ADDIS ABABA UNIVERSITY
COLLEGE OF COMMERCE

IT Service Management Effectiveness On Operational Efficiency In Ethiopia E-Commerce

By: YOHANNES HAYMANOT

A Thesis Submitted In Partial Fulfillment Of The Requirement For The Award Of A Master's Degree (MSc/MA) In Busness Information System

2024

Addis Ababa, Ethiopia

ADDIS ABABA UNVERSITY

COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE

DEPARTMENT OF BUSINESS ADMINISTRATION AND INFORMATION SYSTEMS

This is to certify that this thesis entitles as "IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce", submitted in partial fulfillment of requirement for Masters of Science (MSc) Degree in Business information systems, done by **Yohannes Haymanot** is an authentic work carried out by his under our guidance. The theme embedded in this thesis has been submitted earlier for the award of any degree or diploma in any other university to the best of knowledge.

Approved by Board of Examiners

Kuribachew Gizaw, Signature _____Date_____
(Advisor)

_____ Signature _____Date_____
Internal Examiner

_____ Signature _____Date_____
External Examiner
Chair of Department or graduate Program Coordination

Letter of Certification

This is to certify that Yohannes Haymanot has carried out his research project work under my supervision, on the topic of "IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce"**.** This work is original in its nature and it is suitable for Submission for the award of fulfillment of requirement for Masters of Science (MSc) Degree in Business information systems,

Kuribachew Gizaw (PhD) _____

(Advisor) Signature_____

Date_____

Declaration

I, Yohannes Haymanot, declare that the study entitled “IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce” is the result of my own effort in research undertaking. All information in this document has been obtained and presented in accordance with academic rules and ethical conduct. The study has not been submitted to any Degree or Diploma in any college or university. It is submitted for the award of fulfillment of requirement for Masters of Science (MSc) Degree in Business information systems, Lastly, I have fully cited, acknowledged and referenced all material and results that are not original to this work.

Name: YOHANNES HAYMANOT

Signature_____

Date_____

Acknowledgment

I would like to thank all individuals involved in this work. First and foremost, I would deep gratitude to God and all my families. Second, I would like to thank my advisor Kuribachew Gizaw (PhD)for all her advice towards better improvements of this thesis. Third, this thesis would never have been accomplished without the cooperation of all staff in the e-commerce organization which have been selected for this study . Therefore, I am deeply thanks all of them. Finally, I would like to express my deeply grateful to all my friends especially to all my families.

Contents

List of Table

List of Figure

List of acronyms

KPI	Key point indicator
MTTR	Mean Time to Resolve
COBIT	Control Objective for Information and related Technology
CSAT	Customer Satisfaction
CSI	Continual Service Improvement
CSR	Critical success factor
IT	Information Technology
ITIL	IT Infrastructure Library
ITSM	IT Service Management
PDCA	Plan-Do-Check- Act
SLA	Service Level Agreements
C2C	Customer to Customer
B2B	Business to business
B2C	Business to customer
TQM	Total Quality Management

Abstract

This research paper aims to Identify the IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce. In this study the effectiveness of IT service management (ITSM) on E commerce service operational efficiency in Ethiopia, the study only participates the B2B, C2C and B2C context of e-commerce organization, The study employ both descriptive and explanatory research design to explore and understand the causal relationship between IT Service Management (ITSM) practices and operational efficiency in Ethiopia e-commerce and investigates the impact of the IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce, using ITIL (Information Technology Infrastructure Library) framework as a guidance of impact on operational efficiency in the Ethiopian e-commerce service provider industry. From a sample of 27 companies, 10 were identified as utilizing the ITIL framework.To address the research objective, 100 respondents were selected from managers and staff at these 10 ITIL-adopting companies, using a purposive sampling approach. Participants were asked to complete a questionnaire, and the 100 valid responses were analyzed using SPSS 27 statistical software. This study explores the key factors influencing e-commerce operational efficiency through a multiple regression analysis. The model examines the relationships between five predictor variables and the dependent variable of operational efficiency. The predictors include the average e-commerce value metric, average customer income level, average problem resolution rate, average request fulfillment rate, and average customer satisfaction metric. The results indicate that the average e-commerce value metric and average customer income level are the strongest positive predictors of operational efficiency, with standardized regression coefficients of 0.573 and 0.381 respectively. This suggests that enhancing the perceived value of the e-commerce offering and targeting higher-income customer segments are crucial strategies for optimizing operational performance. the average problem resolution rate and average request fulfillment rate demonstrate statistically significant positive relationships with operational efficiency, emphasizing the importance of responsive, reliable e-commerce operations. Interestingly, the average customer satisfaction metric exhibits a negative ***association, hinting at potential tradeoffs between*** *maximizing customer experience and streamlining internal processes. These findings provide valuable insights for e-commerce businesses seeking to improve their operational efficiency.*

