The Effects of Electronic Commerce Applications on the Operational Performance of Startup Businesses in Addis Ababa

By

Kiya Degefa

A thesis is submitted to St. Mary's University, School of Graduate Studies in partial fulfillment for the award of the degree of Master of Business Administration (MBA)

JUNE,2023

ADDIS ABABA, ETHIOPIA

ST. MARY UNIVERSITY

SCHOOL OF GRADUATE STUDIES

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ADVISOR

DR. TAYE AMOGNE (PHD)

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Declaration

I, Kiya Degefa, hereby declare that this thesis entitled " The Effect of Electronic Commerce Applications on the Operational Performance of Startup Businesses in Addis Ababa" submitted by me for the award of the Degree of Master of Business Administration (MBA) at St. Mary University in Addis Ababa, Ethiopia, is my original work and has never been presented in any other university. All sources and materials used for this thesis have been duly acknowledged.

Name of the candidate: Kiya Degefa Signature: _____ Date: _____

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The Effects of Electronic Commerce Applications on the Operational Performance of Startup Businesses in Addis Ababa

BY: Kiya Degefa

ID: SGS/0083/2014A

APPROVED BY BOARD OF EXAMINERS **Signature**

Dean, Graduate Studies _____

Advisor- Taye Amogne (PhD) _____

External Examiner- Berihun Muche (PhD) _____

Internal examiner-Muluadam Alemu (PhD) _____

Letter of Certificate

This is to certify that the thesis entitled, " The Effect of Electronic Commerce Applications on the Operational Performance of Startup Businesses in Addis Ababa " was carried out by Kiya Degefa, under the supervision of Dr. Taye Amogne (PhD), submitted in partial fulfillment of the requirements for the degree of Master of Business Administration (MBA). The thesis complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Name of advisor- Taye Amogne (PhD)

Signature_____

Date: _____

Place of submission: Addis Ababa, Ethiopia

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ACRONYMS

ICT- Information and Communication Technology

EB- Electronic Business

EDI- Electronic Data Interchange

EFT- Electronic Fund Transfer

ITU- International Telecommunication Union

IT- Information Technology

PO- Purchase Order

SME-Micro and Small Enterprise

AIE-Adaption and Implementation of Ecommerce

EA- Ecommerce Based Advertising

EM-Ecommerce Based Marketing

EOD-Ecommerce Based Order and Delivery

EO -Ecommerce on Operational Performance

Abstract:

The rapid growth of Information and Communication Technology (ICT) presents a valuable opportunity for startups to overcome budget limitations and compete in today's highly competitive business environment. However, there is a lack of research on the impact of e-commerce applications on the operational performance of startups, particularly in Ethiopia. This study aims to bridge this gap by examining the effect of e-commerce applications on the operational performance of startups and providing recommendations for improving their effectiveness. Data was collected from 61 startup businesses, focusing on the variables of Adaption and Implementation of E-commerce, E-commerce Based Marketing, E-commerce Based Advertising, E-commerce Based Order and Delivery, and the Operational Performance of startups. Descriptive statistics were used to present the characteristics of the data, while correlation analysis and regression analysis were conducted to examine the relationships between the independent variables and the dependent variable. The findings revealed that there were significant positive correlations between the variables of Adaption and Implementation of E-commerce, E-commerce Based Marketing, E-commerce Based Advertising, E-commerce Based Order and Delivery, and the Operational Performance of startups. Regression analysis further confirmed these relationships, indicating that the independent variables collectively accounted for a substantial portion of the variance in the operational performance of startups. Based on these findings, it is recommended that startups embrace e-commerce applications, invest in adaptation and implementation, implement e-commerce marketing strategies, focus on e-commerce-based advertising, streamline order and delivery processes, continuously monitor and improve performance, stay updated with e-commerce trends, seek collaboration and partnerships, prioritize continuous learning and skill development, and maintain a customer-centric approach. By following these recommendations, startups can enhance their operational performance, increase their competitiveness, and capitalize on the benefits offered by e-commerce applications. This study contributes to the understanding of how e-commerce can affect the operational performance of startups and provides valuable insights for practitioners, policymakers, and researchers in the field of e-commerce and entrepreneurship.

CHAPTER ONE

1.Introduction

1.1. Background of the study

Electronic commerce, in a broad sense, is the use of computer networks to improve organizational performance. Increasing profitability, gaining market share, improving customer service, and delivering products faster are some of the organizational performance gains possible with electronic commerce. Electronic commerce is more than ordering goods from an on-line catalogue. It involves all aspects of an organization's electronic interactions with its stakeholders, the people who determine the future of the organization (Chaffey, 2009)

The rise of e-commerce has greatly impacted the startup business landscape. E-commerce has provided startups with new opportunities to reach customers and expand their businesses in ways that were previously not possible (Molla, 2005) . With the widespread adoption of the internet and mobile devices, startups can now sell their products and services to customers around the world. This has helped to level the playing field for startups, as they are now able to compete with established businesses on a more equal footing.

Thus, electronic commerce includes activities such as establishing a Web page to support investor relations or communicating electronically with potential customers. In brief, electronic commerce involves the use of information technology to enhance communications and transactions with all of an organization's stakeholders. Such stakeholders include customers, suppliers, government regulators, financial institutions, mangers, employees, and the public at large. So, the current rapid rate of technological advancement allows for the development of a new type of company known as a start-up business, which aims to create a scalable, repeatable, and successful business model (Hasani, 2016). Sales growth, capacity to increase market share and customer retention rate, and total return on investment are all factors that can be used to explain the company's business performance (Mustapha, 2017).

The trend of e-commerce application can be seen in two parts: developing and developed countries e-commerce implementation trend. Most of its utilization was taking place in developed countries and they are testing the benefits of it at large in all business sectors. Obviously, the adoption of e-

commerce depends on capacity of fulfilling the necessary infrastructural and manpower facilities in addition to creating awareness by the society. According to (Tan, 2007) Electronic commerce is generally considered to be the sales aspect of e-business. It also consists of the exchange of data to facilitate the financing and payment aspects of business transactions. This is an effective and efficient way of communicating within an organization and one of the most effective and useful ways of conducting business.

E-commerce has had a profound impact on operational performance, with studies showing that it can significantly improve efficiency and reduce costs. (Jordão, 2020). found that e-commerce can lead to a 25% reduction in operating costs for businesses, thanks to the automation of tasks such as order processing and inventory management. Additionally, e-commerce platforms come with built-in analytics and reporting tools, allowing businesses to make data-driven decisions in real-time. Furthermore, e-commerce has enabled businesses to access new markets and increase sales revenue. According to a study by Forrester, e-commerce sales in the US are projected to reach $1.5 trillion by 2023 (Soliman, 2003), highlighting the growing importance of online sales for businesses. In addition, e-commerce has allowed businesses to improve customer satisfaction by offering 24/7 support, personalized recommendations, and real-time order tracking.

The advent of e-commerce has transformed supply chain management by introducing new levels of complexity and opportunities for businesses. (Choi, 2001). found that e-commerce has shifted the focus of supply chain management from control to emergence. With the emergence of online marketplaces, businesses must adapt to the evolving dynamics of supply networks and leverage e-commerce to build robust and flexible supply chains' E-commerce has also enabled businesses to improve operational performance by reducing transaction costs and eliminating intermediaries in the supply chain. By connecting directly with suppliers and customers, businesses can streamline processes and reduce lead times, resulting in faster time-to-market and increased customer satisfaction. Furthermore, e-commerce has enabled businesses to leverage data and analytics to optimize their operations. (Sharma, 2021) by collecting and analyzing data on customer behavior, inventory levels, and supply chain performance, businesses can identify areas for improvement and make data-driven decisions E-commerce platforms often come with built-in analytics and reporting tools, allowing businesses to monitor performance in real-time and make rapid adjustments.

Almost every industry has been undergoing dramatic change for a number of years. Like other industries in Ethiopia, the business industry has also considered the Information and Communication Technology (ICT) as a channel of communication and advertisement rather than as means of market distribution which is profoundly applicable in other countries. However, with the existing rapid development of information technology, infrastructure and globalization, there is no doubt that e commerce application can offer remarkable opportunity in the industry. Thus, studying about the prospective impact of e-commerce application in Ethiopia in the business industry gives wider sense. In general, deployment of e-commerce has huge impact on the business process of all product or service provider industries. (Kumar, 2018) The nature of ecommerce by itself encourages the adoption of online sales considering suitable products that needs less physical assessment.

1.2 **Statement of the problem**

The most powerful force influencing the global economy and business is the quickening of globalization, which is supported by information and communication technologies (ICT). According to (Pham, 2021) The global reach of the internet has been growing quickly, and because of the variety of services it offers in commercial transactions, it has become more and more important to buyers and sellers to the point where suppliers and customers cannot function without it. (Kwilinski, 2019) stats that due to the quick development of internet technology, a new business environment known as e-commerce has emerged in the marketplace. This new environment can be thought of as a business mover.

E-commerce is currently booming as a result of widespread use of internet technology and improved business understanding of information technology. Businesses of all sizes and ages have been able to transition to electronic commerce as a result of the rapid spread of internet technology; this indicates that the availability of web-based electronic stores has allowed markets to be expanded and products to be available internationally, allowing for competitive advantage. The term "electronic business" (EB) refers to the use of technology to change internal business procedures to increase consumer value (Sood, 2012). Using information and communication technology, crucial business processes are being transformed to support all corporate activities. Ecommerce is the term used to describe any transaction in which ownership or usage rights to

goods or services are transferred via a computer-mediated network such as the Internet. Consequently, it enables parties to conduct business electronically without having to come into direct physical touch. In today's fiercely competitive market, every business strives to flourish. Therefore, methods that facilitate the achievement of this objective are unavoidable (Bhat, 2016).

The success of new start-up businesses is often hindered by limited budgets for advertising, staffing, and customer service. According to (Barnes, 2007) the rapid expansion of Information and Communication Technology (ICT) provides an opportunity for these businesses to compete in the highly competitive business environment. Despite this opportunity, there is a lack of research on the impact of e-commerce applications on the operational performance of startup businesses in Ethiopia.

Despite the increasing popularity of e-commerce applications, there is a lack of understanding about how these applications can affect the operational performance of start-ups. As e-commerce applications become more prevalent in the business landscape, it is important to examine their effect on start-ups' operational performance, including revenue generation, cost reduction, productivity, and customer satisfaction. Without this understanding, start-ups may miss out on opportunities to improve their operational performance and remain competitive in the market. Therefore, this study aims to examine the effect of e-commerce applications on the operational performance of start-ups and provide recommendations for improving the effectiveness of these applications.

1.3 **Research Questions**

This study sought to answer the following research questions;

- ✓ Does the adaption and implementation of e-commerce strategies improve the operational performance of startup businesses?
- ✓ How can ecommerce-based marketing affect the operational performance of startup business?
- ✓ Does E-commerce-based advertising influence the operational performance of new start-ups?
- ✓ Does Ecommerce based order management and delivery systems impact the operational performance of startup business?

1.4 Objective of the study

1.4.1 General objective of the study

The general objective of the study is to examine the effects of e-commerce applications on the operational performance of newly established (start-up) businesses firms.

1.4.2 Specific objectives of the study

- To analyze the effects of adaption and implementation of e-commerce strategies can improve the operational performance of startup businesses.
- To examine the effects of ecommerce marketing on the operational performance of new startups business.
- To analyze the effects of Ecommerce advertising on the operational performance of new startups business.
- To examine the effects of Ecommerce based Order and Delivery on the operational performance of new startups business.

1.5 Significance of the study

The goal of this study is to determine how e-commerce applications impact the performance of new Addis Ababa start-up firms. E-commerce is becoming increasingly popular throughout the world. Despite the fact that e-commerce is a new concept in Ethiopia, the use of e-commerce is increasing with time due to the advent of web-based internet technologies. However, empirical data on the impact of e-commerce on business success in developing countries such as Ethiopia is few. As a result, it is hoped that the study's findings would contribute to closing this gap. It may also be used by policymakers to keep track on the potential influence of e-commerce in boosting the success of new start-up enterprises.

1.6 Scope of the study

Conceptual Scope:

The conceptual scope of the study focuses on the effect of e-commerce on the performance of new start-up businesses. It aims to examine the impact of e-commerce applications, marketing strategies, advertising efforts, and order and delivery processes on the operational performance of start-ups in the chosen industry.

Methodological Scope:

The methodological scope of the study involves the use of a mixed-method approach, incorporating both qualitative and quantitative data collection methods. Questionnaires and interviews are utilized to gather primary data from start-up enterprises in the selected area, while data analysis includes descriptive statistics and inferential techniques such as correlation and regression.

Geographical Scope:

The geographical scope of the study is limited to the Addis Ketema sub-city in Addis Ababa, Ethiopia. Specifically, the research focuses on the Merkato district within this sub-city. The findings and conclusions are specific to this geographic area and may not be directly applicable to other regions or cities.

Temporal Scope:

The temporal scope of the study is limited to this year, from 2022 up to 2023. This timeframe corresponds to the emergence and increasing usage of e-commerce applications in the business environment. The study specifically examines start-up businesses that have adopted and utilized e-commerce applications within this defined time period.

CHAPTER TWO

2.Literature Review

This chapter is divided into two sections. The first section of the study's chapter discusses concepts and theories about e-commerce and company performance, while the second section presents empirical data from earlier research in the same field.

