through targeted interventions and support mechanisms is crucial for fostering a more inclusive and vibrant e-commerce ecosystem in Egypt. By alleviating entry costs and facilitating access to funding, the government and relevant stakeholders can contribute significantly to the growth and competitiveness of the e-commerce sector.

Digital skills (+)

The development of digital skills for e-commerce growth in Egypt doesn't present a significant barrier. However, there is room for improvement as outlined below:

Future Training on Digital Skills for Employees: The successful operation of e-commerce necessitates technical expertise in setting up and managing online stores, creating websites, and optimizing digital marketing campaigns. The absence of these skills can pose challenges for Egyptian entrepreneurs and small businesses seeking to establish an online presence and compete effectively in the e-commerce market. This deficiency may impede their capacity to navigate the intricacies of an e-commerce environment, where proficiency in online marketing, customer service, data analysis, and other digital skills is paramount. Therefore, there is a need for future training initiatives to address this gap and empower individuals with the requisite digital competencies.

Trust and security (cybersecurity) issues (*)

Certainly, cybersecurity poses a significant obstacle to the advancement of e-commerce in Egypt, much like in other African countries. The following are some of the cybersecurity challenges that have the potential to impede the growth of e-commerce in Egypt:

1. ***Data Breaches:*** E-commerce platforms in Egypt, akin to their global counterparts, manage sensitive customer information encompassing personal details and payment data. Inadequate protection of these platforms exposes them to the risk of data breaches, leading to the loss of customer trust, financial setbacks, and legal repercussions.
2. ***Phishing and fraud*:** Cybercriminals employ diverse tactics, including phishing attacks, to deceive customers into divulging personal information and login credentials. Such deceptive practices can result in fraudulent transactions and identity theft, creating an atmosphere of distrust among customers and discouraging their participation in online shopping—an issue observed frequently in Egypt.

3. ***Payment security*:** The security of online payment methods is paramount for e-commerce businesses in Egypt. Any vulnerabilities in payment processing systems can be exploited by cybercriminals to pilfer financial information. Customers seek assurance that their transactions are secure, and a perceived lack of safety may deter them from engaging in e-commerce activities altogether.

4. ***Lack of cybersecurity awareness*:** A considerable number of businesses and consumers in Egypt may not possess comprehensive awareness of the cybersecurity risks associated with e-commerce. This lack of awareness can lead to suboptimal security practices, making it easier for cybercriminals to exploit vulnerabilities and compromise the integrity of e-commerce transactions.

Addressing these cybersecurity challenges necessitates a proactive approach involving robust protective measures, regular awareness campaigns, and ongoing education for businesses and consumers alike. By enhancing cybersecurity practices and fostering awareness, Egypt can create a more secure e-commerce environment, thereby encouraging greater trust and participation in online transactions.

Logistics and transport infrastructures (+)

As the e-commerce industry in Egypt experiences continuous growth, overall infrastructure and logistics do not pose significant barriers. However, our findings highlight the following areas for improvement:

1. ***Last-Mile Delivery Challenges:*** The final leg of the delivery process, commonly referred to as the last mile, proves to be the costliest and logistically intricate aspect of e-commerce operations. In Egypt, negotiating through narrow streets and delivering to apartment buildings or gated communities presents notable challenges, often leading to delayed or unsuccessful deliveries.

2. ***Enhancement of Delivery Infrastructure:*** The absence of well-established courier and delivery services can impede the expansion of e-commerce. Many regions in Egypt may lack reliable delivery options, creating hurdles for e-commerce companies in reaching customers in remote or less-developed areas. Strengthening the delivery infrastructure is essential for ensuring broader and more accessible service coverage across the country.

Payment method obstacles (*)

Nearly 67% of Egyptians have recently increasingly embraced at least one digital payment option. This shift not only offers enhanced convenience for customers but also reduces the risks associated with fraud and theft. The surge in popularity of mobile payment systems has provided consumers with a swift and practical means of making purchases via their mobile devices. These platforms also extend their services to include money transfers and bill payments, facilitating seamless business transactions with individuals or companies wherever they may be located.

However, despite the positive strides in digital payments, the development of e-commerce in Egypt encounters significant challenges, particularly related to payment methods. Our findings identify the following barriers hindering the progress of e-commerce in the country:

1. ***Cash-Based Economy*:** Egypt has traditionally operated as a cash-based economy, with a considerable portion of the population favouring physical currency for transactions. This preference for cash poses a hindrance to the widespread adoption of digital payment methods in the e-commerce landscape.

2. ***Foreign Currency Issues*:** Transactions often face cancellations if conducted with cards in foreign currencies. Many online businesses exclusively accept cards with the local currency, leading to immediate declines for transactions made with foreign cards. This frustration not only hampers consumer experiences but also restricts their ability to make online purchases.

3. ***Low E-Banking Penetration*:** A significant segment of the Egyptian population remains unbanked or underbanked, with limited access to traditional banking services. Despite the existence of digital wallets and e-banking applications, their adoption remains low. This limited penetration hinders the widespread adoption of e-commerce in Egypt.

Addressing these payment-related barriers necessitates strategic interventions, such as fostering digital literacy, expanding the acceptance of foreign currency transactions, and promoting the adoption of digital banking services. By actively overcoming these challenges, Egypt can pave the way for a more inclusive and robust e-commerce ecosystem.

Socio-cultural barriers (*)

Within the realm of socio-cultural barriers, our findings reveal the following challenges:

1. ***Payment preferences and trust issues*:** The preferred payment method in Egypt remains cash-on-delivery, primarily stemming from a lack of trust in online payment systems and concerns regarding the security of personal and financial information. Adapting to these preferences is crucial for e-commerce businesses, but it also contributes to the slower growth of the industry, posing challenges for businesses aiming to expand their reach.

2. ***Cultural practices*:** Traditional shopping, particularly in local markets and souks, is deeply embedded in Egyptian culture. The emergence of e-commerce may be perceived as a potential threat to these entrenched practices, leading to resistance from consumers. Bridging the gap between traditional and online shopping experiences is essential for fostering acceptance and encouraging the gradual adoption of e-commerce.

3. ***Language barriers*:** While Arabic serves as the official language of Egypt, various dialects and local languages are spoken across the country. E-commerce platforms, at times, are created in a specific dialect or in English. This poses challenges for consumers, as not everyone can comprehend other languages or dialects, causing difficulties in navigating and engaging with these platforms.

Addressing these socio-cultural barriers requires a nuanced approach that includes building trust in online payment systems, incorporating elements of traditional shopping into the e-commerce experience, and ensuring linguistic inclusivity on digital platforms. By recognizing and actively mitigating these challenges, the e-commerce landscape in Egypt can evolve to accommodate diverse cultural preferences and foster broader acceptance.

“Traditional shopping, particularly in local markets and souks, is deeply embedded in Egyptian culture. The emergence of e-commerce may be perceived as a potential threat to these entrenched practices, leading to resistance from consumers. Bridging the gap between traditional and online shopping experiences is essential for fostering acceptance and encouraging the gradual adoption of e-commerce.

3.3. Morocco

Morocco's e-commerce landscape is witnessing substantial growth, propelled by robust telecommunications infrastructure and an increasing level of digital literacy. Notable players such as Jumia, Hmizate, and Avito have made significant strides, offering consumers a diverse range of products and services. Despite these advancements, the industry faces hurdles stemming from regulatory and legal challenges, particularly in data protection and online dispute resolution, as highlighted in both ITA reports and our survey findings.

Similar to Tunisia, Morocco boasts a favourable foundation with well-established infrastructure, connectivity, and a skilled workforce, all contributing to the e-commerce sector's development. While these elements exhibit room for enhancement, they currently do not pose significant barriers to e-commerce expansion. However, notable challenges hindering the sector's growth in Morocco include governmental policies and administrative procedures, limited access to finance, concerns related to trust and security, payment methods, and socio-cultural barriers. Addressing these challenges is crucial for sustaining and accelerating the positive trajectory of e-commerce in Morocco.

Presentation of Findings in relation to main barriers towards e-commerce adoption Technology, infrastructure and connectivity (+)

In recent years, Morocco has witnessed remarkable progress in technologies, infrastructure, and connectivity, fostering a notable surge in e-commerce adoption. Major urban areas like Casablanca, Rabat, and Marrakech have become hubs for online commerce, hosting numerous e-commerce platforms and payment service providers, thereby creating a conducive environment for e-commerce development. The expanding reach of mobile connectivity

Technology, infrastructure and connectivity +	**Government policies and administrative procedures** *	**Access to market and finance** *	**Digital skills** ++
No barrier, but needs future improvements - Improvement of Internet penetration in rural areas - Improvement of reliability and speed of the Internet	- Consumer protection (*) - Cross-Border Trade (*) - Complex administrative procedures (*) - Taxation	- High initial cost (**) - Limited access to financing (*) - Logistics and delivery costs (*)	- No barrier, but needs future improvements - Future training for employees - Improve the digital literacy of consumers by different programs
Trust and security (cybersecurity) issues *	**Logistics and transport infrastructures** +	**Payment method obstacles** *	**Socio-cultural barriers** *
- The security of paying online(*) - Lack of trust in online transactions (*)	No barrier, but needs future improvements - Transport infrastructure in rural areas	- Payment processing challenges (**) - Payment Systems (*) - Paying cash (*)	- Risk and distrust (*) - Preference for in-person interactions (*) - Attachment to commercial traditions (*)

Table 3: The sub categorical barriers of e-commerce in Morocco

Note: Big barrier (**); barrier (*); No impact (-); Not a barrier (+); Not a barrier at all (++)

further facilitates access to e-commerce for a growing number of Moroccans. Survey results affirm that, presently, technology, infrastructure, and connectivity are not impeding factors for the sector's growth. However, areas for future enhancement include:

1. Enhancing internet penetration in rural areas: Despite an overall increase in Internet penetration, Morocco still faces challenges in providing high-speed internet access to rural areas. This limitation restricts the potential customer base for e-commerce enterprises, with noticeable disparities in internet infrastructure between urban and rural regions.

2. Enhancing reliability and speed of internet in rural areas: The quality and reliability of internet connections in Morocco exhibit variations. Sluggish and unreliable internet can lead to customer frustration and disrupt the seamless functioning of e-commerce websites. Addressing these issues is imperative for ensuring a more inclusive and efficient e-commerce landscape, especially in less-connected rural areas.

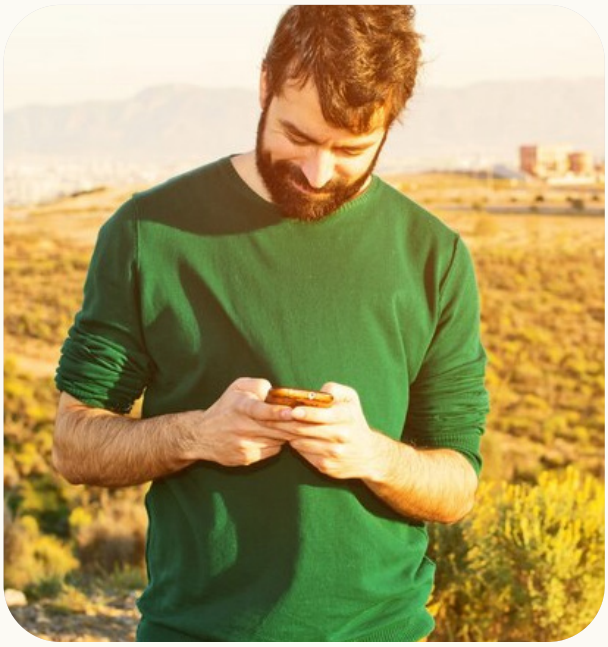
Government policies and administrative procedures (*)

The Moroccan government, recognizing the pivotal role of e-commerce in economic growth, is actively crafting a tailored regulatory framework for the sector. This initiative aims not only to delineate the rights and responsibilities of stakeholders but also to safeguard consumers and foster trust in electronic commerce. Despite these efforts, government support emerges as a primary impediment hindering the development of e-commerce in Morocco, with the following sub-barriers elucidated:

1. Consumer protection challenges: The enforcement of regulations pertaining to consumer protection and electronic transactions falls short, constituting a significant barrier to the development of e-commerce in Morocco.

2. Cross-border trade complexities: Operations in cross-border e-commerce encounter additional hurdles, including trade barriers, intricate import/export regulations, and cumbersome customs paperwork. Navigating international trade agreements and policies becomes essential for firms engaged in cross-border e-commerce.