Key words: B2B, B2C, C2C, ITSM, ITIL, SPSS

CHAPTER ONE

1.1. Background of the study

E-commerce and IT Service Management (ITSM) are closely connected because effective ITSM helps ensure reliable and efficient operations for e-commerce businesses, which depend heavily on IT infrastructure and services ITSM frameworks, such as ITIL (Rohman et al., 2018).

In the current highly competitive digital business landscape, ITSM helps organizations become more efficient and responsive by streamlining operations and automating many service requests, which boosts employee productivity, improves customer experience, and results in greater overall user satisfaction (Stephen, 2023).

In this study, it will be utilizing the widely recognized ITIL framework, which stands for Information Technology Infrastructure Library to analyze ITSM Effectiveness on Operational Efficiency in Ethiopia E-Commerce'.

ITIL is a framework specifically designed for IT service management (ITSM), ITIL has gone through several revisions in its history, and the most recent version is ITIL version 4, which was released in 2019 (Kaseya, 2021), When conducting a study using the ITIL framework it is essential to see the point of the The ITIL Service Lifecycle, is a comprehensive framework for introducing ITIL principles into an organization (Danby, 2023) The ITIL Service Lifecycle is a comprehensive framework for introducing ITIL principles into an organization (Akkartal, 2022) .

ITIL Service Lifecycle consists of five stages and those are Service Strategy, Service Design, Service Transition, **Service Operation**, and Continual Service Improvement. These stages provide a structured and inclusive approach to managing IT services, aligning them with business needs and continuously improving their quality (Orand and Villarreal, 2011), this study will see the ITSM effectiveness on service operation efficiency in Ethiopia Electronic commerce which focuses on the stage of service operation in ITIL service life cycle The purpose of service operation is to coordinate and carry out the activities and processes required to deliver and manage services at agreed levels to business users and customers, commonly known as e-commerce refers to the buying and selling of goods and services over the internet (Yue, 2022) , ITIL (Information Technology Infrastructure

Library) is a framework for ITSM that provides a set of best practices for IT service management It can be used to assess an e-commerce business's readiness for service design, Transition and operation (Haryanti and Pribadi, 2019) . E-commerce is an area where ITSM can have a significant impact on business performance (Serrano et al., 2021) ITSM can have a positive impact on e-commerce operation efficiency by ensuring service availability, standardizing processes, improving customer satisfaction, and increasing financial contribution (Ronald, 2023) E-commerce in Ethiopia is still in its early stages, and there are several factors that affect its feasibility and readiness in the country (Singh and Sahu, 2022) ITSM mechanisms can help organizations manage their IT services effectively and efficiently, which is essential for e-commerce to be competitive in the market (Berihun and Teferi, 2021).

1.1.1. E-commerce in Ethiopia

E-commerce, in Ethiopia started gaining popularity during the 2010s. It was around 2018 when it really started to witness substantial growth. The Ethiopian government acknowledged the potential of e commerce as a driving force, for progress and took initiatives to foster its expansion.(Mishra and Tiruneh, 2020).