2.1 Theoretical Literature Review

2.1.1 The Concept of E-commerce

E-commerce means electronic commerce. It means dealing in goods and services through the electronic media and internet. E-commerce involves carrying on a business with the help of the internet and by using the information technology like Electronic Data Interchange (EDI). ECommerce relates to a website of the vendor on the Internet, who trades products or services directly to the customer from the portal. The portal uses a digital shopping cart or digital shopping basket system and allows payment through credit card, debit card or EFT (Electronic fund transfer) payments (Shahjee, 2016).

A more complete definition is: E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals (Nisha, 2012).

Electronic commerce is a commercial environment in which information regarding products sales, purchases, and transportation is managed using electronic technology. Electronic commerce includes mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange, inventory management systems, and automated data gathering systems (Shahriari, 2015). From customer service to new product development, e-commerce has already permeated every element of the business. It enables businesses to reach out to and connect with customers through online advertising and marketing, online order taking, and online customer support, among other things (Shahriari, 2015).

2.1.2 E-Commerce Facilitators:

- Internet

A massive internet penetration has added to growth of E-commerce. Internet and smart phones are becoming an integral part of every life. Internet is no more a source of information but has become an important tool for shopping, learning, communicating and even getting service from plumbers, carpenters, doctors etc. Supply chain is also becoming leaner and smarter as digital platforms are helping to better connect with the customers which significantly reduces the waste and supporting to green businesses (Chen, 2021).

Over the past 15 years the ICT revolution has driven global development in an unprecedented way. With an immense progress in technology, internet and its services have led to creation of new markets (Oliveira, 2023).The internet user population was small during the 1980s, experiencing a slow but steady growth until 1994 due to an increasing number of text-based users (e.g., those using email and file transfer functions). Then, with the introduction of the World Wide Web and subsequent multimedia content expansion, the number of net users exploded.

Infect, the internet has grown much more quickly than any other medium in history (Howe, 2007). The International Telecommunication Union (ITU), a United Nations body, recently predicted in 2015 that 3.2 billion people will be online. The population in May 2015 stood at 7.2 billion. In the year 2000 there were just 400 million internet users worldwide.

- Payment Gateways:

A payment gateway is an e-commerce application service provider service that authorizes credit card payments for e-businesses, online retailers, bricks and clicks, or traditional brick and mortar. The life blood of online business is the payment routes which comprises credit card, debit card, online banking payments, electronic funds transfer. The world is transforming from cash to digital money and thus there is a need of payment gateways for sustainable future ecommerce Montague, D. A. (2010).

- Social Media

Businesses are increasingly making use of social media in order to market their goods and services. Social media refers to websites and computer programs that allow people to communicate and

share information on the internet using a computer or mobile phone. Social media has played a great role in brand building and informing various offers to the customers. It also helps in getting the feedback about the product or service. It provides a platform for brand building, advertisements, developing a community of trusted users, spreading word of mouth etc. (Alnsour, 2020).

2.1.3 E-commerce applications

A major transformation in the corporate sector is brought about by the urgency of e-commerce. The use of e-commerce affects every step of the process and is transforming all corporate functional areas and their crucial activities, from marketing to paying bills (Jahanshahi A. A., 2013). E-commerce has drawn a lot of interest throughout the world because of its numerous applications in company processes and the benefits it offers. E-commerce is being used in business processes across a range of industries, independent of size and business type. The most popular e-commerce applications include electronic advertising, electronic customer support, electronic marketing, electronic payment systems, and electronic order and delivery, however there are many more types as well (Jahanshahi A. A., 2013). giving present and new clients complete product information and accepting order and paying for it online, at any time of the day and anywhere, on the Internet, providing advice on matters of concern are among the main advantages of e-commerce is to (Išoraitė, 2018).

2.1.3.1 Electronic advertisement

Electronic advertising is a method of promoting your product or service via digital formats that your target audience is viewing. Most types of electronic advertising involve the presentation of an ad (often a static image, audio clip, or video) via a digital medium. Unlike more traditional forms of advertising, like static billboards or direct mailers, electronic advertising can be updated in real-time and hyper-targeted to relevant audiences. Many people think of electronic advertising as a form of online advertising, but it can be much more than that. Streaming radio and podcast advertising opportunities exist in the electronic advertising space among many other channels as well. It's estimated that more than 526 billion will be spent on digital advertising methods worldwide by 2024. With technology rapidly advancing, electronic ad space will continue to become more prevalent and a part of every marketer's strategy (Yasmin, 2015).

It's a style of marketing that prioritizes luring in new customers. A global advertisement, in particular, is an expensive investment when promoting products and services through old or conventional media (Kumar, 2018). As a result, companies frequently use the advantages of the internet to promote themselves online for less money. Advertising that uses the Internet and other digital media to market and sell a company's goods and services is referred to as electronic advertising. (Tseng, 2014) stats a larger audience of potential clients can be reached online by using electronic advertising. Advertising can also be supported within one's financial constraints, which increases its cost-effectiveness. It is characterized as providing customers with product information, displaying business details on a website, electronic brochures, or purchasing advice online. Only display a subset of the available products that are pertinent to the buyer. People gain from electronic media when it keeps them up to date on general information, awareness, knowledge, and current events. Electronic and social media are worth about what people's eyeballs are worth (Pirzada, 2014).

2.1.3.2 Electronic Marketing

E-marketing is the planning and execution of product and service creation, distribution, promotion, and pricing in a computerized, networked environment, such the Internet and the World Wide Web, in order to expedite exchanges and match customer expectations. Compared to traditional marketing, it has two key benefits. Customers gain from more convenience and lower prices. Due to companies that offer e-marketing and online purchasing, customers may obtain market information, purchase goods, and seek services without ever leaving their homes (24/7) (Taherdoost, 2014). When compared to visiting a real store, they can read advertisements online or via email, obtain electronic coupons, view product images, compare prices, and complete transactions with only a few mouse clicks. E-businesses can save money on 11 distribution networks and physical store space at the same time, which they can pass on to their customers (Glanz, 2012).

Push and pulling marketing are the two different e-marketing strategies. Internet users ask for specific information in a passive marketing strategy known as "pull marketing." Push marketing is a proactive marketing strategy that enables e-marketers to "push" product/service information to website visitors or customers without their express permission (Dominici, 2009). Push marketing includes activities including banner advertising, pop-up ads, email promotions, and

spamming. Examples of this include letting clients get in touch with a sales office and disclosing details to clients, clients, and suppliers. finding out what people want and need via the internet using the internet to use the client's needs as a guide obtaining consumer pleasure using computerized means. The way companies are done in the modern world has undergone a revolutionary change thanks to the revolution and breakthroughs in computer science, the Internet, information technology (IT), media, and communications, as well as the related cost reductions. Electronic marketing approaches have developed over the past several decades as a result of an increase in the number of businesses and organizations using the Internet and other electronic communication technologies to conduct business and/or marketing activities (El-Gohary, 2012).

2.1.3.3 Adaption and Implementation of Ecommerce strategies

In recent years, e-commerce has emerged as a vital tool for businesses to expand their reach and tap into new markets. However, the successful adoption and implementation of e-commerce strategies requires careful planning and consideration of various factors. This literature review aims to explore the key issues and challenges involved in the adaptation and implementation of e-commerce strategies and provide insights into best practices for businesses to maximize the benefits of e-commerce.

Adaptation of E-commerce Strategies The adaptation of e-commerce strategies involves tailoring e-commerce solutions to meet the specific needs and requirements of businesses. According to (Al-Qirim, 2006), e-commerce strategies should be adapted to suit the cultural, social, and economic contexts of businesses. This includes adapting the language, content, and design of e-commerce platforms to suit the preferences and expectations of customers. For example, businesses targeting international markets may need to offer multilingual websites and support various payment methods. Implementation of E-commerce Strategies The implementation of e-commerce strategies involves the successful integration of e-commerce platforms with existing business processes and systems. According to (Turban, 2015), the implementation of e-commerce strategies requires careful consideration of various technical, organizational, and managerial factors. These include selecting the right e-commerce platform, ensuring compatibility with existing systems, training employees, and developing effective marketing strategies.

The adoption and implementation of e-commerce strategies can be challenging for businesses. According to (Hinson, 2015), the main challenges include a lack of technical expertise, insufficient

financial resources, and limited access to technology infrastructure. Additionally, businesses may face cultural and organizational barriers, such as resistance to change and reluctance to embrace new technologies. To overcome the challenges and maximize the benefits of e-commerce, businesses should follow best practices for the adaptation and implementation of e-commerce strategies. According to (Schallmo, 2017), key best practices include developing a clear e-commerce strategy, selecting the right e-commerce platform, investing in technology infrastructure, and training employees. Additionally, businesses should continuously monitor and evaluate the effectiveness of e-commerce strategies and make necessary adjustments based on feedback and performance metrics.

2.1.3.4 Electronic order and delivery

Orders are produced and sent out electronically. A purchase order (PO), sometimes referred to as a PO, is a written record of a supplier's request for goods or services in accordance with the terms of the contract between the parties (Monczka, 2009).Electronic orders are transmitted through EDI systems as electronic data interchange (EDI) messages. They are used to complete a string of electronic communications that automate the buying process, including ordering, delivery alerts, and billing. Reordering benefits come from the overall advantages of employing EDI systems. By putting established standards into practice, it increases the security, adaptability, and fluidity of communication between trading partners. Along with the increase in communications transmitted (to customers, suppliers, and logistics), the number of business partners also increases in lockstep with the number of messages sent (customers, suppliers, logistics operators, and so on).

With time, EDI's advantages become clearer. Both customers and their suppliers gain from electronic ordering. The system's speed, security, uniformity, and traceability features are its most significant advantages. It explains coordinating the online buying of software goods from providers lower transaction costs per business tracking the delivery of products both inbound and outbound Order input and delivery online Interchange of Electronic Data (EDI). Customers can buy things in today's global internet markets. Customers have access to appealing options through cross-border electronic commerce thanks to its low pricing and extensive product selection. (Kim, 2017).

2.1.4 Operational Performance

Any organization that develops and implements performance management is simply trying to increase staff productivity and thereby enhance operational performance. It takes excellent implementation to achieve the intended result rather to simply having a performance system in place and applying it. (de Waal A. A., 2007). asserts that a successful performance management strategy should achieve the operational financial and non-financial goals that have been established, including improving skills and competences, customer service, and process quality. Performance measurement and responding to the appropriate outcome are both necessary for effective performance management (de Waal A. G., 2011).

The company can identify the degree of operational goals achieved by conducting an evaluation of operational performance. Therefore, regardless of their type, businesses need to assess operational performance to understand the level of effectiveness of the applied performance management process in terms of fulfilling the already defined goals (Melville, 2004). Organizations may also discover their process's strengths and shortcomings through performance measurement, and take appropriate action. This suggests that one of the most crucial elements of the performance management system is performance measurement.

A performance measure, defined as "a variable or metric used to quantify the efficiency or efficacy of an action" (Bourne, 2003), is commonly used to evaluate performance (Ricci., 2016). According to (Gentilini, 2008). performance measurement as a technique of assessing operational performance highlights how the units must be examined and how they will be attained. As a result, putting in place the most effective technique of evaluation and determining the proper variables that are well matched in signaling the many components of organizational performance is critical when measuring operational performance. Organizations may then become clear on how operational performance is to be measured as well as how the various perspectives of performance indicators are to be attained after the variables to be examined are understood and the appropriate measurement unit is in place.

Based on its description, one can see how the term performance relates to the many financial and non-financial aims of businesses. In this instance, performance must be linked to numerous financial and non-financial performance metrics (Popova, 2010). As a result, in order to measure operational performance against various indicators, businesses must deploy a collection of

statistical data. Depending on the aim of the measurement, the data utilized might be either quantitative or qualitative. Traditional performance assessment solely examined operational success from a financial standpoint.

Although there are several metrics for gauging an organization's financial success, profit margins, return on assets, and return on equity are three of the most commonly utilized (Tangen, 2004). However, in today's fiercely competitive corporate world and globalization period, when the world has shrunk to the size of a village, depending just on financial performance indicators cannot offer a complete picture of operational success. Because traditional performance measures did not take into account non-financial factors that directly or indirectly affect operational productivity, many companies around the world are now measuring performance by incorporating non-financial factors such as customer loyalty and employee satisfaction (Ittner, 2003).

In general, each of these models was created to aid in measuring the success of an organization by taking into account both the financial and non-financial aspects of various indicators. However, the individual strategies and objectives that each business hopes to accomplish strongly influence what to monitor and how to create the operational performance measurement and assessment system. As a result, it becomes difficult to identify a single operational performance measurement that fits all businesses and forces them to establish unique operational measurements tailored to their unique goals (Tangen, 2004).

According to the literature, the Balanced Scorecard is one of the most essential and commonly utilized management tools for operational performance management (Felizardo, 2017). It was created in 1990 by Kaplan and Norton to assist firms in measuring performance from two balanced perspectives: financial and nonfinancial, short-term and long-term, internal and external. As a result, in this study, company performance is assessed using financial, operational, and market-based performance metrics.

Operational excellence is commonly acknowledged as a critical success factor in many firms. It's best defined as the level at which all of a company's business units work together to achieve major business objectives. It is natural that there are several publications and textbooks on operational performance management. Many companies have departments and job functions committed to transforming the value of their assets into increased performance. Information technology is both the cause and the solution to today's most critical business concerns. According to the report,

market share, new product launch, product/service quality, marketing effectiveness, and customer happiness are all subcategories of operational performance (Carton, 2006).