3. Administrative procedure complications: The administrative procedures surrounding e-commerce are plagued by complexity, leading to substantial delays in paperwork and processes. Streamlining administrative processes is crucial for fostering a more conducive environment for e-commerce development in Morocco.



“The quality and reliability of internet connections in Morocco exhibit variations. Sluggish and unreliable internet can lead to customer frustration and disrupt the seamless functioning of e-commerce websites. Addressing these issues is imperative for ensuring a more inclusive and efficient e-commerce landscape, especially in less-connected rural areas.

Access to markets and finance (*)

As per the survey findings, Moroccan businesses grapple with various financial impediments when considering the adoption of e-commerce. Key financial barriers, as elucidated by survey respondents, encompass:

1. **High initial costs:** The substantial upfront investment required to establish e-commerce platforms, integrate electronic payment systems, and ensure robust data security poses a significant challenge. While these investments are indispensable for

fostering a secure and satisfactory customer experience, they present formidable barriers for aspiring entrepreneurs and small businesses. The establishment of an e-commerce platform entails costs related to website development, hosting, payment gateways, and inventory, creating financial obstacles for market entry.

2. **Limited access to finance:** Many Small and Medium Enterprises (SMEs) in Morocco encounter difficulties in accessing the capital necessary to initiate and expand their e-commerce ventures. Traditional financial institutions exhibit reluctance to extend loans or credit to e-commerce endeavours, especially those lacking an extensive track record. This financial constraint impedes the digital transformation of businesses, hindering their ability to leverage e-commerce opportunities.

3. **Logistics and delivery costs:** The inherent costs associated with warehousing, packaging, and last-mile delivery present additional challenges for e-commerce businesses. These expenses can be particularly burdensome when attempting to reach customers in remote areas, exacerbating the financial barriers faced by companies venturing into the digital realm.

Addressing these financial challenges is crucial to fostering a more inclusive and resilient e-commerce landscape in Morocco. By mitigating high initial costs, enhancing access to finance, and optimizing logistics and delivery processes, the business ecosystem can unlock the full potential of e-commerce and drive economic growth in the digital sphere.

Digital skills (++)

Proficiency in technical skills and e-commerce knowledge among company employees in Morocco exhibits significant variability. While well-established companies in urban areas boast well-trained teams and e-commerce experts, numerous small businesses in less developed regions could benefit from enhanced technical skills and a deeper understanding of online commerce. While this diversity does not hinder the development of e-commerce, survey results underscore the need for fortifying the following aspects:

1. **Future training initiatives for employees:** The establishment and maintenance of online stores, database management, and ensuring secure online transactions require technical expertise in e-commerce businesses. To address this imperative, future training initiatives are crucial. Despite advancements in higher

education establishments and training centers, a notable challenge lies in the practical orientation of the training. Given that e-commerce is a highly technical field, there is a pressing need for practical training—an aspect that warrants attention in Morocco and Africa at large. Continuous training and skill development in e-commerce are essential to enhance the competitiveness of businesses in the dynamically evolving online market.

2. **Enhancing digital literacy through programs:** A significant portion of the Moroccan population lacks essential digital literacy skills necessary for navigating and conducting transactions on e-commerce platforms. This gap is particularly noticeable among the elderly, who may encounter challenges using e-commerce websites and harbor reservations about online transactions. Future awareness programs are imperative to fortify the digital skills of citizens, ensuring a more inclusive and informed participation in the digital economy.

Addressing these concerns through targeted training initiatives and awareness programs will contribute to bridging the existing gaps in technical skills and digital literacy, fostering a more robust and inclusive e-commerce landscape in Morocco.

Trust and security (cybersecurity) issues (*)

The apprehension regarding trust and security poses substantial challenges to the global embrace of e-commerce, and Morocco is not exempt from this prevailing trend. Businesses worldwide are increasingly acknowledging the importance of investing in robust IT security measures, conducting cybersecurity audits, and implementing incident management protocols to mitigate the inherent risks associated with e-commerce. Within this framework, consumer trust emerges as a pivotal factor for the success of e-commerce, with the effective management of online security serving as a cornerstone in establishing and sustaining this trust.

1. **Ensuring secure online payments:** The looming threat of cybercriminals utilizing phishing attacks to illicitly obtain personal and financial information remains a pervasive concern. This not only undermines consumer trust in e-commerce platforms but also discourages participation in online transactions. Securing online payments is a challenge not unique to Morocco; it is a shared obstacle faced by numerous countries. It encompasses issues such as safeguarding personal data, preventing counterfeiting, mitigating fraud, and addressing challenges related to product delivery.

2. **Addressing the lack of trust in online transactions:** The overarching challenge of a lack of trust in e-commerce is a universal concern that can deter potential customers from embracing online purchasing. This lack of trust may stem from various factors, necessitating a comprehensive approach to assuage these concerns. Effectively tackling these issues is imperative for the sustained success of e-commerce businesses, fostering an environment where consumers feel secure and confident in their online transactions.

To overcome these challenges, a concerted effort is required to implement stringent security measures, raise awareness about the protective measures in place, and actively address the multifaceted issues contributing to the lack of trust in online transactions. This approach will not only fortify the security landscape but also cultivate an environment conducive to the continued growth and prosperity of e-commerce ventures in Morocco and beyond.

Logistics and transport infrastructures (+)

The landscape of logistics and transport infrastructure displays notable variations across different regions within a country, marked by discernible disparities between rural and urban areas. Generally, logistics in urban areas operate seamlessly, posing no significant barriers to e-commerce. However, the central challenge lies in rural areas, warranting future improvements.

While certain regions boast sufficient logistics and transport infrastructure conducive to e-commerce development, featuring well-established delivery services and robust road or rail connectivity, others grapple with obstacles. Challenges such as inadequate roads, security issues, delivery delays, and elevated costs can hinder the advancement of e-commerce, particularly in the context of exports. Hence, it becomes imperative to conduct a nuanced assessment of the specific logistical scenario within a country to gauge the adequacy of infrastructure to support export activities. Strategic investments in these areas may be indispensable to enhance the competitiveness of businesses in the online and international market.

Payment method obstacles (*)

In Morocco, the progress of e-commerce encounters obstacles rooted in financial and payment method challenges. Key issues include restricted access to banking services for a segment of the population, high transaction fees for businesses, and the limited adoption of credit cards. Additionally, consumer concerns about the security of online payments and the absence of diverse payment options may lead to the exclusion of specific demographic segments. To propel the expansion of e-commerce, strategic investments in payment infrastructure, increased awareness, and regulatory adjustments are imperative.

1. **Payment processing challenges:** The efficacy of e-commerce relies on streamlined online payment processing, but the costs associated with implementing and maintaining secure payment gateways present a financial burden. Transaction fees linked to online payments also impact profit margins, introducing complexity to the financial landscape.

2. **Payment systems:** The availability and efficiency of online payment systems face challenges. Regulatory complexities, interoperability gaps, and concerns about fraud prevention can limit the range of payment options accessible to e-commerce enterprises.

3. **Preference for cash transactions:** A subset of Moroccans demonstrates a preference for cash transactions, constraining the scope of online purchases. Widespread reluctance to engage in online transactions is evident, with a notable portion lacking credit cards, underscoring the importance of diversifying payment methods.

Addressing these challenges requires concerted efforts, including investments in robust payment infrastructure, educational initiatives to enhance awareness, and regulatory adjustments to streamline payment systems. Such measures will not only bolster the resilience of e-commerce but also foster inclusivity, ensuring that a broader spectrum of the population can actively participate in and benefit from the burgeoning online marketplace.

Socio-cultural barriers (*)

The seamless adoption of e-commerce in Morocco encounters various socio-cultural barriers intricately woven into social norms, cultural behaviors, and consumer attitudes. Addressing these nuanced challenges is pivotal for fostering widespread acceptance and usage of digital commerce.

> Key issues include restricted access to banking services for a segment of the population, high transaction fees for businesses, and the limited adoption of credit cards. Additionally, consumer concerns about the security of online payments and the absence of diverse payment options may lead to the exclusion of specific demographic segments. To propel the expansion of e-commerce, strategic investments in payment infrastructure, increased awareness, and regulatory adjustments are imperative.

1. Risk and distrust: The inherent risk associated with online purchases often fosters a sense of distrust among consumers. This apprehension is exacerbated by the absence of prior purchasing experiences and uncertainties surrounding the technology platforms used for transactions. To assuage these concerns, some companies provide alternative payment methods, such as secure transfers or the option of cash on delivery, catering to the consumer's need for a perceived safer transaction environment.

2. Preference for in-person interactions: Moroccan social dynamics are deeply rooted in face-to-face interactions, shaping consumer preferences towards physical stores. The desire to see and touch products, coupled with the inclination for interpersonal exchanges with salespeople, reinforces the predilection for in-person shopping experiences.

3. Attachment to commercial traditions: Traditional markets and souks hold a profound historical significance in Moroccan commerce. This cultural legacy influences a substantial portion of the population, fostering a preference for traditional purchasing methods over the relatively novel landscape of e-commerce. Acknowledging and respecting these deep-seated traditions is vital in navigating the transition towards digital commerce.

3.4. Tunisia

According to the latest UNCTAD e-Trade readiness assessment (2022), Tunisia is a pioneer and leader in the region for the adoption of legislation dedicated to e-commerce. It is also well above the global average in terms of connectivity, rates of penetration, the use of the Internet and robustness of mobile network. Online marketplaces like Jumia and InstaShop have gained popularity, offering a wide range of products, from electronics to groceries. This has been reflected in the results of this survey as the majority of the interviewees do not consider the connectivity and ICT services as a barrier in Tunisia.

However, government policies and administrative procedures, limited access to finance, trust and security issues, payment method obstacles and socio-cultural barriers are considered as the most dominant barriers to the development of e-commerce in Tunisia.

Presentation of Findings in relation to main barriers towards e-commerce adoption :

Technology, infrastructure and connectivity (++)

Findings from both the focus group and SME interviews indicate that the Tunisian infrastructure provides a conducive environment for the growth of e-commerce. Technology, infrastructure, and connectivity do not pose obstacles to the development of e-commerce. While there may be some regional disparities in connection speed, this is generally not considered a hindrance to the advancement of e-commerce in Tunisia.

Government policies and administrative procedures (*)

Tunisia's public policies seem insufficient to foster the growth of e-commerce. Despite continuous efforts to boost its development, persistent challenges include a lack of clear vision and consistency in laws and regulations governing e-commerce. These challenges are exacerbated by a lack of coordination between ministries. While there's a predominant focus on promoting e-commerce within the domestic market (such as the adoption of e-dinar for the local digital payments, implementation

Technology, infrastructure and connectivity ++ No big obstacle, favourable infrastructure for development of e-commerce	**Government policies and administrative procedures** * - Lack of incentive-based regulation (*) - The restrictive exchange rate law (*)	**Access to market and finance** * - Upfront investments for website and app creation (**) - Advertising and marketing costs (*) - Management and logistics fees (*) - Currency-to-dinar conversion (*)	**Digitalskills** ++ No barrier, but needs future improvements - Training and future needs
Trust and security (cybersecurity) issues * - Consumer confidence (*) - Limited risks (*) - Security measures adopted (*) - Need for outreach and education (*)	**Logistics and transport infrastructures** - *No impact but needs future improvements* - Last mile delivery - Development of logistics depending on the private sector - Product restrictions and uncertain customs	**Payment method obstacles** * - Reluctance to use cards (**) - Online payment and monopoly (*) - Shortcomings in banking (*) - POS Infrastructure Issues (*) - -International payment. - restrictions (*)	**Socio-cultural barriers** * - Shopping habits and lack of e-commerce culture (*) - Distrust of online payments and preference for cash on - delivery (*)

Table 4: The sub categorical barriers of e-commerce in Tunisia

Note: Big barrier (**); barrier (*); No impact (-); Not a barrier (+); Not a barrier at all (++)

of laws establishing a set of rights and responsibilities for both consumers and e-commerce businesses, etc.), a clear vision for international expansion is lacking. Criticisms mainly revolve around deficiencies in the legal framework governing e-commerce in Tunisia, with existing laws deemed outdated and inadequate to address the rapidly evolving dynamics of the sector. Criticisms concern shortcomings in the legal framework governing e-commerce in Tunisia, with existing laws being considered outdated and inadequate to capture the fast-changing dynamics of e-commerce.