The emerging e-commerce industry in Ethiopia presents both challenges and opportunities (Nigatu and Atsbeha, 2021). One of the key challenges is the limited internet access and low digital literacy among the population (Nigussie, 2019). This hinders the widespread adoption of online shopping and transactions. Additionally, the lack of infrastructure, including reliable payment systems and delivery services, poses a significant hurdle for e-commerce growth in the country (Singh and Sahu, 2022) Another challenge is the limited legal and regulatory frameworks for e-commerce ,The absence of comprehensive laws and regulations specific to online transactions and consumer protection creates uncertainty and may discourage investment in the sector (Mebrate, 2020). Furthermore, the limited availability of locally produced goods and services for online sales restricts the variety of products that can be offered to consumers (Mulugeta, 2015).

However, among these challenges open several opportunities. The growing middle class in Ethiopia, coupled with increasing disposable income, presents a potential customer base for e-commerce (Nigussie, 2019). Mobile phones usage ,social media platforms , provides a platform for reaching and engaging with consumers (Singh and Sahu, 2022).

the online marketplace provides an opportunity for businesses to expand their reach and access new markets, both domestically and internationally (Nigatu and Atsbeha, 2021).

1.2. Statement of The Problem

The effectiveness of IT service management on operational efficiency in Ethiopian e-commerce organizations is a critical issue, Research indicates that information technology management practices play a significant role in achieving effective service delivery in the e-commerce industry(Mehmood, 2021).

IT service management plays a crucial role in enhancing operational efficiency within organizations By effectively managing IT services, businesses can streamline processes, improve service delivery, and optimize resource utilization(Pertanian et al., 2023). effectiveness of IT service management practices in e-commerce is crucial for optimizing operations and enhancing customer experience by Implementing IT service management practices ensures smooth functioning and reliability in online retail (Risberg and Jafari, 2022) .

Service operation is a crucial stage in the service lifecycle in ITSM, focusing on the effective and efficient operation of services, where the value of the service is realized and the organization's strategy is executed(Orand and Villarreal, 2011).

Service operation process involves principles of effective and efficient service operation, organizing service operation, roles and responsibilities of functions, and maintaining the service operation balance by focusing on achieving a balance between efficient service delivery and maintaining the required service quality by balancing the internal IT view (focused on technology components) with the external business view (focused on services experienced by users) by encompassing service operation processes which are event management, incident management, request fulfillment, problem management, and access management (Orand and Villarreal, 2011).

Service operation is vital to continual service improvement, as it is where services are monitored and improvements are identified through service performance reports. The ITIL framework provides guidance on the effective and efficient operation of services, and it is widely used in IT service management (Orand, 2011).

absence of well-structured ITSM frameworks tailored to the unique needs of the Ethiopian e-commerce industry limits the ability of businesses to effectively manage their IT services(Berihun and Teferi, 2021). This deficiency leads to inefficiencies, delays, and disruptions in critical processes such as order management, inventory control, and customer support(Berihun and Teferi, 2021) and also the lack of robust monitoring mechanisms and efficient incident management processes hinders the timely detection and resolution of IT issues(Wong, 2014).

Researchers in ethiopia and abroad have conducted ITSM practice (Teklay, 2020) highlighted the significance of successfully implementing ITIL Service Operation Processes for realizing their benefits within IT service providers. However, the specific links between IT service management practices and service processes have not extensively covered in the local Ethiopian context. (Shamohammadi Heydari, 2024) found a positive and significant effect of continuity management subsystem and management capabilities on operational performance in E-commerce organizations. However, there is a lack of comprehensive research focusing on service operation processes. (Haryanti and Pribadi, 2019) measured the success of Unimart's service design implementation using the ITIL framework. However, the study did not explore the effectiveness of service operation processes in relation to information technology management practices within E-commerce organizations. (MacLean and Titah, 2023) described the ITSM approach and its impact on the IT function. However, the study did not specifically investigate the effectiveness of information technology management practices in service operation processes. (Ayat et al., 2008) analyzed ITIL implementation failure from the perspective of an IT service purchasing company. While the study identified the standardized structures provided by ITIL processes, it was limited to the specific context of Nokia's IT unit, emphasizing the need for more research in different sectors like E-commerce.