2.2 Empirical Literature Review

This topic contains a presentation of the data collected through the various researches that has been conducted in order to fulfill the purpose of this study.so These studies are conducted to examine the effect of adoption of e-commerce on the operational performance of new startup businesses, To conduct this empirical literature review, a comprehensive search was performed across electronic databases and academic journals. The keywords used in the search included "e-commerce," "startups," "online business," "digital marketing," and "entrepreneurship." Studies published between 2010 and 2021 were considered to ensure the inclusion of recent research. After evaluating the relevance and quality of the studies, a final set of articles was selected for analysis.

Pervious research Findings:

Enhanced Market Reach and Global Expansion:

Numerous studies highlight the significant positive impact of e-commerce on the market reach and global expansion of startups. By utilizing online platforms, startups can overcome geographical barriers and access a wider customer base. A study by Chen et al. (2017) found that e-commerce-enabled startups experienced substantial increases in sales volume and customer acquisition rates.

Improved Operational Efficiency:

E-commerce offers startups the opportunity to streamline their operations and enhance efficiency. Research by Liang et al. (2019) indicated that startups adopting e-commerce solutions experienced reduced operational costs, improved inventory management, and faster order processing. This efficiency gain allows startups to allocate resources more effectively and compete with established competitors.

Increased Customer Engagement and Loyalty:

E-commerce provides startups with tools to engage customers and build lasting relationships. Studies by Yousafzai et al. (2015) and Cao et al. (2019) demonstrated that startups utilizing e-commerce platforms witnessed higher customer engagement levels, improved brand loyalty, and

increased repeat purchases. By leveraging personalized marketing strategies and customer data analytics, startups can better understand and serve their customers' needs.

Market Disruption and Innovation:

E-commerce has been a catalyst for market disruption and innovation among startups. Startups leveraging e-commerce platforms often introduce novel business models and disrupt traditional industries. Research by West et al. (2018) highlighted that e-commerce startups have transformed industries such as retail, transportation, and hospitality by offering unique value propositions and disrupting established market players.

Challenges and Limitations:

While e-commerce offers numerous advantages, startups also face challenges and limitations. Studies by Liu et al. (2017) and Wang et al. (2020) identified issues such as intense competition, cybersecurity threats, logistical complexities, and trust concerns as significant challenges for e-commerce startups. Startups must address these challenges effectively to fully exploit the potential of e-commerce.

In last year (Teshome Guangul, 2022) examined how The Effect of Electronic Commerce Applications on the Operational Performance of Startup Businesses Based on the study findings it is concluded that the adoption of e-commerce, in general, had considerable effect on the operational performance of new startup businesses. Electronic Advertising, Electronic Payment, Electronic marketing, Electronic Order and Delivery, and Electronic Customer Support Service commerce in new startup business had at a very high extent. The study concluded that the adoption of e-commerce, in general, had considerable effect on the operational performance of new startup businesses.

A study by (Lule, 2019) looked into how E-commerce affected (SMEs) in Uganda. The study found a significant link between business profitability and e-commerce adoption when measured in terms of sales volume and client base. (Azeem, 2015) investigated the impact of e-commerce on organizational performance in the context of Pakistan's banking industry. The findings indicated that there is a link between e-commerce and organizational performance, and that businesses that adopt e-commerce perform better in terms of business operations, employee productivity, and client happiness.

Through four focal points—E-commerce integration, social media integration, customer relationship management, and online marketing strategies— (Achiando, 2019) investigated the impact of e-commerce on the performance of Micro and Small Enterprises (MSEs) in the private security sector. Performance was measured as sales volume. According to the study's findings, e-commerce and MSE performance are significantly and favorably related. (Igwe, 2020) investigated how E-Commerce affected business performance in a corporate setting. The empirical findings show that e-commerce adoption improves business activity and overall performance.

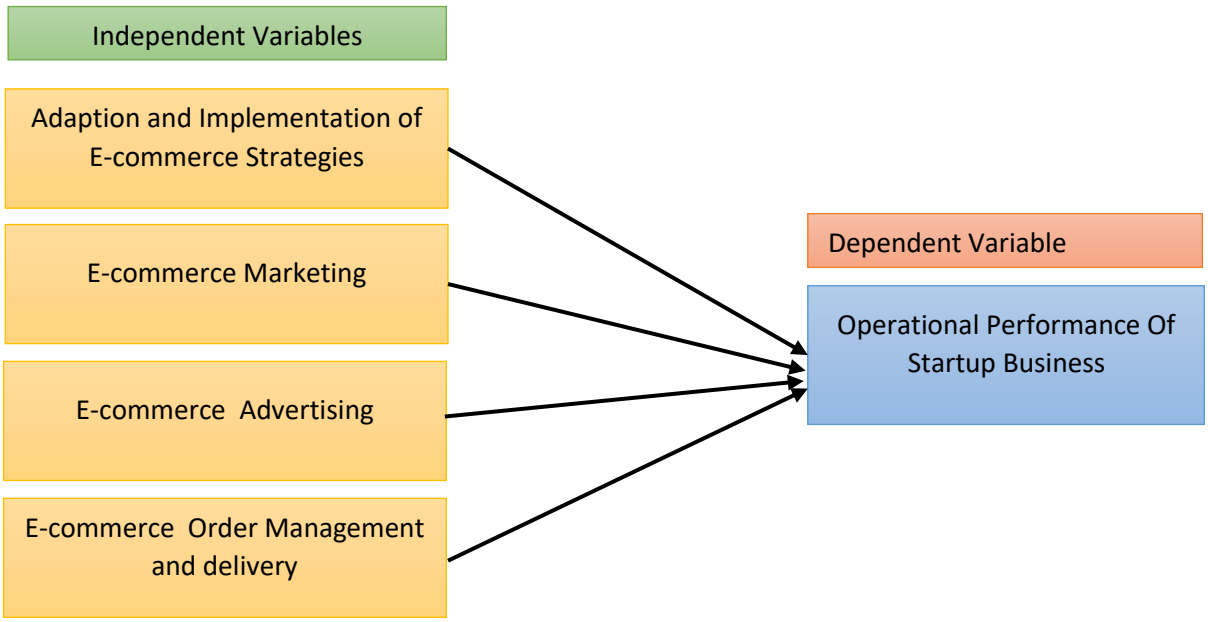
There were other studs like (Jahanshahi A. A., 2013) investigated how e-commerce applications affected the operational effectiveness of small and medium-sized businesses in India. Accordingly, the empirical results showed that the use of electronic commerce apps has a statistically significant positive impact on the operational and market-based performance of small and medium-sized businesses as well as on their overall operational performance in general. The study did note, however, that it does not statistically significantly improve the financial performance of small and medium-sized businesses.

In the previous year (Jahanshahi A. A., 2011) also investigated how Indian small- and medium-sized businesses used electronic commerce tools to conduct business. Finding electronic commerce applications, according to the report, has a large and advantageous impact on the operational procedures of Indian SMEs. (Abumalloh, 2020) investigated the variables influencing SMEs' adoption of e-commerce and established the impact of this adoption on SMEs' performance in Uganda. The empirical findings of this study show that adoption of e-commerce has a considerable positive impact on the performance of SMEs.

2.4 Conceptual framework of the study

It is the demonstration of relations between variables, dependent and independent variables: A concept which can take on different quantitative values is called a variable. If one variable depends upon or is a consequence of the other variable, it is termed as a dependent variable, and a variable whose value determines the value of another variable, it is termed as an independent variable. The framework also considers several factors that may influence the relationship between e-commerce strategies and operational performance. These factors include organizational factors such as the size and structure of the startup business, technological factors such as the availability and

compatibility of e-commerce platforms, and environmental factors such as competition and customer preferences.



Source: Own Survey 2023

Figure 1 CONCEPTUAL FRAME WORK

The effective adoption and implementation of e-commerce strategies can lead to improved operational performance. This may be influenced by factors such as the selection of appropriate e-commerce platforms, the development of effective marketing and advertising strategies, and the ability to manage inventory and order fulfillment processes and the role of e-commerce in expanding the reach and customer base of startup businesses can be influenced by factors such as the ability to reach a wider audience through online channels, the development of effective search engine optimization strategies, and the ability to create personalized customer experiences through e-commerce platforms.

The electronic advertising can have a positive effect on operational performance. This may be influenced by factors such as the ability to target specific customer segments through online advertising channels, the development of effective messaging and branding strategies, and the ability to measure the impact of advertising campaigns through analytics and metrics. the use of

electronic order management and delivery systems can impact operational performance. This may be influenced by factors such as the ability to automate order processing and fulfillment, the ability to track and manage inventory in real-time, and the ability to provide timely and accurate delivery to customers.

CHAPTER THREE

Research Methodology

3. Introduction

This chapter deals with the research methodology; it is a plan of action or a way to systematically solve the research problem. Under this topic research design and approach, target population, sampling design and sample size, methods of data collection and analysis, validity and reliability of the instrument and ethical consideration are discussed in detail.

3.1 Research Approach

Both qualitative and quantitative research approaches were used in this study. The qualitative approach is used to uncover in-depth research that is impossible to analyze using quantitative techniques. Comparatively, a quantitative approach allows for the use of numerical explanation, which broadens the scope of research findings. This research supports the range and depth of the findings by combining the two methodologies (Saunders, 2007). As a result, the researcher used a hybrid technique to carry out this investigation.

3.2 Research design

The research design is the overall strategy for answering the study questions. In other words, it is the overall research plan that assists the researcher in obtaining answers to research questions (Kombo, 2014). In order to achieve the study objectives, the researcher conduct descriptive and explanatory research designs on the basis that it helps to examine the effect of ecommerce on new startup businesses in Addis Ababa's sub city Merkato (Dubai tera).

While descriptive research design is advantageous to collect details of data from many respondents, it describes what the reality or what actually exist with in a situation such as current practices, progresses, and situations of various aspects of the research (Creswell, 1999). The explanatory research design depicts determining causal relationship between Ecommerce and operational performance.

3.3 Sampling Design

In this study, sample size and sampling design are determined in the process of selecting samples. The researcher determined, the study population, the sample frame, sampling technique and then selecting the sample to examine the effects of ecommerce in the operational performance of startup business.

3.3.1 Study population

According to (Malone, 2003) population is defined as "the complete set of units of analysis that are under investigation, while element is the unit from which the necessary data is collected. The target population has the elements, time, and geographical boundaries showing that the scope of study and the research objective play a major role in the definition of the target population (Sekaran, 2016). This study specifically looks into Merkato Dubai Tera in Addis Ababa to see how e-commerce affects the operational performance of startup businesses. This study solely looks at new start-up businesses that use e-commerce applications for day-to-day operations. Because Merkato is one of the largest open markets in Africa and has a substantial population, the scope of the research is constrained because it will take a lot of time and money.

3.3.2. Sample frame

In order to ensure the validity of the study taking sufficient sample size and utilizing sampling techniques are given special concern. The sample frame are start up business that are found in Merkato Dubai that sell cloths and cosmetics only. Even though Dubia tera has more than thousand shops that sell cloths and cosmetics but only few uses ecommerce-based strategies so the number of businesses that uses ecommerce-based strategies in their operation are about 184 shops during the survey. But note that this number may vary since there where a lot of shops that didn't want to engage in the survey or answer any questions.

3.3.3 Methods of sampling and Sampling Technique

This research used stratified sampling method which involves dividing the population into groups. The researcher selected this because stratified sampling can increase the precision of estimates and reduce the sampling error compared to simple random sampling. since this research is focused on the effect of ecommerce in operational performance of startup business that are cloth and

cosmetics-based business this specific topic has subpopulations (business that sell cloth, business that sell cosmetics and business who sell both) and samples are selected from each group proportionally.

Below using the stratified sampling method, the researcher divided the subpopulation in to three different groups business that sell cloths, business that sell cosmetics and business who sell both. This groups are formed based on the different aspect how the group of customers they attract and they sell different type of products.

Population		Proportion	Sample size
Cloth sellers	74	74/184=0.4	0.4*70=28
Cosmetics sellers	96	96/184=0.52	0.52*70=36
Cloth and cosmetics sellers	14	14/184=0.08	0.08*70=6
Total	184	1	70

Source: Own Survey 2023

Table 1 stratified sampling method

Therefore, the sample size for each of the group is proportional to their size and by using simple random sampling method the researcher picked random number from each group one (cloth sellers), group two (cosmetic sellers) group 3 (cloth and cosmetics sellers) will be 28,36 and 6 respectively. Thus, the total sample size will be 70.

3.4. Data sources

To acquire the relevant data the researcher used both primary and secondary data source and also apply various data gathering tools and techniques.

3.4.1. Primary Data Source

It is acquired from newly established businesses in Merkato Dubai Tera. Since the sample size for this study is 70 stores that use e-commerce, the primary data is collected through interviews and questionnaires at the designated site. The data for the study is quantitative cross-sectional data gathered from primary sources. The study depended more on quantitative and cross-sectional primary data.

3.4.2 Secondary Data Sources

The researcher used secondary data sources from the following sources. The secondary data source is through interview from businesses owners. The researcher used from firms, management documents, procedures, policies, regulations, and standards to be taken in to account for the review. In addition, literatures, reputable journals, books, different articles, periodicals, websites are sources to be considered as a secondary data on customer retention of insurance company.

3.5 Methods of data Collection

The researcher employed both primary and secondary Data source by using various data gathering tools and techniques. The primary data Collected through questionnaire, interview and document review, whereas the secondary data Collected through document review.