E-commerce enterprises are subjected to the same tax and legal obligations as traditional businesses, disregarding the unique characteristics of e-commerce. The absence of a regulatory and supervisory authority for the express parcel delivery sector has a detrimental impact on service quality, creating a disincentive for new entrants to join the market.

The stringent exchange rate regulations pose a significant hurdle for SMEs engaged in e-commerce, complicating the management of international transactions. Additionally, numerous startups in the mobile payment sector, including Flouci, Konnect, and Paymee, operate within a regulatory grey area, unable to conduct international transactions using Tunisian credit cards or make payments to overseas partners due to existing regulations. This regulatory constraint exposes these companies to fierce competition in both continental and global markets. Challenges in international e-commerce extend beyond payment issues and encompass compliance with global business practices, as emphasized by interviewees who noted concerns regarding customer withdrawal rights and other related aspects.

Access to finance (*)

As revealed in the interviews, gaining access to finance emerges as a significant obstacle for the establishment and growth of technology start-ups, encompassing e-commerce operators. Restrictive financing conditions, marked by high bank financing costs and stringent collateral requirements, impede the sector's expansion.

There are notable challenges linked to the necessity for upfront investments in website and app development. Transitioning to e-commerce demands substantial initial investments, particularly for small businesses requiring working capital to navigate the launch and brand awareness phase. Businesses allocate considerable sums to the development and upkeep of these platforms, a task particularly formidable for small enterprises. According to one interviewee, "you need a

budget between 9,000 and 13,000 USD, with a minimum of 2,500 USD just for designing a basic website." Another interviewee highlighted, "It takes about 4 to 5 months of work to design the website. Then you need a pre-launch period to identify market niches, involving 6 to 8 months of hard work."

Advertising and marketing expenses constitute another financial challenge for many businesses. Actively promoting products or services online to reach a broader audience necessitates expenditures on advertising, sponsorship, and content publication. The annual cap of the technology card at 10,000 TND can restrict online investments, particularly considering the high costs associated with sponsorship and stands for Search Engine Optimization (SEO) to improve the company visibility and ranking in search engine results pages (SERPs). One entrepreneur emphasized that "to be visible within the limited amounts regulated, you have to spend €50 or $50 for only 2 days of online advertising with 'amateur-level targeting.'"

Management and logistics fees are additional considerations for businesses engaged in e-commerce. Beyond website construction costs, daily operations entail expenses related to handling product returns, logistics, and delivery. These fees can accumulate swiftly, as one entrepreneur elucidated: "There are numerous hidden costs to factor in: investing in communication, ERP, CRM, quality packaging, and logistics."

Digital skills (++)

The digital skills in Tunisia can be considered moderately average, providing a favourable environment for the development of e-commerce. While our results indicate that this is not a barrier, interviewed SMEs and focus groups admitted that there is still room for improvement in this aspect, in particular in the remote and rural areas. Targeted training on monetary transactions, blockchain technologies, and other e-commerce-related concepts and soft skills will be beneficial in addressing the evolving needs of the market.

Trust and security (cybersecurity) issues (*)

Trust and cybersecurity emerge as recurring concerns within the e-commerce landscape in Tunisia, resonating among both consumers and businesses. Several themes consistently surface in the course of interviews:

- Consumer Confidence as a Pivotal Factor: It is crucial to underscore that consumer confidence plays a pivotal role in the advancement of e-commerce in Tunisia. Consumers lean towards making online payments if they have trust in the platform and its providers. The security of online transactions stands out as a critical issue, with the safeguarding of consumers' personal and financial data being a major apprehension contributing to distrust in online payments.
- Limited Risks in Tunisia: Additionally, it is highlighted that cybersecurity risks are perceived with less intensity compared to consumer confidence concerns. The growth of online transactions, while on the rise, remains modest given the size of the Tunisian market and the scale of these transactions. Risks are deemed lower when the financial stakes are moderate.
- Security Measures Implemented: The narrative shifts to the positive evolution of IT security in Tunisia. Companies have developed security expertise and invested in new technologies to fortify their protection. Proactive measures have been taken by certain e-commerce players, including the acquisition of security certificates to safeguard website data and ensure site authentication. Furthermore, advanced security measures such as payment and login monitoring, use of dedicated IP addresses, secure servers, and annual updates in compliance with security standards are being implemented.
- Need for Outreach and Education: A part of the solution lies in outreach and education, with the aim of providing consumers clear information about safety practices. Strengthening trust in e-commerce can be achieved through enhanced understanding of data protection procedures and safeguards for online transactions.

Logistics and transport infrastructures (-)

Opinions regarding the adequacy of logistics and transport infrastructure for the sector varied during the interviews, yielding diverse perspectives. Some assert that Tunisia boasts relatively developed logistics infrastructure, attributed to the presence of the post office and private delivery services. While acknowledging improvements, industry stakeholders unanimously agree that more efforts are essential to better structure the field, ensuring efficient logistics with improved service quality. This becomes particularly crucial for bolstering consumer confidence, especially in the context of exports. A respondent elucidated, "Logistics and transport infrastructure are available, but the quality of service is poor," pinpointing areas for future enhancement.

- Last-Mile Delivery: Concerns were raised about the current transport and delivery infrastructure's adequacy, citing a scarcity of last-mile delivery drivers. Furthermore, delivery processes are predominantly manual, lacking significant incorporation of technological solutions to optimize logistics, potentially impeding the consumer experience. The absence of technological advancements for efficient logistics services emerges as a notable concern.
- Dependency on Private Sector for Logistics Development: Another observation underscores that the growth of logistics infrastructure primarily hinges on private sector initiatives, as the state appears to be making insufficient efforts to foster an enabling environment for e-commerce. It is emphasized that creating specifications to regulate this activity is vital for the development of e-commerce logistics.
- Product Restrictions and Customs Uncertainty: A major challenge highlighted pertains to the logistical hindrances faced during exports, encompassing product restrictions and uncertain customs processing times. A respondent emphasized, "We encounter significant issues with export logistics, resulting in lengthy delivery times, leading to market and customer losses." Such logistical and customs challenges have the potential to dissuade companies from further venturing into international e-commerce.

Challenges in Online Payment Methods for E-commerce (*)

The e-commerce sector in Tunisia encounters a significant obstacle in the realm of online payments, marked by a fragmented landscape of payment methods. Despite the availability of various options, the economic model and purchasing power of Tunisians present barriers to seamless adaptation.

1. Reluctance to use credit cards:
    - Online payment hasn't fully integrated into Tunisian habits, with low banking access and issues related to banking fees hindering its adoption.
    - The prevalent "cash on delivery" method persists, impeding the dematerialization of payments.
    - Resistance to using credit cards online suggests a challenge rooted in consumer mindset and preferences rather than technological capabilities.
2. Online payment monopoly:
    - Currently, a single provider (SMT) offers online payment services, resulting in inadequate quality of service.
    - Lack of competition stifles innovation and the quality of online payment services.
    - The regulatory framework needs redesigning to foster healthy competition and enhance payment services.
3. Shortcoming in Banking services:
    - Quality issues in banking services pose a major challenge, with slow and complicated processes for obtaining technology cards.
    - Delays and lack of understanding among bank staff about electronic payment specifics impede transaction efficiency.
    - Low limits on bank cards restrict international purchases, and high commissions for online payments are considered burdensome.
    - Mobile payment limitations, with high commissions for merchants, create challenges for smaller businesses.
4. Point of Sales (POS) infrastructure issues:
    - Availability of functional POS terminals can be problematic, emphasizing the need for banking services tailored to e-commerce needs.

“A major challenge highlighted pertains to the logistical hindrances faced during exports, encompassing product restrictions and uncertain customs processing times. A respondent emphasized, “We encounter significant issues with export logistics, resulting in lengthy delivery times, leading to market and customer losses.” Such logistical and customs challenges have the potential to dissuade companies from further venturing into international e-commerce.

- Electronic Payment Terminals (EPTs) are essential, and their availability is crucial for building trust in e-commerce transactions.

5. Instability of alternative payment solutions:
    - Local startups attempting to address payment challenges sometimes operate outside the legal framework, leading to potential disruptions by authorities.

6. International payment restrictions:
    - Online payment adoption for international trade is complex, with challenges related to international payment platforms.
    - Foreign currency-to-dinar conversion poses challenges, as exchange rate fluctuations and restrictions on currency entry and exit complicate international transactions.

These multifaceted issues underscore the need for comprehensive solutions, including regulatory reforms, increased competition, and enhanced banking services to propel the growth of e-commerce in Tunisia.

Socio-Cultural Barriers to E-commerce (*)

Despite the substantial growth in e-commerce adoption in Tunisia, it appears from the interviews that several prominent socio-cultural barriers impede its complete expansion. These barriers manifest across various categories:

1. Shopping habits and limited e-commerce culture:
    - E-commerce has not fully integrated into Tunisian culture, with many businesses lacking an online presence.
    - The preference for direct product contact is ingrained in Tunisian shopping habits, where individuals seek to physically interact with items before making a purchase.
    - Educating consumers about the advantages of e-commerce is crucial to bridging this cultural gap.

2. Distrust of online payments and preference for cash delivery:
    - A significant portion of Tunisian consumers harbours mistrust toward online payments.
    - Negative experiences, such as failed transactions or concerns about product quality, have contributed to this distrust.
    - The prevalence of cash on delivery as a preferred payment method highlights the need for strategies to instil confidence in online transactions and address perceived risks of scams and fraud.

Addressing these socio-cultural barriers requires comprehensive initiatives, including targeted education campaigns, efforts to enhance the online presence of businesses, and the implementation of secure and transparent payment systems. By understanding and proactively addressing these challenges, Tunisia can further propel the growth and acceptance of e-commerce within its cultural context.

3.5. Uganda

While still in its early stages, Uganda's e-commerce landscape holds significant growth potential, buoyed by a mobile penetration rate of 63.8%, boasting 30.55 million active mobile connections as of the beginning of 2023 (ITA, 2023). The country also sees 11.77 million internet users (24.6% penetration rate) and 2.05 million social media users, predominantly among the youth aged 18-30, who constitute the majority of online sellers and buyers (Dataportal, 2023e; ITA, 2022e). This growth is underpinned by the widespread adoption of mobile money, evidenced by approximately 32 million accounts compared to 19 million bank accounts, with regulatory oversight by the Bank of Uganda (BOU) following the National Payment Act of 2020 (ITA, 2022e). Noteworthy platforms such as Jumia, SafeBoda, and Takealot have experienced a surge in popularity, becoming household names.

Similar to the aforementioned countries, Uganda benefits from a favorable infrastructure, connectivity, and a skilled workforce, although improvements are still needed. Generally, these factors do not pose significant barriers to the development of e-commerce. However, predominant barriers identified for e-commerce growth in Uganda include trust and security issues, payment methods, and socio-cultural factors. Additionally, challenges persist in the form of government policies and administrative procedures, limited access to finance, and hurdles in logistics and transportation, all contributing to barriers for the advancement of e-commerce in Uganda.