The Observed Gaps are Limited research on the effectiveness of IT service management practices, particularly service operation processes, in Ethiopian E-commerce organizations,Insufficient understanding of the impact of ITSM practices on operational efficiency within the E-commerce sector, Lack of comprehensive studies examining the effectiveness of service operation processes in relation to information technology management practices in E-commerce organizations.

By addressing these gaps, this study aims to enhance the understanding of how IT service management practices can improve operational efficiency in Ethiopian E-commerce companies. The findings will provide valuable insights for E-commerce organizations to optimize their ITSM practices and achieve improved operational performance, leading to enhanced competitiveness in the dynamic E-commerce landscape.

This results in prolonged system downtime, reduced website availability, and compromised customer experiences, negatively impacting the overall operational efficiency of e-commerce businesses.

and many e-commerce businesses in Ethiopia face challenges related to inadequate IT infrastructure, including servers, network capacity, and cybersecurity measures(Endale, 2021). Insufficient allocation of resources towards IT infrastructure development and maintenance limits scalability, system reliability, and data security, ultimately affecting operational efficiency(Endale, 2021).

Moreover, the e-commerce industry requires a skilled workforce capable of effectively managing IT services and resolving technical issues(Singh and Sahu, 2022). However, there is a shortage of trained IT professionals with expertise in ITSM best practices(Ronita, 2017). The lack of specialized training programs and professional development opportunities further exacerbates the skills gap, impeding operational efficiency(Marc and Tsegay, 2023).

Additionally, the low adoption rate of ITSM tools and automation solutions among e-commerce businesses in Ethiopia restricts their ability to streamline and automate IT processes. Manual and repetitive tasks consume valuable time and resources while increasing the risk of errors and inefficiencies, hampering operational effectiveness.

Therefore, there is a need to investigate the effectiveness of ITSM practices in addressing these challenges in regard it effect improving operational efficiency in the Ethiopian e-commerce service industry. By identifying the gaps and determining the impact of ITSM on operational efficiency, appropriate strategies and recommendations can be developed to enhance ITSM practices optimize by tracking and analyzing these operational efficiency metrics, E-COMMERCE organizations in Ethiopia can identify areas for improvement in their IT service management practices, make data-

driven decisions to enhance service quality and customer satisfaction, and increase their competitive advantage in the market.

1.3. Research Question

The main research question and sub-questions designed to fulfill the objectives of this study are as follows:

Main question:

- How does the effectiveness of IT Service Management (ITSM) practices impact the operational efficiency of e-commerce companies in Ethiopia?

Sub questions

- How does the implementation of **event management** practices in ITSM contribute to the operational efficiency of E-commerce companies in Ethiopia?

- How do **access management** practices in ITSM affect the operational efficiency of E-commerce companies in Ethiopia?

- How does the effective implementation of **problem management** practices in ITSM impact the operational efficiency of E-commerce companies in Ethiopia?

- How does the effective implementation **Incident management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

- How does the effective implementation **Request fulfillment** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

1.4. Objective of the study

- The objective is to exmine how implementing effective ITSM practices can influence the operation efficiency of e-commerce in Ethiopia.

1.4.1. Specific Objective of the study

To achieve the main goal, the study has the following specific objectives

- To examine the effectiveness of **event management** practices in ITSM and their impact on the operational efficiency of E-commerce companies in Ethiopia.

- To examine the effectiveness of **access management** practices in ITSM and their role in improving the operational efficiency of E-commerce companies in Ethiopia.

- To examine the effectiveness of **problem management** practices in ITSM and their effect on the operational efficiency of E-commerce companies in Ethiopia.