3.6 Instruments of Data Collection

To obtain firsthand information from respondents on the topics under examination, researcher employ a range of data collection tools/instruments. A survey questionnaire that was initially developed based on previous research will serve as the main data collection tool for the current study, which is investigating the impact of e-commerce applications on operational performance in new start-up business organizations. Demographics, e-commerce application factors, and the impact of e-commerce applications on operational performance are component of the questionnaire. On a five-point Likert scale, the questionnaire featured a total of 28 items.

The Likert scale will be used to ask respondents to rate a specific problem on a scale from strongly disagree to highly agree. The rating system has an even number of options, ranging from one to five. For each closed-ended question, the scales used in the 28 questionnaires were based on a 5-point Likert scale (with 1 indicating very disagree, 2 indicating disagree, 3 indicating neutral, 4 indicating agree, and 5 indicating very agree).

The physical questionnaires is handed to the management of the sampled new start-up businesses, and respondents was instructed to complete and return the questionnaires to the researcher according to a predetermined schedule. They are completely free to participate and remain anonymous. The surveys take between 10 and 30 minutes to complete, and data collection for the project will be finished in one week.

3.6 Reliability and Validity of data collection instrument

According to (Heale, 2015), validity and reliability are measures used in quantitative research to assess the accuracy of the measurement tool and its consistency. Validity refers to the extent we are measuring what we hope to measure (and what we think we are measuring), while Reliability is concerned with questions of stability and consistency - does the same measurement tool yield stable and consistent results when repeated over time. Both types of measures are important tools to reach at a valid research result. Therefore, to achieve this, the researcher will use the following mechanisms.

To assess the validity of the described research, several steps can be taken. Firstly, review the research design to ensure it aligns with the objectives and enables comprehensive data collection and analysis. Secondly, evaluate the suitability and credibility of the data sources, considering both primary and secondary sources. Scrutinize the data collection methods, including questionnaires and interviews, for reliability and adherence to protocols. Assess the representativeness of the study population through the chosen sampling technique. Evaluate the appropriateness of the descriptive and inferential statistical methods used for data analysis. Consider the relevance and generalizability of the findings to a broader context. Verify the transparency and completeness of the research report, including acknowledgment of limitations. Seek peer review and expert opinions to gain valuable insights. By following these steps, the validity of the described research can be effectively assessed.

Before using the data gathered during a study or analysis, its validity must be verified. For a measurement to be regarded sound, it must meet the criteria for validity, reliability, and applicability (Kothari, 2004). The capacity of a data-gathering tool to deliver consistent results throughout several trials in varied contexts and times is known as reliability. Lee Cronbach created the Cronbach's alpha coefficient in 1951, and it is now a commonly used metric for reliability. A design's internal consistency, also referred to as dependability, is evaluated (Bhattacherjee, 2012). Measurements with an alpha coefficient value between 0.7 and 0.8 are thought to have good reliability, while those with an alpha coefficient value between 0.6 and 0.7 are thought to have a fair level of reliability. In this case, a measurement with an alpha coefficient value between 0.8 and 0.95 is thought to have very good internal consistency (Zikmund, 2013).

Researcher can evaluate an instrument's ability to measure what it promises to measure in a particular study using the validity test (Kothari, 2004). In order to guarantee the validity of the instrument in this study, validity tests will be created based on previous research, evaluations of relevant literature, and standard questions in the connected research area. Additionally, the research advisor's judgment and experts with sufficient knowledge and expertise in the subject were used to assess the content validity in this study.

Reliability Statistics		
Variables	Cronbach's Alpha	N of Items
AIE	.873	7
EA	.867	3
EM	.826	4
EOD	.805	5
EO	.890	5

Source: Own Survey 2023

Table 2 Reliability Statistics

The table presents the reliability statistics for the variables included in the study. Reliability refers to the consistency or stability of measurements. In this case, Cronbach's Alpha coefficient is used to assess the internal consistency of each variable.

- AIE (Adaption and Implementation of E-commerce): The AIE variable has a Cronbach's Alpha value of .873, indicating high internal consistency. This variable consists of 7 items that measure the adaption and implementation of e-commerce in the startups.
- EA (E-commerce Based Advertising): The EA variable has a Cronbach's Alpha value of .867, indicating high internal consistency. This variable includes 3 items related to e-commerce-based advertising practices adopted by the startups.
- EM (E-commerce Based Marketing): The EM variable has a Cronbach's Alpha value of .826, indicating acceptable internal consistency. This variable comprises 4 items that measure the e-commerce-based marketing strategies used by the startups.
- EOD (E-commerce Based Order and Delivery): The EOD variable has a Cronbach's Alpha value of .865, indicating high internal consistency. This variable consists of 5 items assessing the order and delivery processes based on e-commerce in the startups.

- EO (Operational Performance): The EO variable has a Cronbach's Alpha value of .890, indicating high internal consistency. This variable includes 5 items measuring the operational performance of the startups.

In summary, all the variables in the study demonstrate acceptable to high levels of internal consistency, suggesting that the items within each variable are measuring the construct consistently. This indicates that the data collected using these variables is reliable and can be used to draw meaningful conclusions in the analysis.

3.7 Ethical considerations

The required safety measures were implemented to ensure the study's ethics. Respondents will be informed about the study and freely volunteer to participate after being informed. They been informed that the information they provided in the questionnaire would be kept confidential and used only for academic research. Additionally, they received a guarantee that the researcher would keep their identity a secret. Thus, the key ethical concerns were taken into account, including suitable ethical principles, informed permission, anonymity and/or confidentiality, and maintaining the risk of damage in experimentation.

CHAPTER FOUR

4. Results and Discussion

4.1. Background of the Respondents

In the first section of the chapter focus on presenting the survey data related to the demographic characteristics of the respondents. This includes information about the participants' background, such as age, gender, education level, occupation, and any other relevant demographic variables that were collected during the survey. The purpose of presenting this information is to provide a comprehensive overview of the sample that was included in the study. By examining the demographic characteristics, researcher can assess the representativeness of the sample and determine if there are any specific groups that are over- or under-represented. This information is important for interpreting the findings and generalizing the results to the target population.

The second section of the chapter is dedicated to the findings and discussion of the descriptive statistics analysis. Descriptive statistics are used to summarize and describe the main features of the data collected in the study. This analysis provides insights into the distribution, central tendency, and variability of the variables under investigation. The findings from the descriptive statistics analysis may include measures such as means, medians, frequencies, and std deviation. These statistics help to uncover patterns, trends, and relationships within the data. Researchers can examine the distribution of responses across different demographic groups and identify any notable differences or similarities.

The discussion of the descriptive statistics analysis involves interpreting the findings in light of the research questions or hypotheses. Researchers may compare the results with existing literature or theoretical frameworks to gain a deeper understanding of the phenomenon being studied. They may also discuss any unexpected or contradictory findings and propose explanations or further research directions.

Overall, the purpose of the analysis and interpretation chapter is to provide a comprehensive overview of the survey data, including the demographic characteristics of the respondents and the findings from the descriptive statistics analysis. This chapter forms an essential part of the research process, as it helps to contextualize and make sense of the data collected in the study.

4.2. Questionnaire Response Rate

Out of the 70 questionnaires distributed to the respondents, 61 were returned and filed correctly. Therefore, the response rate for the questionnaire was 87 percent, indicating a satisfactory level of participation that is likely to yield valid research findings.

4.3 Demographic Characteristics of Respondents

To gain insights into the variations among respondents based on key demographic variables and to assess their responses accurately, it is crucial to analyze the demographic information of the participants. Therefore, this section aims to present the demographic characteristics of the survey respondents, specifically focusing on gender, age, Educational Level and company age. By examining these demographic features, a better understanding of the sample composition can be obtained, facilitating the interpretation of the survey findings within the context of these variables.

4.3.1 Gender of Respondents

Gender		
Gender	**Frequency**	**%**
Male	32	52.5%
Female	29	47.5%
Total	61	100%

Source: Own Survey 2023

Table 3 Gender of the respondents Statistics

The table 3 presents the distribution of respondents based on their gender in a study investigating the effect of e-commerce on the operational performance of startups. A total of 61 respondents provided their gender information for analysis.

The table 3 indicates that out of the 61 respondents, 32 identified as male, accounting for 52.5% of the total sample. On the other hand, 29 respondents identified as female, making up 47.5% of the total sample.

These findings suggest a relatively balanced gender representation in the study, with a slightly higher proportion of male respondents. The gender distribution is important to consider when analyzing the impact of e-commerce on operational performance, as it can help determine if there are any gender-related differences in the responses or outcomes of the study.

4.3.2 Age of the Respondents.

Age		
Age of the Respondents	**Frequency**	**%**
Under 26	24	39.3%
26-39	30	49.2%
40 and above	7	11.5%
Total	61	100%

Source: Own Survey 2023

Table 4 Age of the Respondents Statistics

The above table 4 presents the distribution of respondents' age in a study examining the effect of e-commerce on the operational performance of startups. The data shows the frequency and percentage of respondents falling into different age categories.

According to the findings, 39.3% of the respondents were under the age of 26. This indicates a relatively sizable proportion of younger individuals participating in the study. The age group between 26 and 39 represents the largest segment, with 49.2% of the respondents falling within this range. This suggests that the majority of the participants belong to the mid-career or early-career stage. On the other hand, only 11.5% of the respondents were aged 40 and above, indicating a relatively smaller representation of individuals in this age group.

When interpreting these results, it is important to consider the implications of the age distribution on the study's findings. For instance, the dominance of younger respondents may suggest that e-commerce has a particular significance or impact on startups within the younger age demographic. It may also indicate potential differences in attitudes, behaviors, or technology adoption between different age groups. Additionally, the relatively smaller representation of individuals aged 40 and above might warrant caution when generalizing the findings to startups with older entrepreneurs or managers.

Overall, the distribution of respondents' age in this study provides valuable insights into the demographic characteristics of the sample and serves as a basis for understanding potential age-related variations in the relationship between e-commerce and operational performance in startups.

4.3.3 Educational Level of Respondents

Educational Level		
	Frequency	**%**
Elementary	3	4.9%
High school complete	29	47.5%
Collage Diploma	14	23.0%
First Degree and Above	15	24.6%
Total	61	100%

Source: Own Survey 2023

Table 5 Educational Level of Respondents Statistics

The above table 5 provided presents the frequency and percentage distribution of respondents based on their educational level. This data was gathered as part of a study examining the effect of e-commerce on the operational performance of startups.

According to the table, a total of 61 respondents were included in the analysis. Among these respondents, 3 individuals (4.9%) reported having an elementary level of education. The majority of respondents, comprising 29 individuals (47.5%), had completed high school.

A significant portion of the respondents, 14 individuals (23.0%), held a college diploma, indicating a higher level of education beyond high school. Additionally, 15 respondents (24.6%) reported having attained a first degree and above, which suggests a higher level of academic achievement compared to the other categories.

Based on this data, it is evident that the respondents in this study exhibit a diverse range of educational backgrounds. The majority of participants had completed high school, while a considerable proportion held a college diploma or a first degree.

Understanding the educational level of the respondents is important as it provides insights into the knowledge and skills they may possess, which could potentially influence their perspectives and abilities to leverage e-commerce for operational performance in their startup ventures

4.3.4 Age of the sample business firms

Age Of Business		
	Frequency	%
Less_than_1_years	11	18.0%
1-2 years	21	34.4%
2-4 years	16	26.2%
Above 4	13	21.3%
Total	61	100%

Source: Own Survey 2023

Table 6 Age of the sample business firms Statistics

The above table 6 provides the frequency and percentage distribution of respondents based on the age of their businesses, as gathered from the data collected for the study on the effect of e-commerce on the operational performance of startups. The respondents' businesses are categorized into four groups: less than 1 year, 1-2 years, 2-4 years, and above 4 years.

According to the data, 18.0% of the respondents had businesses that were less than 1 year old. This indicates that a relatively small proportion of the participants were operating recently established startups. The largest group of respondents, constituting 34.4%, had businesses that were between 1 and 2 years old, suggesting a significant presence of startups in their early stages. Additionally, 26.2% of the respondents represented businesses that were between 2 and 4 years old, indicating a sizeable segment of startups that have progressed beyond the initial years. Finally, 21.3% of the respondents had businesses that were older than 4 years, suggesting a subset of more established startups that have been operating for a significant period.

Overall, this distribution of respondents' businesses by age provides an understanding of the composition of the sample and their respective business stages. Analyzing the effect of e-commerce on operational performance within each category could potentially offer insights into the varying impacts of e-commerce adoption based on the age and maturity of startups.

4.4. Statistics Analysis

The objective of conducting descriptive statistics is to capture the opinions of participants regarding the implementation of e-commerce in different business activities and its impact on the success and performance of newly established startup firms being studied. To assess these perceptions, a Likert scale with five measurement points was utilized for each statement (23

statements per business activity). The Likert scale ranged from 1 to 5, with 1 representing a strong disagreement with the statement, 2 indicating disagreement, 3 representing a neutral stance, 4 indicating agreement, and 5 representing a strong agreement.

To determine the overall perception of each statement under a specific business activity, the mean value of all respondents' ratings was calculated. The mean value serves as a representation of all employees' opinions on the statement. The interpretation of the mean value for each statement is as follows: values ranging from 1.00 to 1.80 represent a strong disagreement, values between 1.80 and 2.60 indicate disagreement, values between 2.60 and 3.40 reflect a neutral stance, values between 3.40 and 4.20 indicate agreement, and values between 4.20 and 5.00 represent a strong agreement.