Presentation of Findings in relation to main barriers towards e-commerce adoption

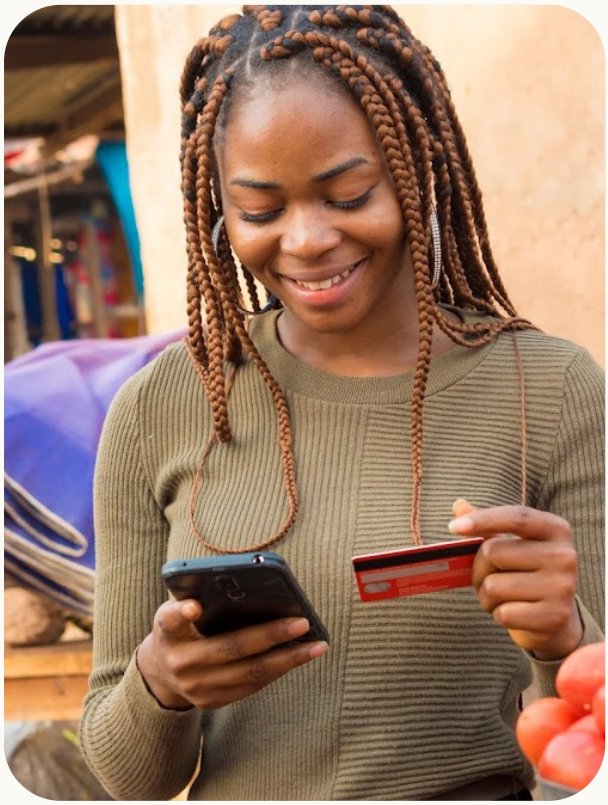
Technology, infrastructure, and connectivity (+)

In terms of the status and infrastructure for e-commerce in Uganda, the industry is still in its early stages, but it has gained significant prominence, particularly in the post-COVID-19 pandemic era. The lockdown periods imposed by COVID-19 compelled many Ugandans to turn to online selling and shopping. The subsequent surge in

Technology, infrastructure and connectivity	Government policies and administrative procedures	Access to market and finance	Digital skills
+	*	*	+
No barrier, but needs future improvements - Future improvement in Internet coverage - Increase the internet speed-Reliability of technology providers	- The abuse of the regulation for the data protection issue(*) - The delay of implementation of the projects (**)	- High loan interest rate (*) - High cost of initial set up (**)	No barrier, but needs future improvements - Future trainings - Increase the awareness for e-commerce - New programmes to reduce the mismatch of school to work transition
Trust and security (cybersecurity) issues	**Logistics and transport infrastructures**	**Payment method obstacles**	**Socio-cultural barriers**
*	-	*	*
- Payment Fraud (*) - Privacy Concerns (**) - Counterfeit Products (**)	- The poor road network (*) - Last-Mile Delivery (*) - Lack of Effective logistics (*)	- Cash Dominance (*) - Lack of Digital Payment Infrastructure (**) - Limited Payment Options (*)	- Bargaining physically for cheaper price (**) - Mindset (**) - Religious factors (**) - Language (*)

Table 5: The sub categorical barriers of e-commerce in Uganda

Note: Big barrier (**); barrier (*); No impact (-); Not a barrier (+); Not a barrier at all (++)



> Stakeholders have acknowledged the ongoing efforts to achieve nationwide internet coverage, a crucial prerequisite for the growth of e-commerce. The increased accessibility of the internet and the proliferation of smartphones across the country have extended the reach of e-commerce beyond urban and peri-urban areas.

demand necessitated the development and enhancement of innovative e-commerce platforms during and after the pandemic, becoming an inevitable evolution for Uganda. While existing e-commerce platforms like Jumia existed before the pandemic, their acceptance and penetration were limited in scope.

The e-commerce space in Uganda is predominantly led by the youth, especially recent graduates equipped with substantial ICT skills gained during their training. While this demographic dominance is not viewed as a barrier, there are still areas for future improvement:

1. ***Future improvement in internet Coverage*:** Stakeholders have acknowledged the ongoing efforts to achieve nationwide internet coverage, a crucial prerequisite for the growth of e-commerce. The increased accessibility of the internet and the proliferation of smartphones across the country have extended the reach of e-commerce beyond urban and peri-urban areas. Telecommunication companies have made significant strides in strengthening internet bandwidth, even upgrading to 5G. However, challenges persist, particularly with weak or no internet coverage in rural areas.

2. ***Increase the speed of internet*:** Despite efforts to implement a 5G network in certain regions, connectivity issues persist in some areas, impacting customer user experience, especially with payment options. The speed of the internet remains low in several parts of Uganda, necessitating future improvements to ensure a seamless and efficient online experience.

3. ***Reliability of technology providers*:** There is a lack of trust in technology providers, as some have developed solutions that failed, leading to financial losses for potential clients. Enhancing the reliability of technology providers is crucial for improving the overall technological landscape in the country.

Addressing these areas for improvement will contribute to the continued growth and success of e-commerce in Uganda, ensuring that it remains a viable and accessible option for a broader population.

Government policies and administrative procedures (*)

Stakeholders have observed that Uganda possesses existing government policies and regulations addressing e-commerce. However, these regulations represent a formidable barrier, compounded by several other challenges impacting the development of e-commerce in the country, outlined as follows:

1. ***Abuse of data protection regulations*:** While Uganda has established data protection policies, these regulations are prone to abuse, particularly by e-commerce platform owners and operators. Mobile money service providers, for example, have been implicated in the inappropriate use of clients' data, leading to security breaches and scams.

2. ***Delay in project implementation***: Despite the government's enthusiastic support for ICT services coverage and accessibility throughout the country, the delayed implementation of projects remains a persistent challenge. Although policies and regulations are in place, their implementation and adherence are limited and sparse. This lack of familiarity among several Ugandans with the governing policies and regulations in the e-commerce sector renders them vulnerable and disinterested in engaging with e-commerce platforms.

Addressing these challenges requires a concerted effort to enforce and educate on existing regulations, expedite project implementation, and ensure that the policy framework adapts to the evolving landscape of technology, safeguarding the interests of businesses and consumers engaged in e-commerce activities.

Access to market and finance (*)

Ugandan businesses encounter significant challenges related to access to markets and financial barriers, significantly influencing the development of their online ventures. The specific obstacles are detailed below:

1. ***High loan interest rate***: Addressing financial, technical, and knowledge barriers for e-commerce in Uganda, stakeholders underscored the exorbitant fees charged by e-commerce platform owners and the steep borrowing interest rates imposed by banks. These financial constraints stand out as major hurdles for businesses looking to establish a robust online presence.

2. ***High cost of initial set-up***: It was further highlighted that the upfront investment required for building and maintaining a secure and reliable e-commerce platform, free from cyber threats, is notably high. This proves to be a prohibitive factor, especially for small and medium enterprises (SMEs). Additionally, there is an emphasis on the elevated cost of internet services in Uganda. Given that e-commerce heavily relies on internet connectivity, the high associated costs deter business owners from venturing into e-commerce.

Addressing these challenges necessitates strategic interventions to alleviate financial burdens, such as exploring avenues for lower interest rates and providing support for initial setup costs. Additionally, initiatives to reduce the overall cost of internet services can contribute to fostering a more conducive environment for Ugandan businesses to thrive in the online marketplace.

Digital skills (+)

The proficiency in technical skills and e-commerce knowledge among employees in Uganda varies significantly across industries, with more digitally mature sectors such as information technology, telecommunications, and financial services boasting a higher concentration of skilled individuals. Employees in these industries are well-versed in e-commerce practices, digital marketing, and data analytics due to their forefront position in digital transformation. On the other hand, traditional industries like agriculture, manufacturing, and retail exhibit lower levels of technical skills and e-commerce knowledge, with businesses in these sectors just beginning to explore the advantages of e-commerce.

Although this discrepancy in technical skills is not identified as a barrier, there are areas that warrant future improvement:

1. ***Future trainings***: Technical barriers arise due to the complexity of e-commerce platforms, especially for individuals with lower literacy levels. The platforms predominantly being in English poses a limitation for adoption by the less-educated population. Additionally, there's scepticism among the elderly, who perceive e-commerce as exclusively for the youth. Future training initiatives should aim to bridge these gaps and enhance accessibility.

2. ***Increase awareness for e-commerce***: Knowledge about e-commerce is limited across the country, particularly in rural areas where over 70% of Ugandans reside. Poor internet and electricity coverage, coupled with a lack of awareness campaigns, contribute to these limitations. Addressing this requires increased efforts to spread awareness and ensure that rural areas are adequately served by e-commerce platforms.

“Addressing financial, technical, and knowledge barriers for e-commerce in Uganda, stakeholders underscored the exorbitant fees charged by e-commerce platform owners and the steep borrowing interest rates imposed by banks.

3. ***New programs for school-to-work transition*:** A mismatch exists between the skills of recent graduates and the market demands, particularly in e-commerce. There is a lack of practical programs and training specific to e-commerce. Initiatives like Refractory operating out of Clarke International Universities aim to narrow this skills gap and better align education with the requirements of the job market.

By addressing these aspects, Uganda can foster a more inclusive and skilled workforce, promoting wider adoption of e-commerce across diverse sectors and demographics.

Trust and security (cybersecurity) issues (**)

Trust and security, especially in the realm of cybersecurity, play a pivotal role in shaping the confidence of businesses and consumers in the online marketplace. The following key trust and security issues are noteworthy:

1. ***Payment fraud*:** Persistent concerns regarding fraudulent transactions and payment scams are prevalent in Uganda. The absence of robust payment security measures leaves consumers vulnerable to unauthorized transactions, eroding trust in online transactions. This not only harms consumers but also undermines the overall confidence in the reliability of online payment systems.

2. ***Privacy concerns:*** The growing apprehension among customers about the privacy of their personal data during online shopping has tangible effects on e-commerce. Negative experiences in this regard prompt consumers to avoid e-commerce platforms, opting instead to physically visit brick-and-mortar shops. The need for enhanced privacy measures becomes imperative to instill confidence and foster the continued development of e-commerce businesses.

3. ***Counterfeit products*:** Some e-commerce platforms inadvertently facilitate the sale of counterfeit or substandard products, posing a significant threat to consumer trust in online shopping. The prevalence of counterfeit goods not only harms consumers directly but also negatively impact legitimate businesses operating in the online sphere. Addressing this issue is crucial for maintaining the integrity of online marketplaces and sustaining consumer trust.

By addressing these trust and security issues head-on, the e-commerce landscape in Uganda can cultivate a more secure and trustworthy environment, fostering sustained growth and encouraging both businesses and consumers to actively participate in the online marketplace.

Logistics and transport infrastructures (*)

Efficient logistics and last-mile delivery networks are pivotal elements for the success of e-commerce in Uganda. However, several barriers have been identified that impact the growth of e-commerce, particularly in the realm of transport infrastructure.

1. ***Poor road network:*** Stakeholders have emphasized the current inadequacies in the country's road network. The poor state of roads, particularly in rural areas and during rainy seasons, poses challenges to accessibility. Urban and peri-urban roads are also poorly maintained. Despite these challenges, there is optimism about the future of e-commerce in Uganda, provided these hindrances are addressed.

2. ***Last-Mile delivery:*** Significant logistics challenges arise in the "last mile" of the delivery process, particularly in rural areas. Limited infrastructure and address systems contribute to difficulties in ensuring timely and efficient deliveries. Addressing these challenges is crucial for ensuring a seamless last-mile delivery experience for customers.

3. ***Lack of effective logistics:*** Efficient logistics and transportation systems are imperative for exporting goods from Uganda. Delays or inefficiencies in these systems not only impact the competitiveness of Ugandan products in national and international markets but also hinder the overall development of e-commerce in the country. Addressing the lack of effective logistics is vital for fostering the growth of e-commerce in Uganda.

By addressing these transport infrastructure challenges, Uganda can create an environment conducive to the success and expansion of e-commerce, ensuring that goods can be transported efficiently and reliably to both local and international markets.

Payment method obstacles (*)

In Uganda, the development of e-commerce faces substantial challenges stemming from financial and payment barriers, impacting both businesses and consumers. These challenges manifest in various ways, hindering the growth and widespread adoption of online transactions.

1. ***Cash dominance*:** The prevalent use of cash as the primary mode of payment in Uganda poses a considerable obstacle to the expansion of e-commerce. The strong preference for physical currency remains a significant barrier, particularly for businesses relying on digital payment methods.

2. ***Lack of digital payment infrastructure*:** Although mobile money services are well-established in Uganda, not all businesses and consumers enjoy easy access to digital payment solutions. The imperative expansion of these services to underserved areas is vital for fostering broader adoption of e-commerce across diverse regions.

3. ***Limited payment options*:** E-commerce platforms in Uganda often offer a restricted range of payment options to customers. Diversifying payment methods, encompassing mobile money, online banking, and card payments, is pivotal to accommodating the varied preferences of customers and enhancing the overall accessibility of e-commerce.

Addressing these financial and payment barriers is essential for creating an environment conducive to the growth of e-commerce in Uganda, fostering a more inclusive and accessible digital marketplace for businesses and consumers alike.

"Stakeholders have emphasized the current inadequacies in the country's road network. The poor state of roads, particularly in rural areas and during rainy seasons, poses challenges to accessibility. Urban and peri-urban roads are also poorly maintained. Despite these challenges, there is optimism about the future of e-commerce in Uganda, provided these hindrances are addressed.

Socio-cultural barriers (**)

The adoption of e-commerce in Uganda encounters various socio-cultural barriers deeply ingrained in societal norms and behaviors. Businesses and investors navigating these challenges require a nuanced approach to foster widespread acceptance and growth. The prominent socio-cultural barriers include:

1. ***Bargaining for price reduction*:** Many Ugandans are accustomed to bargaining when making purchases in traditional markets or shops. However, e-commerce lacks the flexibility for customers to negotiate for a lower price. This cultural practice poses a challenge similar to what multinational supermarkets have faced in Uganda, contributing to the closure of some of these establishments.