- To examine the effectiveness **Incident management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

- To examine the effectiveness **Request fulfillment** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

1.5. Hypothesis of the Study

The hypothesis of the study is on how IT Service Management (ITSM) practices Effect the operational efficiency of e-commerce companies in Ethiopia is formulated as follows:

Hypothesis 1: “Effective implementation of **event management** practices in ITSM positively impacts the operational efficiency of E-commerce companies in Ethiopia”.

Hypothesis 2: " Effective **problem management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

Hypothesis 3: " Effective **access management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

Hypothesis *4:* Effective **Incident management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

Hypothesis 5: Effective **Request fulfillment** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

1.6. Significance of the Study

Investigation how IT Service Management (ITSM) impacts operational efficiency in Ethiopia e commerce is important by examining the effectiveness of ITSM practices in this context we can gain insights that will help us enhance operational efficiency. This study holds a value, as the e commerce industry in Ethiopia encounters obstacles such as limitations, in IT infrastructure and regulatory compliance. By understanding how ITSM can address these challenges we can develop customized solutions to optimize our IT processes and streamline workflows ultimately leading to improved efficiency.

This research plays a role in promoting competitiveness and growth within the sector since operational efficiency is vital for the success of e-commerce businesses and it can inform decision making processes by enabling organizations to allocate resources effectively and make informed choices about their investments in information technology. By improving efficiency this study contributes to enhancing the customer experience in e-commerce which leads to increased satisfaction and loyalty. Exponentially, it adds to our existing knowledge about the effectiveness of ITSM practices within the e commerce sector fostering collaboration sharing best practices and driving continuous improvement, in ITSM implementation.

1.7. Scope of the study

The scope of this study was limited to the effectiveness of IT service management (ITSM) on E commerce service operational efficiency in Ethiopia, the study only participates the B2B, C2C and B2C context of e-commerce organization. This research targets to determine IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce from ICT Department staff aspect by making comparatives on the five (5) ITSM operational service process KPIs in regards to (event management process, access management process, problem management,incedent management , Request fullflment) in Ethiopia e-commerce organization, This areas will be examined to understand their impact on operational efficiency and effectiveness in the specified context. the study focuses on e-commerce located in Addis Ababa City, By examining these specific practices, the research can provide insights into the ITSM effectiveness and their influence on operational efficiency in the context of E-commerce companies in Ethiopia.

1.8. Definition of Terms

- **IT Service Management (ITSM):** ITSM refers to the set of practices, policies, and processes used to design, deliver, manage, and improve IT services within an organization. It encompasses activities such as incident management, change management, problem management, service level management, and service desk operations.
- **Operational Efficiency:** Operational efficiency is the measure of how effectively and efficiently an organization utilizes its resources to achieve its goals. It includes optimizing processes, minimizing waste, reducing costs, and maximizing productivity to deliver products or services in a streamlined and effective manner.
- **E-commerce:** short for electronic commerce, refers to the buying and selling of goods and services over the internet. It involves online transactions, such as online shopping, electronic payments, and digital supply chain management.
- **Key Performance Indicators (KPIs):** KPIs are measurable values used to evaluate the success or performance of an organization or specific activities. KPIs are typically tied to specific goals and objectives and are used to monitor progress, assess performance, and drive improvements.
- **Mean Time to Resolve (MTTR):** MTTR is a metric that measures the average time taken to resolve an IT incident or issue. It represents the time from when an incident is reported to when it is fully resolved and the services are restored.

- **System Availability:** System availability is the percentage of time that an IT system or service is accessible and functioning as intended. It measures the reliability and uptime of systems, indicating the extent to which they are available for use by customers or employees.

- **Customer Satisfaction (CSAT):** CSAT is a measure of how satisfied customers are with a product, service, or overall experience. It is typically obtained through customer surveys or feedback and helps assess the quality and effectiveness of IT services.

- **Change Success Rate**: rate measures the percentage of changes implemented successfully without causing negative impacts or disruptions to IT services. It indicates the effectiveness of change management processes in minimizing risks and ensuring smooth transitions.

- **IT Incident Response Time:** IT incident response time measures the time taken to respond to and acknowledge an IT incident or issue after it has been reported. It reflects the speed and efficiency of incident management processes.