4.4.1 Adaption and Implementation of E-Commerce Strategies

Statistics

		AIE01	AIE02	AIE03	AIE04	AIE05	AIE06	AIE07
N	Valid	61	61	61	61	61	61	61
	Missing	0	0	0	0	0	0	0
Mean		4.3443	4.0820	4.2623	4.0000	4.6885	4.0820	4.4918
Std. Deviation		.60236	.82250	.70478	.68313	.46694	.82250	.53613

Source: Own Survey 2023

Table 7Adaption and Implementation of E-Commerce Strategies Statistics

The above table 7 provides statistical information on the adaption and implementation of e-commerce strategies as measured by scale items AIE01, AIE02, AIE03, AIE04, AIE05, AIE06, and AIE07. These scale items are used to assess the level of adoption and implementation of e-commerce among startups and its impact on operational performance.

The above table 7 provides a breakdown of the information, highlighting key findings related to the scale items. The total number of valid responses for each item is 61, indicating that all participants provided their responses. Notably, there are no missing values, indicating that participants completed all items. The mean values indicate the average scores given by respondents, ranging from 4.0000 to 4.6885. Higher mean scores suggest a higher level of adoption and implementation of e-commerce strategies. The standard deviation reflects the variability or dispersion in responses for each item, with lower values indicating less variability and higher values indicating greater variability among participants' scores.

Based on the provided statistics in the above table 7, it can be observed that the respondents, on average, reported relatively high scores for the adoption and implementation of e-commerce strategies across all scale items. The mean scores range from 4.0000 to 4.6885, indicating a generally positive perception and utilization of e-commerce in the operational performance of startups.

The standard deviation values for each scale item suggest that there is some variability in the responses, relatively low, indicating that respondents' views on the adoption and implementation of e-commerce strategies may vary to some extent.

4.4.2 Ecommerce Based Marketing

Ecommerce Based Marketing					
		EM01	EM02	EM03	EM04
N	Valid	61	61	61	61
	Missing	0	0	0	0
Mean		4.7377	4.6885	4.1148	3.8525
Std. Deviation		.44353	.46694	.77671	.77106

Source: Own Survey 2023

Table 8 Ecommerce Based Marketing Statistics

The above table 8 presents the data analysis for the measurement of Ecommerce-based Marketing in relation to the effect of e-commerce on the operational performance of startups. The table includes the following information:

The analysis of the above table responses from participants revealed that there were a total of 61 valid responses for each of the four scale items (EM01, EM02, EM03, EM04), indicating full participation and no missing values. The mean scores for the scale items indicate the average level of agreement or disagreement with the statements. The mean score for EM01 was 4.7377, for EM02 it was 4.6885, for EM03 it was 4.1148, and for EM04 it was 3.8525. These mean scores provide insights into the participants' overall perception of the statements. The standard deviation values for each scale item (EM01, EM02, EM03, EM04) were 0.44353, 0.46694, 0.77671, and 0.77106, respectively. These standard deviation values indicate the extent to which the responses deviate from the average score, offering a measure of variability among the participants' perceptions**.**

This above table 8 data analysis provides information about the participants' responses to the Ecommerce-based Marketing scale items. The mean scores suggest an overall positive perception or agreement with the statements related to Ecommerce-based Marketing. The standard deviation values indicate some variability in the responses for each scale item. These findings contribute to the understanding of how startups perceive Ecommerce-based Marketing in relation to their operational performance in the context of e-commerce.

4.4.3 E-Commerce Based Advertising

Ecommerce Based Advertising				
		EA01	EA02	EA03
N	Valid	61	61	61
	Missing	0	0	0
Mean		4.5902	4.5902	3.7541
Std. Deviation		.52843	.49588	.69895

Source: Own Survey 2023

Table 9 E-Commerce Based Advertising Statistics

The above table 9 presents the results of the analysis conducted on the gathered data that aimed on E-Commerce Based Advertising. The scale items used in this analysis are represented by the variables EA01, EA02, and EA03.

The analysis from the above table was conducted using a complete dataset for each scale item EA01, EA02, and EA03, indicating no missing values. The mean scores for EA01 and EA02 were relatively high at 4.5902, indicating a strong level of agreement or positive perception among the respondents regarding E-Commerce Advertising. However, for EA03, the mean score was slightly lower at 3.7541, suggesting a comparatively weaker level of agreement or perception. The standard deviation values further provide insights into the variability of responses. The lower standard deviations for EA01 (0.52843) and EA02 (0.49588) indicate more consistent responses clustered closely around the mean. In contrast, the higher standard deviation for EA03 (0.69895) suggests greater variability in the responses for that particular scale item.

Based on these findings, it can be inferred that the respondents generally perceive E-Commerce advertising positively, as reflected by the high mean scores for EA01 and EA02. However, there seems to be more variability in the responses for EA03, indicating a potential divergence in

opinions regarding the effectiveness or impact of E-Commerce Based Advertising on operational performance.

4.4.4 Ecommerce Order and delivery (EOD)

Ecommerce Order and Delivery Statistics						
		EOD01	EOD02	EOD03	EOD04	EOD05
N	Valid	61	61	61	61	61
	Missing	0	0	0	0	0
Mean		4.5738	4.6066	3.1639	4.6230	4.1311
Std. Deviation		.49863	.49257	.68752	.48867	.84608

Source: Own Survey 2023

Table 10 Ecommerce Order and delivery (EOD) Statistics

The descriptive statistics provide valuable insights into the Ecommerce-based Order and Delivery (EOD) variables in the study. The data was collected from 61 participants for each EOD variable, indicating a sufficient sample size. Importantly, there were no missing values for any of the EOD variables, ensuring that the analysis is based on complete data.

The mean values for the EOD variables provide an understanding of participants' average evaluation of ecommerce order and delivery in terms of operational performance. EOD01 has a mean value of 4.5738, EOD02 has a mean value of 4.6066, EOD03 has a mean value of 3.1639, EOD04 has a mean value of 4.6230, and EOD05 has a mean value of 4.1311. These mean scores suggest that participants generally rated ecommerce order and delivery positively, indicating that it is perceived as contributing to operational performance.

The standard deviation values for the EOD variables indicate the dispersion or variability of the responses around the mean. EOD01 has a standard deviation of 0.49863, EOD02 has a standard deviation of 0.49257, EOD03 has a standard deviation of 0.68752, EOD04 has a standard deviation of 0.48867, and EOD05 has a standard deviation of 0.84608. These standard deviations suggest varying levels of agreement or disagreement among participants regarding ecommerce order and delivery. Larger standard deviations indicate greater variability in the responses, while smaller standard deviations suggest less variability.

Overall, the descriptive statistics reveal that participants generally viewed ecommerce-based order and delivery positively in terms of operational performance. However, there is some variability in the responses, particularly for EOD03 and EOD05. This information provides a foundation for

further analysis and interpretation of the relationship between ecommerce order and delivery and operational performance in startups.

4.4.6 Ecommerce Adaption in Operational performance

Statistics					
		EO01	EO02	EO03	EO04
N	Valid	61	61	61	61
	Missing	0	0	0	0
Mean		4.1639	4.6557	4.3770	4.5246
Std. Deviation		.84024	.60236	.71096	.64824

Table 11 E-commerce adoption and Operational performance Statistics

The above provided table 11 presents the descriptive statistics for the E-commerce Adoption variables (EO01, EO02, EO03, and EO04) in the context of a study examining the effect of ecommerce on the operational performance of startups. The table also indicates that operational performance is the dependent variable in this study. Let's analyze the table and draw a brief conclusion:

The data analysis reveals valuable insights regarding the E-commerce Adoption variables. The "N" column indicates that all participants (a total of 61) provided valid responses for the variables EO01, EO02, EO03, and EO04, indicating a complete dataset. Furthermore, there were no missing values recorded for any of these variables, as indicated by zeros in the "Missing" column. The mean values offer a measure of the participants' average scores or ratings for each E-commerce Adoption variable. Specifically, the mean scores were 4.1639 for EO01, 4.6557 for EO02, 4.3770 for EO03, and 4.5246 for EO04. These means provide insights into the participants' average level of e-commerce adoption and its relationship to operational performance. The standard deviation values reflect the variability of responses around the mean for each E-commerce Adoption variable. Notably, the standard deviations were 0.84024, 0.60236, 0.71096, and 0.64824, respectively. Higher standard deviations indicate greater variability in responses. Overall, these

findings contribute to a comprehensive understanding of the E-commerce Adoption variables and provide valuable information for further analysis and decision-making.

Based on the provided table, a very brief conclusion could be drawn as follows: The participants in the study, on average, reported relatively high levels of e-commerce adoption (as indicated by the mean scores) in relation to their operational performance. However, there is some variability (as indicated by the standard deviations) in the reported levels of e-commerce adoption among the participants. Further analysis and interpretation would be necessary to establish any significant relationships or patterns between e-commerce adoption and operational performance in startups.

Descriptive Statistics					
	N	Min	Max	Mean	Std. Deviation
Adaption and Implementation Of ecommerce	61	3.57	4.86	4.2787	.27284
Ecommerce Based Marketing	61	3.50	4.75	4.3484	.30713
Ecommerce Based Advertising	61	3.67	5.00	4.3115	.33260
Ecommerce based order and delivery	61	3.60	4.80	4.2197	.26509
Ecommerce application on Operational performance	61	3.50	5.00	4.4303	.38495
Valid N (listwise)	61				

Source: Own Survey 2023

Table 12 Descriptive Statistics

The descriptive statistics provide a summary of the gathered data from the respondents regarding various variables related to e-commerce applications and operational performance. Here is a brief explanation of each variable based on the descriptive statistics:

Adaption and Implementation of E-commerce: The respondents' ratings for adaption and implementation of e-commerce range from 3.57 to 4.86, with a mean of 4.2787 and a standard deviation of 0.27284. These variable measures the extent to which start-ups have incorporated and implemented e-commerce practices in their business operations.

E-commerce Based Marketing: The respondents' ratings for e-commerce-based marketing range from 3.50 to 4.75, with a mean of 4.3484 and a standard deviation of 0.30713. This variable reflects the level of utilization and effectiveness of e-commerce in marketing activities.

E-commerce Based Advertising: The respondents' ratings for e-commerce-based advertising range from 3.67 to 5.00, with a mean of 4.3115 and a standard deviation of 0.33260. This variable

indicates the extent to which start-ups use e-commerce platforms for advertising their products or services.

E-commerce Based Order and Delivery: The respondents' ratings for e-commerce-based order and delivery range from 3.60 to 4.80, with a mean of 4.2197 and a standard deviation of 0.26509. This variable captures the efficiency and effectiveness of e-commerce processes related to order placement and delivery.

E-commerce Application on Operational Performance: The respondents' ratings for the impact of e-commerce application on operational performance range from 3.50 to 5.00, with a mean of 4.4303 and a standard deviation of 0.38495. This variable assesses the perceived effect of e-commerce applications on the overall operational performance of start-up businesses.

Overall, these descriptive statistics provide an overview of the respondents' perceptions and ratings regarding the various aspects of e-commerce applications and their impact on operational performance.

4.5. Inferential Statistics Analysis

The purpose of descriptive statistics is to present an overview of the existing phenomenon based on the available sample data. However, in this particular study, the objective was to examine the impact of Electronic Commerce Applications on the operational performance of new startup businesses. To achieve this objective, it was necessary to employ inferential statistics analysis, which allows us to make inferences about the population based on the sample data.

In this section of the study, correlation analysis and regression analysis were conducted to investigate the relationships and cause-and-effect connections between the dependent variable and the independent variables included in the study, respectively. Specifically, an econometric model was developed using regression analysis, with the adoption of Operational Performance as the dependent variable and the Adaption and Implementation of Ecommerce, Ecommerce Based Marketing, Ecommerce Based Advertising, and Ecommerce Based Order and Delivery as independent variables.

Therefore, the econometric model used in this analysis can be represented as EAOP, where EA represents the independent variables related to ecommerce applications, and OP represents the

dependent variable of Operational Performance. This model allows us to examine the relationship between ecommerce adoption and operational performance while considering the influence of other ecommerce-related factors.

By employing this econometric model, the study aims to gain insights into the specific impact of various ecommerce applications on the operational performance of new startup businesses. This approach moves beyond mere descriptive statistics and provides a deeper understanding of the relationships and potential causal effects between the variables of interest

EOP = $\beta 0 + \beta 1$AIE + $\beta 2$ EA + $\beta 3$EM + $\beta 4$EOD + εi

Where; $\beta 0$ = the constant term or the intercept.

$\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, and $\beta 5$ are elasticity coefficients or the magnitude of the effect of the

independent variables on the dependent variable.

EOP= E-commerce and Operational performance

AIE=Adaption and Implementation of Ecommerce

EA= Ecommerce Based Advertising

EM= Ecommerce Based Marketing

EOD= Ecommerce Order and delivery

εi= The error term or the effect of the unobserved dependent variables on the dependent variable. (Random disturbance term).