2. ***Mindset challenges*:** The prevailing mindset among Ugandans poses a significant barrier to e-commerce adoption. People often prefer traditional methods of inspecting and physically touching products before making a purchase, as opposed to online orders where payment is required in advance. Concerns about delayed deliveries and discrepancies between ordered and delivered items, especially in terms of quality, contribute to this mindset challenge.

3. ***Religious factors*:** Stakeholders highlighted religious factors as additional socio-cultural barriers to e-commerce. Some religious leaders discourage the adoption of new technologies, associating them with negative influences. Consequently, certain individuals, particularly in rural areas, resist technology and related services due to concerns about conflicting with religious doctrines.

4. ***Language barriers*:** To address the diverse linguistic landscape of Uganda, stakeholders recommended that e-commerce platforms consider incorporating local languages in addition to English. Drawing parallels with bank ATMs that offer services in widely used local languages, expanding language options in e-commerce platforms can enhance accessibility. Currently, technologies like Paywave and Paypal are limited in adoption, primarily present in fuel stations and restaurants.

By understanding and effectively addressing these socio-cultural barriers, businesses and investors can promote the acceptance and growth of e-commerce in Uganda, creating a more inclusive digital marketplace.

04

MAIN FINDINGS AND CONCLUSIONS

This report outlines the methodology and primary findings derived from a comprehensive survey aimed at identifying the key barriers to e-commerce growth in Africa, focusing on Côte d'Ivoire, Egypt, Morocco, Tunisia, and Uganda. The research integrates qualitative insights from expert focus groups and SMEs interviews across the selected countries.

The identified barriers are categorized into eight distinct domains: (i)Technology, infrastructure, and connectivity; (ii) government policies and administrative procedures; (iii) access to markets and finance; (iv) digital skills; (v) trust and cybersecurity issues; (vi) logistics and transport infrastructures; (vii) payment method obstacles; (viii) and socio-cultural barriers. Each category delineates specific sub-barriers and areas requiring improvement. Table 6 summarizes the primary barriers discerned from interviews, focus groups, and questionnaires.

The survey findings reveal consistent barriers across the 5 countries. Trust and cybersecurity concerns, along with socio-cultural barriers stand out as the primary challenges. These are followed by issues such as the absence of supportive trade policies and regulations, restricted access to funding, and limitations on payment methods. While infrastructure and connectivity challenges exist, their impact on e-commerce development appears relatively minor. Overall, the technical skills necessary for fostering e-commerce growth are generally favourable across all countries, except in remote areas where digital and soft capacities for e-commerce remain limited. Cash payments play a significant role in facilitating informal trade. Without access to banking services, cash remains the primary means of conducting transactions in the informal economy.

Barriers (List)/Country	UGANDA	IVORY COAST	EGYPT	MOROCCO	TUNISIA
Technology, infrastructure and connectivity	+	+	+	+	++
Government policies and administrative procedures	*	**	*	*	*
Access to market and finance	*	*	*	*	*
Digital Skills	+	+	+	++	++
Trust and security (cybersecurity) issues	**	**	*	*	*
Logistics and transport infrastructures	*	*	+	+	-
Payment method obstacles	*	*	*	*	*
Socio-cultural barriers	**	**	*	*	*

Table 6: The categories of main barriers on African countries

Note: Big barrier (**); barrier (*); No impact (-); Not a barrier (+); Not a barrier at all (++)

05

POLICY RECOMMENDATION

The enhancement of the e-commerce ecosystem in Africa has been a subject of exploration through interviews with stakeholders in select countries and the insights gathered from questionnaires. Addressing the numerous challenges requires pivotal shifts in public policies and business practices.

Our approach begins with the identification of country-specific recommendations, followed by the compilation of a list of ten overarching recommendations that hold relevance across most African nations. To structure this, we will utilize the existing classifications of primary barriers as a framework.

5.1. Recommendations for Tunisia

(i) Government policies and administrative procedures

Government commitment and inter-ministerial collaboration are imperative for orchestrating effective efforts to promote e-commerce. High-level dedication is required to synchronize initiatives, while a thorough examination of banking regulations and electronic payment transactions is essential to streamline e-commerce operations. Coordinated efforts between ministries and businesses play a crucial role in optimizing logistics, enhancing payment methods, and fostering a comprehensive e-commerce ecosystem.

In Tunisia, a pivotal step towards modernization involves the widespread adoption of online services in public sectors following the digitization of administrative processes. This approach not only enhances the efficiency of public services and diminishes environmental impact by reducing travel but also serves as a technological benchmark, instilling confidence in the use of online services. Insights from the focus group underscored the importance of exploring opportunities presented by artificial intelligence, blockchain, and other emerging technologies to propel Tunisia's e-commerce onto global markets.

To further fortify the e-commerce sector, the establishment of new regulatory frameworks is essential. Numerous stakeholders stressed the need for regulatory reforms in Tunisia to bolster e-commerce growth, promote innovation, and facilitate international market integration. Suggestions include the creation of a specific legal framework tailored to e-commerce companies and the implementation of tax incentives to foster their expansion. Additionally, a thorough review of regulations governing fund transfers and international payments is crucial to eliminate impediments to growth.

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(ii) Access to market and finance

Securing financial backing for e-entrepreneurs poses a significant challenge, particularly for startups in the e-commerce sector seeking to broaden their operations. Within Tunisia, e-entrepreneurs are advocating for supportive measures, specifically calling for tailored credit lines that align with the unique requirements of online commerce. They assert that both governmental bodies and financial institutions should spearhead programs aimed at easing the digital transition for businesses in this sector.

(iii) Trust and security (cybersecurity)

Enhancing consumer trust hinges on the improvement of after-sales services, particularly through the implementation of product replacement measures in case of non-compliance. To instill confidence in the e-commerce sector, interviewees propose the establishment of industry standards through state certification or an official label. Such measures would ensure the security and reliability of e-commerce sites.
Facilitating collaboration among key stakeholders is crucial to harness the potential of digital entrepreneurship in Tunisia. Establishing an official registry for e-commerce sites becomes instrumental in building consumer trust. To maximize the benefits of e-commerce, there is a call for concerted efforts, including the creation of a valuable networking platform. This platform would serve as a hub for knowledge exchange on e-commerce in Tunisia, fostering strategic partnerships aimed at overcoming obstacles to the sector's growth in the country.

(iv) Logistics and transport infrastructures

Enhancing the caliber of delivery services, especially through the establishment of relay points to minimize transportation expenses and shorten delivery timelines, is imperative. The oversight of delivery companies holds paramount importance in guaranteeing customer satisfaction and streamlining the e-commerce experience. However, the implementation of relay points necessitates a shift in legislation or the adoption of a new regulatory framework to effectively integrate them into the delivery infrastructure.

(v) Payment methods

Streamlining and expanding digital payment solutions is crucial. Appropriate financial reforms are necessary to facilitate digital payments and diversify online payment methods, catering to the diverse needs of users. To enhance e-commerce transactions, banks should consider reducing fees on the merchant side. Resolving issues related to commissions, card limits, and bolstering the e-commerce infrastructure, possibly through specific training for counter agents, is equally vital.

> Elevating awareness, providing training, and enhancing communication efforts are pivotal elements in fortifying the e-commerce culture. Educating consumers and fostering trust among stakeholders plays a fundamental role in promoting the widespread adoption of e-commerce.

A comprehensive review of banking regulations and electronic payment transactions is imperative to facilitate seamless e-commerce operations, trim costs, and boost user confidence. Furthermore, revisiting the foreign exchange law is recommended to streamline international transactions. An interviewee emphasized the need for regulatory changes at the BCT (Central Bank of Tunisia) level, given its influence over pricing and dominance in e-commerce payment operations.

(vi) Socio-cultural factors

Elevating awareness, providing training, and enhancing communication efforts are pivotal elements in fortifying the e-commerce culture. Educating consumers and fostering trust among stakeholders plays a fundamental role in promoting the widespread adoption of e-commerce. It is crucial to instil awareness among businesses and financial institutions, urging them to prioritize digital entrepreneurship. Implementing communication campaigns and training programs is strongly recommended to establish trust and cultivate an e-commerce-oriented mindset.

An insightful suggestion from an entrepreneur highlights the importance of an e-commerce guide to assist promoters and safeguard consumers. Emphasizing the significance of vocational training is crucial to bridge the skills gap. Training programs covering monetary transactions, blockchain technology, and other e-commerce concepts are essential to meet the evolving demands of the market.

5.2. Recommendations for Morocco

(i) Government policies and administrative procedures

E-commerce Regulatory Framework in Morocco: Currently, there is a notable absence of regulations governing e-commerce activities in Morocco. The establishment of new regulations is essential to democratize access to e-commerce, ensuring inclusivity for everyone. This includes providing access to information, additional resources, installation platforms, and accommodating users who may be illiterate or face other accessibility challenges. Additionally, the government should take steps to regulate prices and address issues related to the informal economy in Morocco.

Reforming Fiscal Policies to Encourage E-commerce: Implementing incentive fiscal policies is crucial to fostering the growth of e-commerce in Morocco. Lowering corporate tax rates for e-commerce businesses can serve as a catalyst for increased investment and expansion. Furthermore, exempting specific e-commerce transactions from value-added tax (VAT) or goods and services tax can make online purchases more appealing to consumers.

Streamlining Cross-Border E-commerce Procedures: Simplifying customs procedures for cross-border e-commerce transactions is vital for expediting and enhancing trade efficiency. The government should actively promote the use of electronic documentation, such as digital invoices and shipping manifests, to streamline processes. The implementation of standardized digital formats would further simplify data exchange between customs authorities and businesses.

(ii) Access to market and finance

Enhancing Financial Accessibility for E-commerce: To propel the growth of e-commerce, Morocco should explore avenues such as subsidies, new funding initiatives, and low-interest loans facilitated by banks. The country can

promote innovation and entrepreneurship by extending financial support and subsidies to startups within the e-commerce sector. Additionally, offering low-interest loans and other financial incentives becomes crucial for e-commerce businesses, particularly those dedicated to sustainable practices or targeting underserved markets. These measures can significantly contribute to fostering a dynamic and inclusive e-commerce ecosystem.

(iii) Trust and security (cybersecurity)

Elevating E-Security Measures: To promote increased utilization of e-commerce platforms, Morocco should actively endorse initiatives focused on bolstering consumer confidence through enhanced online security and streamlined payment procedures. Prioritizing the security and safeguarding of consumer data is essential to foster greater trust and encourage the widespread adoption of e-commerce. The overarching objective should be to optimize the online shopping experience, making it as compelling as possible for customers.

(iv) Logistics and transport infrastructures

Enhancing Last-Mile Delivery Solutions: Morocco can significantly improve its distribution system by focusing on last-mile delivery optimizations that directly benefit customers. Exploring options such as local warehouses, lockers, and leveraging third-party delivery services can effectively reduce delivery distances and enhance delivery speed. Tracking this process and consistently seeking feedback from both customers and employees is crucial. Implementing improvements based on these insights becomes paramount to adapting to evolving market conditions and meeting customer expectations, ensuring an effective last-mile delivery solution.

(v) Payment methods

Streamlining E-Payment Processes: Facilitating the integration of online payment methods for companies operating in order-taking sites necessitates the implementation of robust government and banking security regulations. These regulations should be designed to be more inclusive, particularly benefiting small and medium-sized enterprises (SMEs). To cater to diverse consumer preferences, a range of payment methods, including credit/debit cards, digital wallets (e.g., PayPal, Apple Pay, Google Pay), and alternative payment solutions, should be made available. Additionally, ensuring seamless mobile payment options is crucial, acknowledging the consumer preference for using mobile devices in the online shopping experience.

> To promote increased utilization of e-commerce platforms, Morocco should actively endorse initiatives focused on bolstering consumer confidence through enhanced online security and streamlined payment procedures. Prioritizing the security and safeguarding of consumer data is essential to foster greater trust and encourage the widespread adoption of e-commerce.