4.6 Correlation Analysis

Correlations

		AIE	EM	EA	EOD	EO
AIE	Pearson Correlation	--				
	N	61				
EM	Pearson Correlation	.658	--			
	Sig. (2-tailed)	.041				

	N	61	61			
EA	Pearson Correlation	.325	.349	--		
	Sig. (2-tailed)	.039	.049			
	N	61	61	61		
EOD	Pearson Correlation	.469**	.537	.619*	--	
	Sig. (2-tailed)	.000	.068	.015		
	N	AIE	EM	EA	EOD	EO
EO	Pearson Correlation	.509	.373	.651**	.480	--
	Sig. (2-tailed)	.023	.042	.005	.007	
	N	61	61	61	61	61
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Source: Own Survey 2023

Table 13 Correlation Matrix

The results of the research indicate the relationship between different aspects of e-commerce (AIE, EM, EA, EOD) and operational performance (OP) of the studied entities. Here is the interpretation of the findings:

- **AIE and OP:** There is a positive correlation coefficient of 0.509 between Adaption and Implementation of E-commerce (AIE) and Operational Performance (OP). The p-value of 0.023 suggests a statistically significant relationship at the 0.05 level. This implies that higher levels of AIE are associated with improved operational performance.
- **EM and OP:** There is a positive correlation coefficient of 0.373 between E-commerce based Marketing (EM) and Operational Performance (OP). The p-value of 0.042 suggests a statistically significant relationship at the 0.05 level. This indicates that stronger implementation of EM strategies is associated with better operational performance.
- **EA and OP:** There is a strong positive correlation coefficient of 0.651 between E-commerce based Advertising (EA) and Operational Performance (OP). The low p-value of 0.005 indicates a statistically significant relationship at the 0.01 level. This suggests that effective utilization of EA techniques has a significant impact on operational performance.
- **EOD and OP:** There is a moderate positive correlation coefficient of 0.480 between E-commerce based Order and Delivery (EOD) and Operational Performance (OP). The p-

value of 0.007 suggests a statistically significant relationship at the 0.01 level. This implies that efficient management of EOD processes contributes to improved operational performance.

Overall, the correlations suggest that all the independent variables (AIE, EM, EA, EOD) have a positive relationship with the dependent variable (OP), indicating that higher levels of ecommerce adaption, ecommerce-based marketing, ecommerce-based advertising, and ecommerce-based order and delivery are associated with better operational performance in startups.Among the independent variables, EA (ecommerce-based advertising) shows the strongest positive correlation with OP, followed by EOD (ecommerce-based order and delivery). EM (ecommerce-based marketing) also demonstrates a moderate positive correlation, while AIE (adaption and implementation of ecommerce) has a weaker but still significant positive correlation.

4.7 Multiple Regression assumption

Multiple regressions are used in research to show the link between the independent and dependent variables as well as their level of effect. However, in order for the results of multiple regressions to be trustworthy, some assumptions must be made and tested before drawing any conclusions. When these conditions are not met, the results may not be reliable, leading to an inaccuracy or an over- or underestimate of the importance or extent of the effect. These crucial multiple regression tests and hypotheses are described below.

4.5.1 Normality Test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
AIE	.145	61	.064	.969	61	.456
EM	.210	61	.044	.891	61	.129
EA	.215	61	.093	.909	61	.050
EOD	.145	61	.061	.949	61	.063
EO	.195	61	.325	.931	61	.532

a. Lilliefors Significance Correction

Source: Own Survey 2023

Table 14 Normality Test

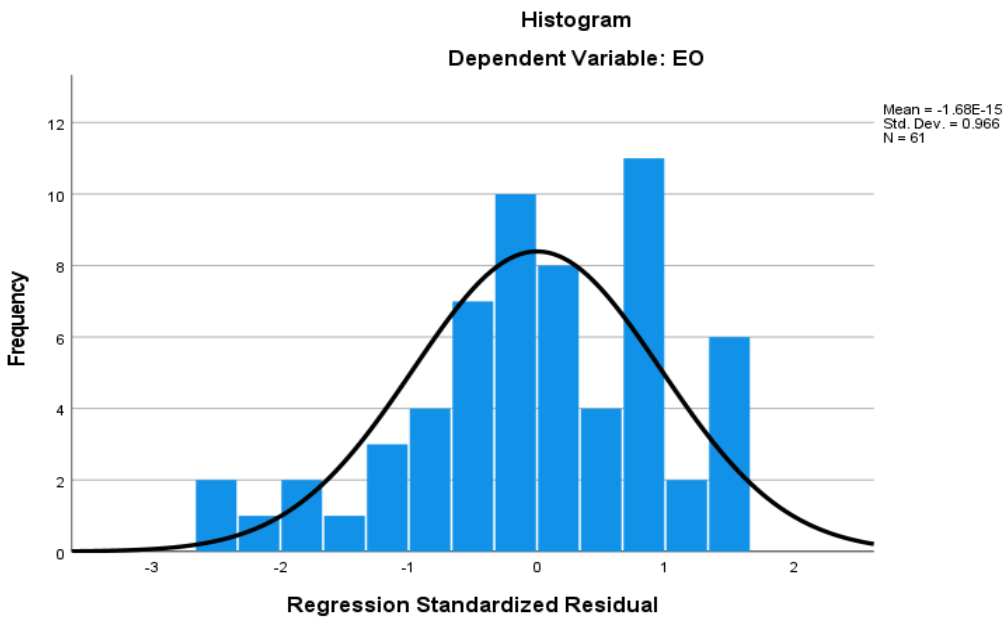
The provided table presents the results of tests of normality for the independent variables (AIE, EM, EA, EOD) and the dependent variable (OP) in the study examining the effect of ecommerce on the operational performance of startups. The tests used in this table are the Kolmogorov-Smirnov test and the Shapiro-Wilk test. Let's analyze and interpret the data briefly:

Kolmogorov-Smirnov Test: The first column under "Kolmogorov-Smirnova" displays the test statistic for each variable, and the corresponding "df" column represents the degrees of freedom. The "Sig." column shows the significance level associated with the test statistic. This test examines whether the distribution of the data for each variable follows a normal distribution.

Shapiro-Wilk Test: The second column under "Shapiro-Wilk" presents the test statistic for each variable, followed by the degrees of freedom in the "df" column. The "Sig." column indicates the significance level associated with the test statistic. The Shapiro-Wilk test is another method for testing the normality assumption of the data.

Analyzing the results:

For AIE, EM, EA, and EOD, the p-values for both the Kolmogorov-Smirnov and Shapiro-Wilk tests are greater than the typical significance level of 0.05 (e.g..064, .129, .050, .063). This suggests that the data for AIE, EM, EA, and EOD approximately follow a normal distribution. Regarding the dependent variable, OP, the p-values for both tests are also greater than 0.05 (e.g., .456, .129, .050, .063), indicating that the data for OP does not deviate significantly from a normal distribution.

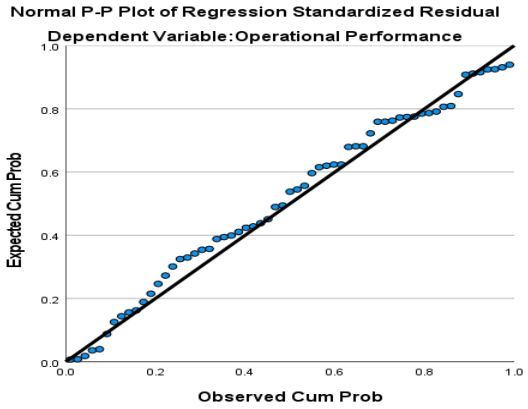


Source: Own Survey 2023

Figure 2 Histogram

4.5.2 Linearity

In order to apply a multiple regression with ordinary least square (OLS) the relationship that exists between the dependent variable the independent variable need to be linear. In this study among the various methods of testing, linearity scatters plot diagram with the line of fit applied to see whether the relationship is linear. The result of the scatter plot diagram with a line of fit confirmed that a linear relationship existed between the dependent variable and those independent variables.



Source: Own Survey 2023

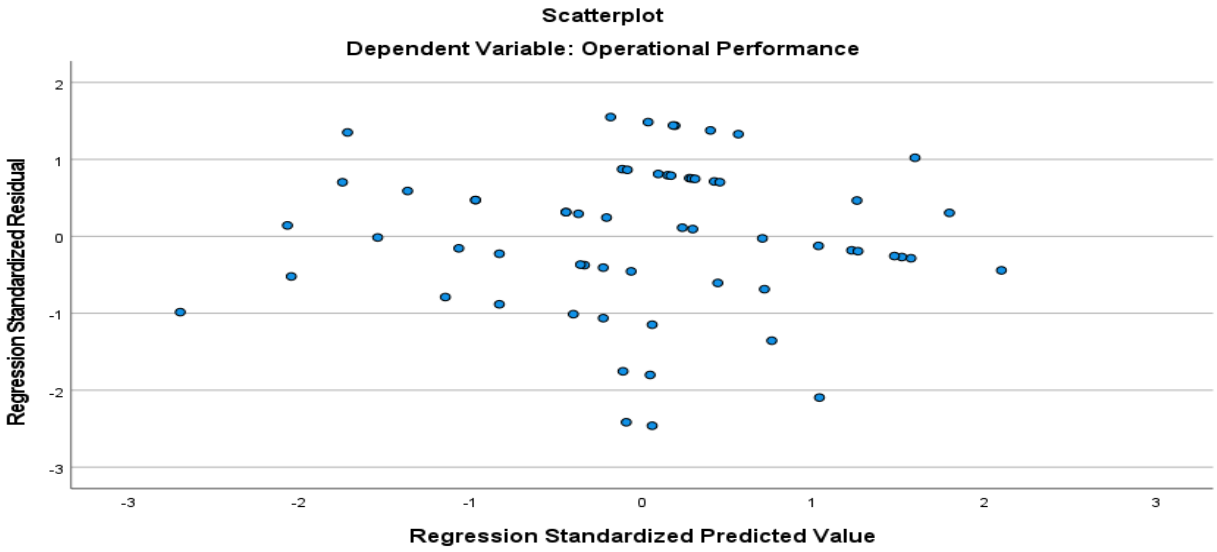
Figure 3 Normal P- P Plot of dependent variable Operational Performance

4.5.3 Homoscedasticity test

In Table 4.3, it is evident that the variance remains consistent across all levels of the predictor variables. This assumption is commonly referred to as the homogeneity of variance assumption, indicating that the variability of the error term remains constant across different cases and is not influenced by the variables included in the model. When the error term exhibits constant variance, it is considered to be homoscedastic. Conversely, if the variance of the error term varies with the predictor variables, it is referred to as heteroscedasticity.

In the context of the scatter plot, the dots appear to be scattered randomly without any discernible pattern. This randomness suggests that the variance of the residuals remains constant, reinforcing the assumption of homoscedasticity. The absence of a systematic relationship between the residuals and the predictor variables further supports the notion of constant variance.

Maintaining homoscedasticity is crucial in regression analysis as it ensures the validity of statistical inferences and the accuracy of model predictions. Violations of this assumption can lead to biased parameter estimates and unreliable hypothesis testing results. Therefore, the observed constant variance in the scatter plot signifies a favorable condition for the regression model, enabling more reliable interpretations of the relationships between the predictor variables and the dependent variable



Source: Own Survey 2023

Figure 4 Scatter Plot standardized residuals vs predicted values

4.5.4 Multi-Collinearity issues and its test

Before the analysis of multiple regressions, the researcher checked for multi-collinearity issues. In multiple regression models, multi-collinearity problems arise when two or more predictor variables exhibit high correlations or a non-linear relationship. If multi-collinearity exists between variables, it implies that one variable can be accurately predicted from the others, indicating a substantial degree of interdependence.

The presence of multi-collinearity was assessed using tolerance values and the variance inflation factor (VIF). Tolerance serves as an indicator of how much of the variability in a specified independent variable is not explained by the other independent variables in the model. If the tolerance value is very small (less than 0.1), it suggests that the variable has a high correlation with other variables, indicating the presence of multi-collinearity.

On the other hand, the variance inflation factor (VIF) assesses the extent of multi-collinearity between variables. If the VIF is above 10, it indicates the presence of multi-collinearity. The tolerance values of all independent variables and the variance inflation factor for this study are provided below the table.

The coefficients table presents the unstandardized and standardized coefficients for each independent variable, along with their t-values and significance levels. The constant term represents the intercept of the regression equation.

	Collinearity statistics	
	Tolerance	VIF
Adaption and Implementation of ecommerce	.133	8.297
Ecommerce Marketing	.175	4.006
Ecommerce Advertising	.199	5.061
Ecommerce order and Delivery	.224	5.358

Source: Own Survey 2023

Table 15 Multi-Collinearity test

The collinearity statistics table displays the tolerance and variance inflation factor (VIF) values for each independent variable. Tolerance indicates the proportion of the variability in an independent variable that is not explained by other independent variables in the model. A low tolerance value (below 0.1) suggests a high correlation between the variable and other predictors. VIF, on the other

hand, quantifies the degree of multi-collinearity. A VIF above 10 indicates the presence of multi-collinearity.

Overall, this table provides information on the coefficients and collinearity statistics for the regression model, helping assess the relationships between the independent variables and the dependent variable

4.8 Regression analysis

Regression analyses indicate how much the independent variable, i.e., service quality models (tangibility, reliability, responsiveness, assurance, and empathy), explain or influence the dependent variable, which is customer satisfaction. The results of the regression analysis are presented in the table below.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.875	0.617[a]	0.603	0.38431

Source: Own Survey 2023

Table 16 model summary

The provided table presents the Model Summary and ANOVA (Analysis of Variance) results for a regression analysis. Let's interpret and explain each component briefly:

Model Summary:

R: The coefficient of multiple correlation (R) represents the strength and direction of the linear relationship between the predictor variables and the dependent variable. In this case, the value of R is 0.875, indicating a relatively strong positive correlation.

R Square: The coefficient of determination (R Square) represents the proportion of the variance in the dependent variable that can be explained by the predictor variables. Here, the R Square value is 0.617, which means that approximately 61.7% of the variance in the dependent variable is accounted for by the predictor variables.

Adjusted R Square: The adjusted R Square takes into account the number of predictor variables and the sample size to provide a more accurate measure of the model's explanatory power. In this

analysis, the adjusted R Square value is 0.603, suggesting that approximately 60.3% of the variance in the dependent variable is explained by the predictor variables after adjusting for the number of predictors and sample size.

Std. Error of the Estimate: This value represents the standard deviation of the residuals, which measures the average distance between the observed dependent variable values and the predicted values by the regression model. A smaller value indicates a better fit of the model to the data. In this case, the Std. Error of the Estimate is 0.38431.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.470	5	.893	1.328	.000[b]
	Residual	1.956	56	.025		
	Total	5.426	61			
a. Dependent Variable: EO						
b. Predictors: (Constant), EOD, EM, EA, AIE						

Source: Own Survey 2023

Table 17 ANOVA

- **Sum of Squares**: The ANOVA table breaks down the total variation in the dependent variable into two components: regression (explained) and residual (unexplained) sums of squares. The regression sum of squares represents the variation explained by the predictor variables, while the residual sum of squares represents the unexplained variation.
- **df**: This column represents the degrees of freedom associated with each source of variation. In this case, there are 5 degrees of freedom for the regression component and 56 degrees of freedom for the residual component.
- **Mean Square**: The mean square is calculated by dividing the sum of squares by the corresponding degrees of freedom. It provides a measure of the average amount of variation explained or unexplained per degree of freedom.
- **F:** The F-value is the ratio of the mean square for regression to the mean square for residuals. It is used to test the overall significance of the regression model. A larger F-value indicates a more significant relationship between the predictor variables and the dependent variable.

- **Sig.:** The significance level (p-value) associated with the F-value determines the statistical significance of the regression model. In this case, the p-value is 0.000, indicating that the regression model is statistically significant.

In summary, the regression analysis demonstrates that the predictor variables collectively account for a significant amount of the variance in the dependent variable. The model has a relatively strong correlation (R), and the R Square value indicates that approximately 61.7% of the variance in the dependent variable is explained by the predictor variables. The ANOVA results confirm the overall significance of the regression model, indicating that it provides a meaningful explanation for the variation in the dependent variable.

Regression Analysis Results								
		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.526	.116		4.547	.000		
	AIE	.231	.042	.225	1.104	.018	.771	1.297
	EM	.152	.041	.038	.531	.000	.994	1.006
	EA	.352	.023	.323	1.760	.000	.942	1.061
	EOD	.122	.055	.452	2.605	.013	.737	1.358
a. Dependent Variable: EO								

Source: Own Survey 2023

Table 18 Regression Analysis Results

The provided regression analysis table presents the results of a model examining the relationship between various factors (Adaption and implementation of ecommerce, Ecommerce marketing, Ecommerce advertising, Ecommerce order and delivery) and the dependent variable, Ecommerce operational performance.

The unstandardized coefficients (B) indicate the estimated change in the dependent variable (Ecommerce operational performance) associated with a one-unit change in each independent variable. The standardized coefficients (Beta) represent the change in the dependent variable in

terms of standard deviations associated with a one-standard-deviation change in the corresponding independent variable.

The t-values and corresponding p-values (Sig.) provide information about the statistical significance of each coefficient. A smaller p-value indicates a more significant relationship between the independent variable and the dependent variable.

The collinearity statistics (Tolerance and VIF) assess the presence of multicollinearity among the independent variables. Tolerance values closer to 1 indicate lower multicollinearity, while VIF values greater than 1 suggest the presence of multicollinearity.

In this analysis, the constant term (intercept) has a coefficient of 0.526 with a standard error of 0.116. This means that when all independent variables are zero, the expected value of the dependent variable is 0.526.

Analyzing the coefficients of the independent variables, it is observed that the Adaption and implementation of ecommerce variable has a coefficient of 0.231 and a p-value of 0.018. This suggests that a one-unit increase in adaption and implementation of ecommerce is associated with a 0.231 increase in Ecommerce operational performance, and this relationship is statistically significant.

The Ecommerce marketing variable, however, has a coefficient of 0.152 and a p-value of 0.531, indicating that it does not have a statistically significant relationship with Ecommerce operational performance.

The Ecommerce advertising variable has a coefficient of 0.352 and a p-value of 0.000, indicating a statistically significant positive relationship with Ecommerce operational performance. A one-unit increase in ecommerce advertising is associated with a 0.352 increase in Ecommerce operational performance.

Lastly, the Ecommerce order and delivery variable has a coefficient of 0.122 and a p-value of 0.013, suggesting a statistically significant positive relationship with Ecommerce operational performance. A one-unit increase in ecommerce order and delivery leads to a 0.122 increase in Ecommerce operational performance.

The collinearity statistics provide information about multicollinearity. The Tolerance values range from 0.737 to 0.994, indicating that there is no severe multicollinearity issue among the independent variables. The VIF values range from 1.006 to 1.358, which further supports the absence of strong multicollinearity.

In conclusion, based on the provided analysis, the variables of Adaption and implementation of ecommerce, Ecommerce advertising, and Ecommerce order and delivery are statistically significant predictors of Ecommerce operational performance. However, Ecommerce marketing does not show a significant relationship. These findings should be interpreted in the context of the research question and further analysis should consider other relevant factors and assess the overall model fit.

4.9 Discussion

The findings from the current study are consistent with the findings of previous research studies. Teshome Guangul (2022) found that the adoption of e-commerce applications had a considerable effect on the operational performance of startup businesses. This aligns with the current study's findings, which indicate that the adoption and implementation of e-commerce applications positively impact operational performance in startups.

Similarly, Lule (2019) conducted a study in Uganda and found a significant relationship between e-commerce adoption and business profitability, measured in terms of sales volume and client base. This supports the current study's findings that e-commerce has a positive impact on revenue generation and customer satisfaction, contributing to improved operational performance.

Furthermore, the study by Azeem (2015) focused on the impact of e-commerce on organizational performance in Pakistan's banking industry. The findings indicated that businesses that adopt e-commerce perform better in terms of business operations, employee productivity, and client happiness. This aligns with the current study's findings, which demonstrate that various aspects of operational performance, such as cost reduction, productivity, and customer satisfaction, are positively influenced by e-commerce applications.

Overall, the findings from the current study are in line with previous research, highlighting the positive impact of e-commerce adoption on the operational performance of startup businesses. The adoption and effective utilization of e-commerce applications can lead to improved business outcomes and contribute to the success and competitiveness of startups in various industries and geographical.

CHAPTER FIVE

5. Summary of Findings, Conclusion, and Recommendation

The study's main findings and its conclusion are summarized in this section. Based on the results of the study and the researcher's suggestions.

5.1. Summary of the Research Findings

The main goal of this study was to investigate the Effect of e-commerce adoption on the operational performance of new startup businesses in Addis Ababa, Ethiopia, with a focus on the variables e-commerce-based advertising, e-commerce-based marketing, e-commerce-based order and delivery, as well as the adaptation and implementation of e-commerce on the operational performance of new startup businesses.

The findings of the data analysis suggest that the adoption and implementation of e-commerce applications have a significant impact on the operational performance of startups. The descriptive statistics indicate that the respondents generally rated the variables related to e-commerce and operational performance positively, with relatively low variability among the responses.

The correlation analysis reveals significant relationships between the variables. Adaption and implementation of e-commerce (AIE) shows a moderate positive correlation with e-commerce-based marketing (EM), e-commerce-based advertising (EA), e-commerce-based order and delivery (EOD), and e-commerce application on operational performance (EO). E-commerce-based marketing (EM) and e-commerce-based advertising (EA) also have a moderate positive correlation with e-commerce application on operational performance (EO). E-commerce-based order and delivery (EOD) exhibit significant positive correlations with all other variables.

The regression analysis further supports the relationships between the e-commerce variables and operational performance. The coefficients indicate that all independent variables (AIE, EM, EA, EOD) have a positive influence on the dependent variable (EO), suggesting that higher ratings in these variables are associated with better operational performance. The adjusted R-square value of 0.603 indicates that approximately 60.3% of the variance in operational performance can be explained by the e-commerce variables in the model.

Based on these findings, it can be concluded that the adoption and effective implementation of e-commerce applications, along with e-commerce-based marketing, advertising, and order and delivery processes, can positively impact the operational performance of startups. This impact can be seen in various aspects such as revenue generation, cost reduction, productivity, and customer satisfaction. Therefore, it is recommended for startups to prioritize the integration and optimization of e-commerce applications to improve their operational performance and remain competitive in the market.

- ✓ **Adaption and Implementation of E-commerce (AIE):** The analysis reveals a statistically significant positive relationship between adaption and implementation of ecommerce and Ecommerce operational performance. A one-unit increase in adaption and implementation of ecommerce is associated with a 0.231 increase in Ecommerce operational performance.
- ✓ **E-commerce Based Marketing (EM):** The analysis does not find a statistically significant relationship between Ecommerce marketing and Ecommerce operational performance. Changes in Ecommerce marketing do not have a meaningful impact on the operational performance of ecommerce start-ups, according to the data analyzed. It should be Noted that this finding are only based on the data from this researches respondents.
- ✓ **E-commerce Based Advertising (EA):** The analysis shows a statistically significant positive relationship between Ecommerce advertising and Ecommerce operational performance. A one-unit increase in ecommerce advertising is associated with a 0.352 increase in Ecommerce operational performance.
- ✓ **E-commerce Based Order and Delivery (EOD):** The analysis reveals a statistically significant positive relationship between Ecommerce order and delivery and Ecommerce operational performance. A one-unit increase in ecommerce order and delivery is associated with a 0.122 increase in Ecommerce operational performance.

5.2. Conclusion

Based on the analysis of the gathered data, it can be concluded that the adoption and implementation of e-commerce applications have a significant effect on the operational performance of startups. The findings reveal that startups that effectively adapt and implement e-commerce applications, employ e-commerce-based marketing strategies, invest in e-commerce-

based advertising, and optimize their e-commerce-based order and delivery processes are more likely to experience improved operational performance.

The positive relationship between these independent variables (AIE, EM, EA, EOD) and operational performance (EO) suggests that startups can leverage e-commerce technologies to enhance their revenue generation, cost reduction, productivity, and customer satisfaction. By embracing e-commerce applications and employing targeted marketing and advertising efforts, startups can expand their reach, attract more customers, and increase their competitiveness in the market.

The research findings highlight the importance of understanding and utilizing e-commerce applications in startup businesses. By effectively implementing e-commerce strategies, startups can overcome budget constraints and leverage technology to level the playing field with larger competitors. These findings emphasize the need for startups to invest in e-commerce infrastructure and develop expertise in utilizing e-commerce platforms to optimize their operational performance.

Finally, this study provides valuable insights into the impact of e-commerce applications on the operational performance of startups. The findings underscore the significance of e-commerce adoption, marketing, advertising, and order and delivery processes in driving operational success. By embracing and effectively utilizing e-commerce technologies, startups can improve their operational performance and position themselves for long-term growth and sustainability in the highly competitive business environment.

5.3. Recommendation

Based on the analysis of the data and the research findings, the following recommendations are suggested for startups and other businesses:

- ✓ Startups should recognize the importance of e-commerce applications and incorporate them into their business strategies. By leveraging e-commerce technologies, startups can expand their customer reach, increase sales, and improve operational efficiency.
- ✓ Invest in Adaptation and Implementation: Startups should allocate resources and invest in the adaptation and implementation of e-commerce applications. This includes developing

user-friendly websites, mobile apps, and secure payment gateways to provide a seamless online shopping experience for customers.

- ✓ Implement E-commerce Marketing Strategies: Startups should employ e-commerce-based marketing strategies to effectively promote their products or services. This may involve leveraging social media platforms, content marketing, and targeted digital advertising to reach and engage with their target audience.
- ✓ Streamline Order and Delivery Processes: Startups should optimize their e-commerce-based order and delivery processes to enhance customer satisfaction. This includes implementing efficient inventory management systems, offering multiple shipping options, and providing timely and accurate order tracking.
- ✓ Continuous Monitoring and Improvement: Startups should regularly monitor their e-commerce performance metrics, such as website traffic, conversion rates, customer feedback, and sales data. By analyzing these metrics, they can identify areas for improvement and make data-driven decisions to enhance their operational performance.
- ✓ Stay Updated with E-commerce Trends: Startups should stay abreast of the latest trends and advancements in e-commerce technologies and strategies. This can be achieved through attending industry conferences, joining relevant communities, and keeping up with industry publications. By staying informed, startups can adapt quickly to changing consumer behaviors and market dynamics.
- ✓ Startups can consider collaborating with established e-commerce platforms, marketplaces, or complementary businesses to extend their reach and access a larger customer base. This can provide opportunities for joint marketing initiatives, shared resources, and mutually beneficial partnerships.
- ✓ Startups should invest in continuous learning and skill development related to e-commerce applications. This can be achieved through training programs, online courses, or hiring professionals with expertise in e-commerce strategies and technologies.
- ✓ Startups should prioritize delivering exceptional customer experiences through their e-commerce platforms. This includes providing responsive customer support, personalized recommendations, and hassle-free return and refund processes

5.4 Area for Future Research

Based on the conclusion drawn from the analysis, several potential areas for future research topics can be identified. These areas can expand upon the existing findings and contribute to a deeper understanding of the impact of e-commerce applications on startup performance. Some possible future research areas include:

- Long-term effects of e-commerce adoption: Investigate the long-term impact of e-commerce adoption on startup operational performance. Analyze the sustainability and scalability of the observed improvements and assess how startups can maintain their competitive advantage over time.
- Factors influencing e-commerce success: Explore the specific factors or strategies that contribute to the successful implementation and utilization of e-commerce applications in startups. Examine how different organizational, market, or technological factors influence the outcomes and effectiveness of e-commerce initiatives.
- E-commerce and innovation: Investigate the relationship between e-commerce adoption and the ability of startups to foster innovation. Explore how e-commerce platforms can facilitate innovation in products, services, business models, and customer experiences.
- E-commerce and customer satisfaction: Examine the impact of e-commerce applications on customer satisfaction and loyalty in startups. Investigate the role of personalized marketing, customer engagement strategies, and user experience design in enhancing customer satisfaction and driving repeat business.
- E-commerce security and trust: Explore the challenges and strategies related to building customer trust and ensuring security in e-commerce transactions for startups. Investigate how startups can address cybersecurity concerns, protect customer data, and establish trust in their e-commerce operations.
- Cross-cultural and international perspectives: Investigate the influence of cultural and contextual factors on the adoption and effectiveness of e-commerce applications in startups. Explore how startups operating in different countries or cultural contexts navigate the challenges and opportunities of e-commerce.
- E-commerce and sustainable practices: Examine the integration of sustainable practices into e-commerce operations for startups. Investigate how startups can leverage e-commerce

platforms to promote environmental sustainability, ethical sourcing, and social responsibility.