(vi) Socio-cultural factors

Promoting Awareness and Advertising Initiatives: There is a crucial need for consumer awareness and education regarding e-commerce in Morocco. Implementing campaigns will enable citizens to understand the advantages and practical aspects of utilizing e-commerce. Additionally, conducting workshops or online tutorials is essential to acquaint consumers with e-commerce platforms, various payment methods, and the overall online shopping process. These educational efforts aim to empower individuals, fostering a more informed and confident consumer base in the realm of e-commerce.

5.3. Recommendations for Egypt

(i) Government policies and administrative procedures

Enhancing the Legal Infrastructure for E-commerce: Establishing a robust legal framework for e-commerce is imperative. This involves the development and implementation of clear and supportive legislation that safeguards the interests of both consumers and businesses. These regulations should encompass aspects such as online transactions, data protection, and consumer rights to ensure a fair and secure online environment.

Implementing Business Incentives: To further promote the adoption of e-commerce by businesses, it is crucial to introduce various incentives. This includes providing incentives for private sector investment in e-commerce, such as offering tax breaks or subsidies for businesses that embrace online platforms. These measures aim to stimulate economic growth and create a conducive environment for businesses to thrive in the digital landscape.

(ii) Access to market and finance

Facilitating International Market Access through Collaboration: Strengthening international collaboration is essential to simplify market access and advance e-commerce development globally. This entails forging new international collaborations and agreements that streamline cross-border e-commerce, including negotiations for trade agreements aimed at simplifying customs procedures and reducing barriers to international transactions.

Establishing E-commerce Hubs: The creation of dedicated e-commerce hubs or zones is of paramount importance. These hubs would provide shared infrastructure and resources, particularly benefiting small businesses, making it easier for them to venture into the online market. Such initiatives aim to enhance market accessibility and enable businesses to reach consumers more seamlessly in their online product offerings.

Supporting SMEs through Financial Initiatives: Providing robust support and incentives for small and medium-sized enterprises (SMEs) to establish an online presence is crucial. This involves encouraging banks to offer loans with low-interest rates, establishing funds, and disseminating information on accessing international funding for the development of e-commerce activities. These financial measures are designed to empower SMEs and foster their growth in the ever-evolving e-commerce landscape.

(iii) Trust and security (cybersecurity)

Strengthening Cybersecurity Protocols for E-commerce: The imperative for Egypt lies in the implementation of robust cybersecurity measures, safeguarding consumers' personal and financial information to instil confidence in online transactions. In an era marked by a proliferation of scams and cyber-attacks, prioritizing high-level cybersecurity becomes essential for ensuring the protection of consumer data.

Promoting Customer Reviews and Ratings on Platforms: Fostering a culture of transparency is vital in e-commerce, and one effective means is by encouraging customer reviews and ratings on platforms. Facilitating the sharing of experiences and opinions by consumers contributes to an informed decision-making process. Therefore, it is incumbent upon businesses to actively promote and endorse the use of customer reviews and ratings on e-commerce platforms, ultimately aiding consumers in making well-informed choices.

(iv) Logistics and transport infrastructures

Enhancing Logistics and Supply Chain Efficiency: To optimize the delivery of goods, it is advisable to fortify logistics and supply chain networks. This entails the enhancement of transportation, warehousing, and last-mile delivery services to ensure swift and efficient deliveries, ultimately achieving heightened consumer satisfaction.

(v) Payment methods

Facilitate Trustworthy Digital Payments: To foster the expansion of digital payments, creating a regulatory environment that promotes the adoption of secure and reliable payment methods is crucial. Addressing this barrier is vital in building trust among both consumers and businesses, ultimately supporting the growth of e-commerce.

Enhance Mobile Banking Accessibility: Promoting the utilization of mobile banking services is essential to reach the unbanked population. This objective can be achieved through strategic partnerships between financial institutions, telecommunications companies, and government agencies, ensuring inclusiveness and expanding access to financial services for a broader demographic.

(vi) Socio-cultural factors

Education and Accessibility for Consumers: It is essential to offer educational resources highlighting the advantages and convenience of e-commerce, especially for those new to online shopping. Ensure that your website accommodates individuals with varying levels of digital literacy.

Understanding Cultural Preferences and Customized Offerings: Every business should conduct thorough market research to comprehend the cultural nuances and preferences of the Egyptian population. Adapt your e-commerce platform and sales strategies to cater to local tastes, preferences, and cultural sensitivities.

Language Localization: Businesses must ensure that their e-commerce platform is available in Arabic, the official language, and not just in English. This step is crucial for making the platform accessible and user-friendly to a wider audience. Providing customer support in Arabic to address any queries or concerns is also key.

Providing robust support and incentives for small and medium-sized enterprises (SMEs) to establish an online presence is crucial. This involves encouraging banks to offer loans with low-interest rates, establishing funds, and disseminating information on accessing international funding for the development of e-commerce activities. These financial measures are designed to empower SMEs and foster their growth in the ever-evolving e-commerce landscape.

5.4. Recommendations for Uganda

(i) Government policies and administrative procedures

Establishment of Regulatory Framework and Policies: It is imperative to establish a comprehensive regulatory framework and enabling policies for e-commerce. This involves creating tax incentives for e-commerce enterprises, streamlining online business registration processes, and formulating policies conducive to the growth of e-commerce. Resolving regulatory issues related to import/export laws, customs, and cross-border transactions is crucial to facilitate the smooth operation of e-commerce companies.

Streamlining Cross-Border Trade Procedures: Encouraging cross-border e-commerce trade requires simplifying customs procedures and actively promoting regional trade agreements. This approach is akin to allowing a tree to branch out and grow in different directions, expanding its reach and contributing to the growth of international trade.

Government Support through Tax Incentives: The government should consider offering tax incentives or subsidies to e-commerce businesses, particularly startups. This support can significantly enhance a country's global competitiveness. In an increasingly digital and interconnected world, fostering the growth of e-commerce positions a country as a key player in the global market.

(ii) Access to market and finance

Facilitate SMEs' Access to Finance for E-commerce Adoption: Supporting the transition of SMEs into the realm of e-commerce is critical for overall development. The key to nurturing and sustaining these businesses is ensuring they have access to essential financial resources.

(iii) Trust and security (cybersecurity)

Elevate Online Transactions and Strengthen Security Measures: A crucial challenge demanding attention is the pervasive lack of trust in online transactions. Addressing this issue requires the establishment of dependable and secure payment systems, complemented by robust consumer protection laws and regulations. The creation of clear and legally binding guidelines for online transactions holds the potential to significantly enhance customer trust. Initiating programs such as digital literacy campaigns, promoting the use of reliable and secure e-commerce platforms, and implementing quality control procedures for online goods and services are essential steps in building a more secure and trustworthy online environment.

(iv) Logistics and transport infrastructures

Enhance Infrastructure and Logistics for E-commerce: Tackling the logistical hurdles in e-commerce, notably high delivery costs and reliability concerns, is paramount. The development of streamlined logistics networks, encompassing efficient warehousing and distribution systems, holds substantial potential for improving the delivery of goods and services. Exploring public-private partnerships becomes a viable avenue to enhance logistics infrastructure, with a particular focus on bolstering rural delivery networks.

“Tackling the logistical hurdles in e-commerce, notably high delivery costs and reliability concerns, is paramount. The development of streamlined logistics networks, encompassing efficient warehousing and distribution systems, holds substantial potential for improving the delivery of goods and services.

(v) Payment methods

Cultivating Mobile Money and Digital Payment Solutions: Foster the adoption of mobile money and digital payment solutions as one would enrich the soil with vital nutrients. This initiative creates a fertile environment for the flourishing of e-commerce. Recognizing the limited use of traditional banking services and its impact on online transactions, it becomes imperative to embrace alternative payment options such as mobile money. Additionally, exploring potential applications for blockchain and digital currencies contributes to increased financial inclusion. The overarching policy goal should be the seamless integration of these alternative payment methods into the established financial system.

(vi) Socio-cultural factors

Promoting E-commerce Awareness: To overcome the challenge of scepticism and limited acceptance of e-commerce, it is essential to launch awareness campaigns. These campaigns aim to enlighten the population about the advantages of embracing e-commerce as opposed to traditional transaction methods. Additionally, e-commerce operators must uphold product quality to meet client expectations and address concerns related to mistrust. Stakeholders have emphasized the establishment of nationwide value chains by e-commerce operators to reduce delivery times and enhance proximity to their customer base.

Tailored E-commerce Solutions Reflecting Cultural Factors: Create e-commerce platforms and solutions that align with the local context. These platforms should be designed to accommodate cultural preferences, linguistic diversity, and the unique needs of Ugandan consumers. This customized approach ensures that e-commerce is more accessible and resonates effectively with the local population.

5.5. Recommendations for the Republic of Côte d'Ivoire

(i) Technology, infrastructure and connectivity

Enhance Internet Infrastructure in Rural Areas to Facilitate E-commerce: It is imperative to champion heightened public and private investment in broadband infrastructure, focusing specifically on rural areas. This effort can be collaboratively undertaken with internet service providers (ISPs) to extend and modernize existing networks. The goal is to provide high-speed and reliable internet connectivity in rural regions, ensuring uninterrupted access to e-commerce services.

(ii) Government policies and administrative procedures

Regularize the sector by fighting against scams and counterfeiting: Certainly, addressing scams and counterfeiting in the e-commerce sector is crucial for consumer protection, maintaining trust, and fostering a healthy digital economy. It is needed that the state enacts laws and regulations to stop the scam and fraud. In this regard, the State must monitor or fight against counterfeiting, regularize the sector and also create a platform where all players who sell online will be subscribed and the quality of their products will be analyzed.

Government should support the creation of an online virtual market (marketplaces) for E-commerce at the regional level by removing customs duties. An online virtual market can facilitate economic growth by providing a platform for small and medium-sized enterprises (SMEs) to reach a wider audience. Removing customs duties can further stimulate cross-border trade and increase the overall economic activity in the region.

(iii) Access to market and finance

Establishing a Gateway for Seamless E-commerce Market Entry: The creation of a user-friendly platform facilitates easier access to the e-commerce market for businesses, enabling them to showcase their products or services to a wider audience. Enhanced visibility through this platform not only attracts new customers but also empowers businesses to explore previously untapped markets. E-commerce platforms, offering the convenience of

shopping from anywhere at any time, negate the necessity of physical store visits.

Empowering Young Entrepreneurs through Enhanced Credit Access: To support the development of startups led by young entrepreneurs, collaboration with financial institutions, government agencies, or nonprofit organizations is crucial. This collaboration aims to provide resources and training on responsible financial practices. Establishing partnerships with financial institutions, venture capital firms, or angel investors willing to invest in and support young entrepreneurs in the e-commerce sector is pivotal for their success.

(iv) Digital Skills

Conduct Digital Skills Training for E-commerce Excellence: Success in the e-commerce sector is now inseparable from the integration of cutting-edge technologies and digital tools. To maintain competitiveness, it is imperative to orchestrate focused and thorough digital skills training programs. These programs should encompass the creation of training modules tailored to the diverse needs of participants, taking into account variables such as role, experience, and business objectives.

(v) Trust and security (cybersecurity)

Foster Trust through Truthful Advertising Practices: Companies engaged in e-commerce must develop sound advertising strategies that refrain from false claims, as deceptive practices diminish trust and drive customers away. False advertising misguides consumers, resulting in disappointment and frustration when the received product or service falls short of the promised benefits. Such deception erodes trust and weakens the foundation of a healthy e-commerce relationship.

Initiate a Comprehensive Cybersecurity Program: To promote increased adoption of e-commerce, it is crucial to kickstart a cybersecurity initiative, ensuring robust data protection and secure engagement in e-commerce activities by consumers. Establishing consumer protection mechanisms, including dispute resolution procedures and oversight of online business practices, is essential. The implementation of a comprehensive cybersecurity strategy plays a pivotal role in fortifying consumer confidence and security in the e-commerce landscape.

(vi) Logistics and transport infrastructures

Implementing Dedicated Motorcycle Express Lanes: Introducing express lanes exclusively designated for motorcyclists delivering products presents an intriguing concept that can significantly enhance efficiency and decrease delivery times. Establishing dedicated express lanes on existing roadways specifically tailored for motorcyclists engaged in product delivery services is a promising idea. These lanes should be segregated from regular traffic to ensure seamless and swift movement.

Enhancing Road Infrastructure for E-commerce Demands: It is imperative to expand road infrastructure to meet the escalating demands of e-commerce delivery, a crucial step toward boosting efficiency, alleviating congestion, and optimizing overall logistics. The implementation of intelligent traffic management systems utilizing real-time data is essential for streamlining traffic flow. This approach not only reduces congestion but also enhances the efficiency of delivery vehicles.