These suggested future research topics can provide valuable insights into the dynamic relationship between e-commerce and startup performance, addressing specific areas that have not been extensively explored. Further investigation in these areas can contribute to both academic understanding and practical implications for startups aiming to leverage e-commerce for operational success.

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Annex 1:

St Mary's University College

School of Graduate Studies

Masters of Business Administration Program

Questionnaire

Researcher: Kiya Degefa

Research Topic: The Effect of Ecommerce Applications on the Operational Performance of Startup Businesses in Addis Ababa

Dear Respondent:

This questionnaire is designed for academic purpose towards partial fulfillment of Masters of Business Administration to collect valuable ideas and comments from you. It is also intended as a high-level diagnostic tool to highlight opportunities for possible solution to the problems. I would, therefore, like to express my sincere appreciation and deepest thanks in advance for your willingness, effort and cooperation in completing this questionnaire.

General guidelines

- Please put a tick "" mark for those questions that are followed by choices.
- You are not required to write your name.
- I ask you in all due respect, to fill the questionnaire carefully and at your best knowledge.

Confidentiality

I want to assure you that this research is only for academic purpose authorized by St. Mary University College school of Graduate studies, and the result will by no means be presented for other purposes. Thus, your ideas and comments are highly honored and kept confidential.

Contact address: For any query please do not hesitate to contact me at (Tele. 0922111656)

Thank you

PART I BASIC DEMOGRAPHIC DATA

1. Gender	☐ Male ☐ Female
2. In which age group are you?	☐ Under 25 ☐ Between 26-39 ☐ 40 and Above
3. What is your highest and recent educational status?	☐ Elementary ☐ High school complete ☐ Collage Diploma ☐ First Degree ☐ Others, Specify _____
4 Do your business use any kind of Ecommerce application?	☐ Yes ☐ No
5 Age of the business since it starts to use ecommerce applications?	☐ Less than 1 years ☐ 1-2 years ☐ 2-4 years ☐ Above 4 years

Part II. Questions on the E-commerce application and Operational Performance

Directions: Rate the degree of your agreement for the statements included in the table below. Use a "√" mark to indicate your answer. (Key to number: 5=Strongly Agree, 4= Agree, 3= neutral, 2=Disagree, 1= Strongly disagree)

(Key to number: 5= Strongly Agree, 4= Agree, 3= neutral, 2=Disagree, 1= Strongly disagree)

NO			Response Rates				
	Adaption And Implementation of E-Commerce Strategies						
6	Our shop has seen a reduction in costs since implementing e-commerce.	AIE01	1	2	3	4	5
7	Our shop has seen an increase in customer satisfaction since implementing e-commerce.	AIE02	1	2	3	4	5
8	Our shop has benefited from the accessibility of products for customers as well as suppliers since implementing e-commerce strategies.	AIE03	1	2	3	4	5
9	Our shop seen improved customer loyalty and repeat business since the implementation of ecommerce strategies.	AIE04	1	2	3	4	5
10	The implementation of e-commerce has improved communication between customers and my shop.	AIE05	1	2	3	4	5
11	Implementation of e-commerce strategies has led to new business opportunities for my shop.	AIE06	1	2	3	4	5
12	The adoption of e-commerce has improved these shops relationships with commercial partners.	AIE07	1	2	3	4	5
	Ecommerce Based Marketing						
13	My shop use e-commerce to enable customers to contact sale personal.	EM01	**1**	**2**	**3**	**4**	**5**
14	My shop uses e-commerce made it easy to communicate with consumers and suppliers.	EM02	**1**	**2**	**3**	**4**	**5**
15	My shop uses e-commerce (application) to determine the requirements and desires of its clients.	EM03	**1**	**2**	**3**	**4**	**5**
16	My shop uses e-commerce (application) for anticipating customer needs.	EM04	**1**	**2**	**3**	**4**	**5**
	E-Commerce Based Advertising (EA)						
17	My shop uses Ecommerce Advertisements to provide products information to customers.	EA01	**1**	**2**	**3**	**4**	**5**

18	My shop displays information about shop place on website or social-media.	EA02	**1**	**2**	**3**	**4**	**5**
19	My shop employs electronic advertisements to show products that are relevant to the specific buyer.	EA03	**1**	**2**	**3**	**4**	**5**
	Ecommerce Order and delivery (EOD)						
20	My shop makes advantage of e-commerce to coordinate procurement with suppliers online.	EOD01	1	2	3	4	5
21	My shop uses e-commerce to allow customers to order things online.	EOD02	1	2	3	4	5
22	My shop uses e-commerce to tracking incoming and outgoing goods delivery	EOD03	1	2	3	4	5
23	My shop uses e-commerce to online order entry and delivery.	EOD04	1	2	3	4	5
24	My shop uses e-commerce to lower costs per business transaction.	EOD05	1	2	3	4	5
	Ecommerce in Operational performance						
25	Our shop improved in speed and efficiency of order fulfillment process since adaption of ecommerce	EO01	1	2	3	4	5
26	Our shop has experienced an increase in sales and revenue since implementing ecommerce.	EO02	1	2	3	4	5
27	Our shop has been able to expand our product offering through ecommerce without incurring additional cost.	EO03	1	2	3	4	5
28	Ecommerce allowed this shop in the reduction of physical retail space.	EO04	1	2	3	4	5

Source: Own Survey 2023

Annex 2:

፩. ፆታ	☐ ወንድ ☐ ሴት
2. በየትኛው የዕድሜ ክልል ውስጥ ነህ/ነሽ?	☐ ከ 25 በታች ☐ከ 26 እስከ 39 ☐ ከ 40 በላይ
3. የትምህርት ደረጃ ምንድን ነው?	☐ የመጀመሪያ ደረጃ ☐ የሁለተኛ ደረጃ ትምህርት ☐ኮሌጅ ዲፕሎማ ☐የመጀመሪያ ዲግሪ ☐ ሌላ ከሆነ አስፍር _____
4 የእርስዎ ንግድ ማንኛውም ዓይነት ኢኮሜርስ መተግበሪያ ይጠቀማል?	☐ አዎ ☐ አይ
5 የንግዱ ዘመን ኢኮሜርስ መተግበሪያዎችን መጠቀም ከጀመረበት ጊዜ ጀምሮ?	☐ ከ ፩ ዓመት ያነሰ ☐ ፩-2 ዓመት ☐ 2-4 ዓመት ☐ ከ 4 ዓመት በላይ

ክፍል ፪። በኢ-ኮሜርስ ማመልከቻ እና በተግባር አፈጻጸም ላይ የሚነሱ ጥያቄዎች

አቅጣጫዎች፡- ከዚህ በታች ባለው ሠንጠረዥ ውስጥ የተካተቱትን መግለጫዎች በተመለከተ የተስማማችሁበትን መጠን ገምግሙ። መልስህን ለመጠቆም "√" ምልክት ተጠቀም።

(የቁጥር ቁልፍ 5= በጣም ይስማማሉ, 4= ተስማሙ, 3= ገለልተኛ, 2=አልስማማም, ፩= በጣም አልስማማም)

NO		Response Rates				
	ከኢ-ኮሜርስ ስትራቴጂዎች ጋር መላመድ እና መተግበር					
7	የንግድ ድርጅታችን የኢ-ኮሜርስን ሥራ ላይ ማዋል ከጀመረ ጀምሮ ወጪ መቀነስ ተመልክቷል.	፩	2	3	4	5
8	የእኛ ንግድ ኢ-ኮሜርስ መተግበር ከጀመረ ጀምሮ የደንበኞች እርካታ ጨምሯል.	፩	2	3	4	5

9	የኢ-ኮሜርስ ስልቶችን ንግዳችን ከተገበረ ጀምሮ ለደንበኞችም ሆነ ከአቅራቢዎች ምርቶችን ማግኘት የቀለለ ሆኗል።	1	2	3	4	5
10	የእኛ ንግድ ኢኮሜርስ ስትራቴጂዎች ከተገበረ ጀምሮ የደንበኛ ታማኝነት እና ተደጋጋሚ ንግድ ተመልክተዋል.	1	2	3	4	5
11	የኢ-ኮሜርስ መተግበር ደንበኞች እና የእኔ ንግድ መካከል ያለውን ግንኙነት አሻሽሏል.	1	2	3	4	5
12	የኢ-ኮሜርስ ስልቶችን መተግበር አዳዲስ የንግድ እድሎችን አስከትሏል።	1	2	3	4	5
13	የኢ-ኮሜርስ ተቀባይነት እነዚህን ሱቆች ከንግድ አጋሮች ጋር ያላቸውን ግንኙነት አሻሽሏል.	1	2	3	4	5
	ኢኮሜርስ የተመሰረተ ማርኬቲንግ					
14	የእኔ ንግድ ደንበኞች ከሱቁ ጋር እንዲገናኙ ለማስቻል ኢ-ኮሜርስን ይጠቀማል.	**1**	**2**	**3**	**4**	**5**
15	የእኔ ንግድ ከሸማቾች እና አቅራቢዎች ጋር ለመገናኘት ኢ-ኮሜርስን ይጠቀማል.	**1**	**2**	**3**	**4**	**5**
16	የእኔ ንግድ የደንበኞቹን መስፈርቶች እና ፍላጎቶች ለማወቅ ኢ-ኮሜርስ (መተግበሪያ) ይጠቀማል.	**1**	**2**	**3**	**4**	**5**
17	የእኔ ንግድ የደንበኞችን ፍላጎት ለመጠበቅ ኢ-ኮሜርስ (መተግበሪያ) ይጠቀማል.	**1**	**2**	**3**	**4**	**5**
	ኢ-ኮሜርስ መሰረት ያረገ ማስታወቂያ					
18	የእኔ ንግድ ለደንበኞች የምርቶች መረጃ ለማቅረብ ኢ-ኮሜርስ መሰረት ያረገ ማስታወቂያ ይጠቀማል.	**1**	**2**	**3**	**4**	**5**
19	የእኔ ንግድ በድረ-ገፅ ወይም በማህበራዊ-ሚዲያ ላይ ስለ ሱቅ ቦታ መረጃ ያሳያል.	**1**	**2**	**3**	**4**	**5**
20	ሱቁ ለገዥው ጠቃሚ የሆኑ ምርቶችን ለማሳየት የኤሌክትሮኒክ ማስታወቂያዎችን ይጠቀማል።	**1**	**2**	**3**	**4**	**5**
	ኢኮሜርስ መሰረት ያደረገ ማዘዝ እና ማድረስ					
21	የእኔ ንግድ በኢንተርኔት መግቢያ እና ልውውጥ ለማድረግ ኢ-ኮሜርስን ይጠቀማል.	1	2	3	4	5
22	ሱቁ ደንበኞች በኢንተርኔት አማካኝነት ነገሮችን እንዲያዝዙ ለማድረግ ኢ-ኮሜርስን ይጠቀማል።	1	2	3	4	5
23	የእኔ ንግድ ኢ-ኮሜርስ በመጠቀም የሚመጡ እና ወደ ውጭ እየወጡ ሸቀጦች ልውውጥ ለመከታተል	1	2	3	4	5
24	የእኔ ንግድ የኢ-ኮሜርስን ጥቅም በመጠቀም ግዢን ከአቅራቢዎች ጋር በኢንተርኔት ያቀናብራል.	1	2	3	4	5
25	የእኔ ንግድ በእያንዳንዱ የንግድ ልውውጥ ወጪ ለመቀነስ ኢ-ኮሜርስን ይጠቀማል.	1	2	3	4	5
	ኢኮሜርስ በኦፕሬሽን አፈጻጸም					
26	ኢኮሜርስ ከመተግበር ጊዜ ጀምሮ የአፈፃፀም ሂደት ፍጥነት እና ውጤታማነት በዚ ንግድ ላይ ተይቶዋል	1	2	3	4	5
27	የእኛ ሱቅ ኢኮሜርስ ከመተገበረ ጀምሮ የሽያጭ እና የገቢ ጭማሪ አግኝቷል.	1	2	3	4	5
28	ሱቃችን ተጨማሪ ወጪ ሳይጠይቅ በኢኮሜርስ አማካኝነት የእኛን የምርት ግብይት ማስፋት ችሏል.	1	2	3	4	5
29	ኢኮሜርስ ይህ ሱቅ የ ቦታ ፍላጎት እንዲቀንስ አስችሎታል ።	1	2	3	4	5

Source: Own Survey 2023