(vii) Payment methods

Investing in Payment Method Enhancement: Prioritize the enhancement of payment methods by establishing a robust and secure payment system. Concerns about e-payment issues, including theft, highlight the necessity for state regulation in the sector. Instances of unreliable cash payments also pose challenges, leading to orders without corresponding payments. Consequently, the establishment of a secure payment system is imperative to address these issues.

Establishing a Trustworthy Payment System: The creation of a reliable payment system entails comprehensive understanding of local and international regulations governing online payments. Adherence to data protection laws and security standards is crucial, along with the selection of a reputable payment gateway that supports various payment methods such as credit cards, digital wallets, and bank transfers. This approach ensures a secure and versatile payment infrastructure.

(viii) Socio-cultural factors

Elevate Consumer Awareness and Education on E-commerce: Foster a deeper understanding among consumers about the benefits of e-commerce by creating informative and captivating content across various mediums, including blog posts, articles, infographics, and videos. Additionally, organize interactive campaigns, polls, and contests to actively engage and encourage consumer participation. This multifaceted approach aims to enhance awareness and education, promoting a more informed and confident adoption of e-commerce.

5.6. Main transnational recommendations for Africa in the context of the AfCFTA

Adapt fiscal and administrative system to e-commerce: Many of the African countries express concerns about the proliferation of e-commerce due to its connections with tax evasion and informality. Implementing appropriate regulations and modernizing their fiscal systems to align with e-commerce practices has the potential to bring about a significant transformation. Assisting African countries in adjusting their fiscal approaches to accommodate e-commerce can promote these practices and alleviate administrative hurdles for e-commerce operations.

***Establish Labels and standards for e-commerce in Africa*:** To address information asymmetry issues in the market, it is essential to introduce an e-commerce label. This label, crafted by a pan-African organization, should extend across the AfCFTA. The labelling criteria must be transparent, universally known among all producers, and cost-effective. The implementation of this label can instill confidence and mitigate trust issues within the African context.

***Set advertising campaigns for e-commerce with the support of the major platforms*:** To tackle the challenge of perceptions and acceptance of e-commerce in the African context, it is crucial to implement awareness campaigns that educate the population about the advantages of embracing e-commerce over traditional transaction methods. These campaigns can be executed on a country-by-country or multinational basis. While running individual campaigns may be expensive for each firm, a cost-effective approach can be achieved by forming a large coalition of firms or garnering support from employers' unions. This collaborative effort ensures a more impactful and widespread promotion of the benefits of e-commerce.

Promote easy e-payment solutions across the Continent: Encouraging the adoption of mobile money and digital payment solutions is a pivotal measure to expedite the growth of e-commerce. With limited banking service penetration in Africa, relying solely on standard online transactions is not a comprehensive solution. Achieving broader financial inclusion requires offering a diverse range of solutions tailored to socio-economic contexts and cultural habits. This encompasses the integration of alternative payment methods like mobile money, along with exploring possibilities involving digital currencies and blockchain technologies. Policies should strive to seamlessly incorporate these alternative payment systems into the mainstream financial ecosystem.

Support SMEs access to finance in order to shift to e-commerce: Over 95% of businesses in Africa are classified as SMEs, emphasizing the pivotal role they play in the economic landscape. Focusing on these SMEs and encouraging their transition to e-commerce is crucial for widespread adoption of this practice. To facilitate this shift, it is imperative to establish a financial incentive mechanism that supports these enterprises in embracing e-commerce. Various instruments and incentives can be employed to achieve this objective. Importantly, these actions can be budget-neutral, as the implementation of e-commerce can result in resource savings for authorities and contribute to job creation. The realized savings can then be allocated as subsidies to incentivize SMEs to adopt e-commerce practices, thereby fostering not only their growth but also enhancing cross-border trade opportunities.

Enhancing and streamlining the delivery and logistics sector: For many African countries, optimizing distribution and improving logistics is imperative to harness the full potential of e-commerce. While the private sector is making investments, particularly with the emergence of new firms in these activities, there is still a deficiency in logistics platforms, and the value chain requires optimization. It is crucial to explore innovative solutions, focusing on last-mile delivery options like local warehouses, lockers, and third-party delivery services to reduce delivery distances and enhance speed. Specific industrial policies should be directed towards these firms to elevate their performance. Significantly improving the efficiency of the logistics sector has the potential to revolutionize the e-commerce market in Africa.

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Establish e-commerce registries and networking platforms: While e-commerce is gaining momentum in Africa, consumers often find themselves disoriented in cyberspace, lacking sufficient information about market players. Elevating information accessibility can enhance consumer trust and awareness of the vast opportunities in e-commerce. Many African nations should consider instituting official registries for e-commerce sites, bolstering consumer confidence. The creation of a networking platform, whether at the national, regional, or continental level, is essential for knowledge exchange in e-commerce, providing clarity on the roles of each firm. Such a platform can catalyse strategic partnerships and aid stakeholders in overcoming obstacles to the growth of e-commerce across the continent.

Streamlining Processes for Transnational E-commerce: In African countries, consumers and producers encounter numerous hurdles in cross-border e-commerce transactions, hindering the establishment of efficient trade between nations. To address this issue, the African Union,

the AfCFTA Council, and other competent bodies must streamline these procedures. Encouraging the adoption of electronic documentation, including digital invoices and shipping manifests, is crucial for simplifying data exchange between customs authorities and businesses. The adoption of these digital formats holds the potential to significantly enhance the efficiency and growth of transnational e-commerce in Africa.

Fostering e-skills and advancing e-inclusivity:e-skills are indispensable in both daily life and e-commerce. Despite a significant portion of African citizens having internet access, a substantial segment still lacks essential e-skills, encompassing the "secure and critical use of the Internet and digital realms." Acquiring these skills is crucial for the effective utilization of e-commerce. Governments should prioritize investments in national e-skills programs and formulate comprehensive strategies to cultivate these skills in a meaningful and effective manner.

Implementing targeted programs for key sectors in Africa: While e-commerce has achieved broader accessibility, primarily for specific goods like food, there exists untapped potential to expand its reach to other crucial goods and services pivotal for African economies, yielding high social returns. Notably, cultural goods and services within the creative economy represent a significant niche that African countries can readily develop and scale up. E-commerce serves as a valuable channel for exporting these goods and services. The strategic establishment of specific and targeted programs, especially in sectors like the creative economy, can act as a catalyst, influencing other sectors to enhance their e-commerce capabilities. African countries should design specialized e-commerce initiatives for distinct sectors and conduct thorough evaluations to draw meaningful insights from these experiences.

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ANNEX 1:

Interview Guide

This interview guide serves as a tool to gather insights and perspectives on the barriers to e-commerce adoption and export in Africa. Designed to ensure consistency in the way interviews are conducted, the guide covers a range of topics from general knowledge of e-commerce to recommendations for overcoming identified barriers.

The interview guide will be pilot tested to ensure clarity and applicability. Although three optional or complementary techniques are available, including internal testing, expert evaluation, and field testing, we have chosen field testing for this project. The guide will be pre-tested with two individuals who closely resemble our target participants.

Introduction

- Introduce yourself and the purpose of the interview.
- Explain the purpose of the research project and the interview: With this interview, we hope to identify the barriers to adoption and export via e-commerce in Africa.
- Thank the interviewee for his/her time.
- Explain how data will be handled and made public. Provide options for "off the record" responses (not recorded or transcribed) and for the interviewee to review the transcripts and final report. Ask for permission to publish their name in the final report.

General questions: Personal information

- Could you please briefly introduce yourself (your diploma, your age, your experience in the position, your experience in the labour market...)?
- Could you please briefly introduce your company/ organization (sector, main activity, product or service, age, size, ...)?
- Could you please explain your role/position in the company/organization?
- Could you please give a brief background of your experience and expertise in e-commerce in Africa?

Specific questions: Major themes

The interview will then move on to questions related to the ten major themes:

1. General knowledge about e-commerce:

This section aims to understand the interviewee's perception of the current state of e-commerce in their country, as well as the level of adoption of e-commerce for export purposes in Africa and their specific country. It will also gauge the level of awareness and understanding of e-commerce among businesses in the interviewee's locality.

2. Technology, infrastructure, and connectivity:

The objective of this topic is to identify technological challenges that hinder the adoption of e-commerce. Questions under this theme will explore issues such as Internet accessibility, speed, quality, cost, and the availability and affordability of necessary hardware (such as computers and smartphones).

3. Financial resources:

This topic will focus on the financial barriers that businesses face when considering the adoption of electronic commerce. Questions will seek to determine whether the costs associated with setting up and maintaining e-commerce operations and integrating payment gateways pose significant challenges.

4. Skills and expertise:

The focus here is on the technical skills and e-commerce knowledge of the firms' employees. The interview will explore whether there's a significant gap in skills and knowledge and whether this is a barrier to e-commerce adoption.

5. Trust and security:

Trust and security are critical aspects of e-commerce. This topic will explore the perceived risks of online transactions, trust in the payment system, and concerns about privacy and cybersecurity that may influence companies considering e-commerce adoption.

6. Government policies and regulations:

This section focuses on regulatory and legal barriers that impact e-commerce operations. It will seek to uncover

any complex regulations, licensing requirements, or legal uncertainties that prevent companies from embracing e-commerce.

7. Logistics:

Logistics is a critical component of e-commerce. This section will examine whether inadequate logistics and transport infrastructure, long delivery times, high shipping costs and complex customs procedures pose significant challenges to e-commerce exports.

8. International payments:

This topic explores whether financial barriers such as high costs of international money transfers, foreign exchange restrictions, and fluctuating exchange rates pose significant challenges to the development of e-commerce in the respondent's country.

9. Sociocultural barriers:

This section assesses whether socio-cultural factors such as a preference for face-to-face interaction, negotiation before payment, and the custom of "touching and feeling" before buying a product act as barriers to e-commerce adoption in the respondent's country.

10. Recommendations:

Finally, this section will allow respondents to share their insights and suggestions on how to overcome the barriers to business and consumer adoption of e-commerce in their respective countries. This will provide valuable input on potential solutions and strategies to promote e-commerce adoption.

The data gathered from these topics will provide a comprehensive understanding of the barriers to e-commerce adoption and exports in Africa, facilitating the development of effective strategies to address them.

ANNEX 2:

Overview of the Questionnaire

Section 1: General Information

1. Please indicate your country of residence:

- Côte d'Ivoire
- Egypt
- Morocco
- Tunisia
- Uganda

2. How many years has your company been in business?

- 0-2 years
- 3-5 years
- 6-10 years
- 11-20 years
- Over 20 years

3. What is your industry?

- Retail trade
- Professional services
- Manufacturing industry
- Agribusiness
- Technology/IT
- Healthcare
- Other (please specify)

4. What is the size of your company in terms of employees?

- 0-10
- 11-50
- 51-200
- 201-500
- More than 500

5. What percentage of your employees are women?

- 0-25%
- 26-50%
- 51-75%
- 76-100%

6. How would you rate the level of digital skills among your company's decision makers (owners, managers, executives, etc.)?

- Basic
- Intermediate
- Advanced
- Expert

7. How would you rate the level of digital skills among your company's employees?

- Basic
- Intermediate
- Advanced
- Expert

8. What is your company's annual revenue? (To be adjusted in local currency)

- Less than $100,000
- $100,001 - $500,000
- $500,001 - $1 million
- $1 million - $5 million
- More than $5 million

9. What percentage of your sales are online?

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

10. Where are you headquartered?

11. Does your company export any of its goods or services?

- Yes
- No

12. If yes, to which countries does your company primarily export?

13. How many physical locations does your company have?

- 1
- 2-5
- 6-10
- More than 10

14. What is your role in the company?

- Owner/CEO
- General Manager
- Sales/Marketing
- IT Manager
- Other (please specify)

15. What percentage of your company's decision makers (owners, managers, executives, etc.) are women?

- 0-25%
- 26-50%
- 51-75%
- 76-100%

16. Is your company B2B (business-to-business) or B2C (business-to-consumer)?

- B2B
- B2C
- Both

17. Does your company have a dedicated IT department?

- Yes
- No

18. Does your company have a website?

- Yes
- No

19. If your company has a website, does it have an online store for e-commerce?

- Yes
- No

Section 2: Experience and online shopping habits

1. Has your company ever done business online (either buying or selling)?

- Yes
- No

2. If you answered yes to the previous question, how often does your company conduct business online?

- Daily
- weekly
- Once a month
- Less often

3. What percentage of your company's purchases (for business, not for resale) are made online?

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

4. In the past 6 months, what types of products or services has your company purchased online? (You may select more than one)

- Office supplies
- Electronics and IT equipment
- Raw materials
- Business services (marketing, consulting, etc.)
- Digital products (software, cloud storage, etc.)
- Other (please specify)

5. Does your company sell products or services online?

- Yes
- No

6. If you answered yes to the previous question, what types of products or services does your company sell online?

- Physical goods
- Digital products
- Services
- Other (please specify)

7. What online platforms does your company use for its e-commerce activities? (You may select multiple answers)

- Own website
- Social media (Facebook, Instagram, etc.)
- Third-party marketplaces (Jumia, Alibaba, etc.)
- Other (please specify)

8. What payment methods does your business accept for online transactions? (You may select multiple answers)

- Credit/Debit Card
- Mobile payment (M-Pesa, etc.)
- Bank Transfer
- Cash on delivery
- Cryptocurrency
- Other (please specify)

Section 3: Barriers to the use of e-commerce channels

1. What do you consider to be the main barriers to the use of e-commerce channels in your country? (You may select multiple answers)

- Lack of confidence in online transactions
- High delivery fees
- Unreliable delivery services
- Difficulty paying online
- Lack of Internet access or poor connectivity
- Limited understanding of the benefits of e-commerce
- Preference for in-store shopping
- Regulatory difficulties
- Limited access to digital devices (computers, smartphones, etc.)
- Other (please specify)

2. Have you encountered specific problems using e-commerce channels?

- Yes
- No

3. If you answered yes to the previous question, please describe the nature of these issues. (Open-ended question)

4. To what extent has limited Internet connectivity in your country affected your e-commerce activities?

- Not at all affected
- Slightly affected
- Moderately affected
- Significantly affected

5. Have you experienced security problems (fraud, data loss, etc.) with your online transactions?

- Yes, frequently
- Yes, occasionally
- No, never

6. How would you rate the logistics infrastructure for e-commerce deliveries in your country?

- Excellent
- Good
- Fair
- Poor
- Very poor

7. How has the low penetration of banking services in your country affected your e-commerce activities?

- No impact
- Some difficulty making online payments
- Significant difficulty making online payments
- Need to use alternative payment methods (e.g., mobile money)
- Don't know/Not applicable

8. To what extent has a lack of customer awareness and confidence in e-commerce affected your business?

- Not at all
- Minor
- Moderately
- Significantly

9. Have you encountered regulatory difficulties (taxes, customs, import/export regulations, etc.) when using e-commerce?

- Yes, frequently
- Yes, occasionally
- No, never

10. If you have customers in rural areas, how does their access to Internet connectivity and delivery services affect your e-commerce activities?

- No impact
- Some impact
- Significant impact
- Not applicable, we do not have customers in rural areas

11. Have you encountered infrastructure problems (power outages, limited digital devices, etc.) that have hindered your e-commerce activities?

- Yes, frequently
- Yes, occasionally
- No, never

12. How does the linguistic diversity of your customer base affect your e-commerce activities?

- No impact
- Some impact
- Significant impact
- Not applicable, our customer base speaks a common language.

Section 4: Attitudes towards e-commerce

1. Overall, how satisfied are you with your company's online shopping experience?

- Very satisfied
- Somewhat satisfied
- Neutral
- Somewhat dissatisfied
- Very dissatisfied

2. Given current trends, does your company plan to increase its use of e-commerce channels in the future?

- Definitely yes
- Likely yes
- Not sure
- Likely not
- Definitely not

3. Which of the following tools or platforms does your company currently use for e-commerce? (You may select more than one)

- Social media (Facebook, Instagram, Twitter, etc.)
- Digital marketplaces (e.g., Jumia, Alibaba)
- Phone orders
- Email orders
- Company website
- Mobile apps
- Other (please specify)

4. To what extent do you trust the following e-commerce platforms for your business transactions? (Note: You may need to make this question specific to each platform)

- Very trust
- Some trust

- Neutral
- Distrust
- Very distrustful

5. In your opinion, can e-commerce become a reliable source of revenue for your company?

- Definitely yes
- Likely yes
- Not sure
- Likely not
- Definitely not

6. How has the introduction of e-commerce affected your business operations?

- Significantly improved
- Slightly improved
- No impact
- Slightly negative impact
- Significant negative impact

7. What additional features or improvements would you like to see in the e-commerce platforms you use? (Open-ended question)

8. In your industry, how likely do you think customers will adopt e-commerce in the next five years?

- Very likely
- Likely
- Not sure
- Not likely
- Extremely unlikely

9. How often does your company evaluate and adjust its e-commerce strategy?

- Monthly
- Quarterly
- Annually
- Never

10. What potential benefits do you see for your company from increased adoption of e-commerce? (Open-ended question)

11. What initiatives or measures do you think could be taken to encourage greater use of e-commerce channels in your country? (Open question)

Section 5: Technology Acceptance Model 3 (TAM 3) for SMEs

The response options are structured in a Likert scale format (1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree).

1. Perceived usefulness:

- E-commerce is useful in helping my SME achieve its goals.
- E-commerce increases the effectiveness of my SME's business operations.
- The use of e-commerce for marketing purposes is beneficial to my SME.
- Using e-commerce improves my SME's reach to customers.

2. Perceived ease of use:

- E-commerce platforms used by my SME are easy to use.
- It is easy for my SME's employees to learn how to use e-commerce platforms.
- My SME can easily adapt to changes or upgrades in e-commerce platforms.
- The use of e-commerce simplifies tasks in my SME.

3. Perceived enjoyment:

- My SME enjoys using e-commerce for business operations.
- Employees in my SME enjoy using e-commerce platforms.
- Using e-commerce platforms increases the job satisfaction of employees in my SME.
- Using e-commerce platforms is engaging and interesting.

4. Trust:

- My SME trusts the e-commerce platforms we use.
- E-commerce platforms provide secure and reliable services.
- My SME has confidence in the accuracy and reliability of transactions conducted through e-commerce platforms.
- The vendors or service providers my SME interacts with through e-commerce platforms are trustworthy.

5. Perceived compatibility:

- E-commerce is compatible with my SME's current operations and practices.
- E-commerce is consistent with my SME's values and business strategies.
- E-commerce integrates well with my SME's existing technical infrastructure.
- E-commerce will facilitate better coordination and communication within my SME.

6. Subjective norm:

- The subjective norm or peer pressure in my SME's industry to use e-commerce is strong.
- My SME feels compelled to use e-commerce because competitors in our industry are using it.
- The opinions of industry peers are influential in my SME's decision to adopt e-commerce.
- My SME is using e-commerce to stay competitive in the industry.

7. Attitude towards innovation:

- My SME has a positive attitude towards technological innovations such as e-commerce.
- My SME is open to adopting new technologies in general.
- Technological innovation is necessary for the survival and growth of my SME.
- My SME considers technological innovation a strategic priority.

8. Intention to use e-commerce:

- My SME is likely to use e-commerce in the future.
- My SME plans to increase its use of e-commerce in the future.
- My SME is likely to rely heavily on e-commerce for business operations in the next five years.
- My SME intends to invest more resources in e-commerce in the future.

Section 6: Universal Theory of Acceptance and Use of Technology 2 (UTAUT 2) for SMEs

The response options are structured in a Likert scale format (1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree).

1. Performance expectations:

- E-commerce platforms effectively meet the business needs of my SME.
- Using e-commerce improves my SME's performance compared to traditional business practices.
- E-commerce platforms meet the service quality and efficiency expectations of my SME.
- The use of e-commerce increases the productivity of my SME.

2. Expectation of effort:

- It is easy for my SME to transition from traditional business practices to e-commerce.
- The use of e-commerce is clear and understandable to my SME.
- My SME's employees find it easy to become familiar with e-commerce platforms.
- My SME can easily get technical support for problems with e-commerce platforms.

3. Social influence:

- The opinions of customers or clients strongly influence my SME's adoption of e-commerce.
- My SME's partners or suppliers encourage the use of e-commerce.
- My SME often receives e-commerce advice or recommendations from industry peers.
- My SME feels pressure from its social business circles to use e-commerce.

4. Facilitating conditions:

- My SME's technological infrastructure is highly supportive of e-commerce adoption.
- My SME has the necessary resources (financial, human, technical) to use e-commerce.
- The external environment (e.g., government regulations, market trends) strongly facilitates my SME's use of e-commerce.
- My SME has adequate training and knowledge sharing systems to facilitate the use of e-commerce.

5. Experience:

- My SME's overall experience with e-commerce has been positive.
- My SME's past experience has a strong influence on its current use of e-commerce.
- My SME's experience with e-commerce has been mostly positive.
- My SME's experience with one e-commerce platform influences its decision to use other platforms.

6. Hedonic motivation:

- Using e-commerce provides my SME with pleasure and fun.
- The pleasure derived from using e-commerce motivates my SME to continue its use.
- The use of e-commerce makes work tasks more interesting for the employees of my SME.
- The entertaining aspects of e-commerce platforms positively influence my SME's use of them.

7. Price value:

- The benefits of using e-commerce outweigh the costs for my SME.
- My SME considers e-commerce platforms as a

cost-effective solution for business operations.
- The cost savings from using e-commerce platforms contribute to the profitability of my SME.
- The use of e-commerce is good value for money for my SME.

8. Perceived risk:

- My SME believes there are significant business risks associated with the use of e-commerce.
- The risk of data breaches and cybersecurity threats affect my SME's use of e-commerce.
- My SME believes that e-commerce platforms could pose business continuity risks.
- The perceived risks associated with e-commerce limit its use in my SME.

9. Trust in technology:

- My SME has trust in the technology that underpins e-commerce platforms.
- Trust in the security measures of e-commerce platforms influences their use in my SME.
- My SME trusts that e-commerce platforms will work as promised without failure.
- Trust in the reliability of e-commerce technology plays a significant role in its adoption in my SME.

10. Privacy concerns:

- My SME is concerned about the privacy of data on e-commerce platforms.
- Privacy concerns influence my SME's decision to use or not use certain e-commerce platforms.
- My SME is reluctant to share sensitive business information on e-commerce platforms due to privacy concerns.
- Privacy concerns have been a barrier to the adoption of e-commerce in my SME.

11. Behavioral Intention:

- My SME intends to continue using e-commerce for its business operations.
- My SME is likely to recommend e-commerce to other similar businesses.
- My SME intends to increase its use of e-commerce in the future.
- My SME plans to invest more in e-commerce in the next financial year.

12. Usage behavior:

- My SME uses e-commerce frequently for its business operations.
- A significant percentage of my SME's transactions are conducted through e-commerce platforms.
- My SME relies heavily on e-commerce for its daily operations.
- My SME's use of e-commerce has increased over the past year.

Section 7: Technology-Organization-Environment (TOE) Model for SMEs

The response options are structured in a Likert scale format (1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree).

1. External Task Environment:

- The industry characteristics and market structure of my sector support the adoption of e-commerce in my SME.
- The technology support infrastructure in my country is sufficient for my SME to adopt e-commerce.
- Government regulation in my country facilitates the adoption of e-commerce by my SME.
- The overall external environment in my country is conducive to my SME's adoption of e-business.

2. Organization:

- The formal and informal linkages within my SME support the adoption of e-business.
- The communication processes within my SME facilitate the adoption and use of e-commerce.
- The size of my SME affects its ability to adopt and use e-commerce.
- My SME has enough slack (extra resources) to invest in and use e-commerce effectively.

3. Technology:

- Technology is readily available for my SME to adopt e-commerce.
- The characteristics of the technology (reliability, performance, security) used for e-commerce in my SME are satisfactory.
- The complexity of the technology required for e-commerce is a barrier to its adoption in my SME.
- The available technology has been effective in facilitating the adoption of e-commerce in my SME.

4. Decision Making for Technological Innovation (Adoption of e-Commerce)

- Several important factors were considered by my SME in the decision to adopt e-commerce.
- The decision-making process in my SME for the adoption of e-commerce was efficient.
- My SME faced challenges during the e-commerce adoption decision process.
- My SME's decision-making process for technological innovations such as e-commerce is effective.

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