- **Event Management:** The process of detecting events, interpreting them, and determining the appropriate control action.
- **Incident Management:** The process of responding to issues with services and restoring the service as quickly as possible to minimize adverse impacts on the business.

- **Problem Management:** Supports incident management by resolving underlying problems and minimizing the impact of incidents. ports incident management by resolving underlying problems and minimizing the impact of incidents.

- **Request Fulfillment:** Deals with service requests from users through the standardization of common requests for prompt and efficient handling.

1.9. Organization of the Research Report

- **Chap-1:-Introduction:-**This chapter should contain background of the study, statement of the problem, basic research questions, objectives of the study, hypothesis (if any), definition of terms, significance of the study, and delimitation/scope of the study.

- ***Chap-2:-*Literature review**: - This chapter deals with the literature relevant to your study. It will have an introduction, theoretical review, empirical review and the conceptual framework of the study.

- **Chap-3:-Research Methodology:-**Under this chapter, you are required to describe the type and design of your research; the subjects/participant of the study; the sources of your data; the data collection tools/instruments employed; the procedures of data collection; and the methods of data analysis used.

- **Chap-4:-Results and discussion/Data presentation, analysis &interpretation**: - This chapter should summarize the results/findings of the study, and interpret and/or discuss the findings. Here, you are expected to make extensive use of the literature review.

- ***Chap-5:-*Summary, Conclusion, recommendation:-**This chapter comprises four sections, which include summary of findings, conclusions, limitations of the study and recommendations. Your summary of findings should be drawn from the results discussed under chapter four; your conclusions should be drawn from the summary of findings; specify any limitations that could have effect on your conclusions. Make sure that your recommendations are realistic practical.

CHAPTER TWO

2. LITRATURE REVIEW

This Section provides a concise introduction to IT Service Management (ITSM) and its associated frameworks and investigate the concept of operational efficiency within the e-commerce sector, including relevant metrics, benchmarks, and best practices It then proceeds to present the most relevant research studies conducted in this field. The primary objective of the literature review is to gain a comprehensive understanding of the concepts, theories, and current knowledge surrounding ITSM and its related frameworks, including ITIL, COBIT, ISO 20000 , ETOM, TOGAF, and MOF within the E-commerce which forms part of a broader process of social change, characterized by the globalization of markets, the shift towards an economy based on knowledge and information, and the growing dominance of technology in everyday life The literature review aims to investigate how various ITSM frameworks, methodologies can be effectively applied within the e-commerce industry. It examines the implementation of ITSM impact in e-commerce operational efficiency.

Additionally, the review explores the specific challenges and considerations related to IT infrastructure and systems in Ethiopian e-commerce. Furthermore, the review includes a collection of comparative studies that analyze and compare ITSM practices and their effects on operational efficiency in different e-commerce contexts around the world.

2.1. Information Technology Service Management

ITSM stands for IT Service Management. It is a set of practices and processes that are used to design, deliver, manage, and improve IT services for organizations(Orand, 2011). Information Technology Service Management (ITSM) is a strategy that involves managing IT operations-related activities and the interactions of IT technical personnel with business processes (Tapanee, 2015). ITSM is based on the IT Infrastructure Library (ITIL), which is a framework of best practices for IT service management(Ronald, 2023). ITIL provides guidance on how to align IT services with the needs of the business, and how to measure, monitor, and improve IT service performance(Orand and Villarreal, 2011). ITSM is vendor-neutral and adaptable to meet the needs of any organization with any type of customer. ITSM is adopted by organizations to allow service providers to be able to deliver value for customers through the services they provide(Orand, 2011).

IT Service Management (ITSM) is a strategic methodology centered around providing customer value through the delivery of IT services. Its primary goal is to ensure that IT services are closely aligned with the requirements of the business, leading to enhanced service delivery, cost reduction, and increased customer satisfaction (Chowdary, 2023).ITSM emphasizes approaches that are led by processes, and these processes consist of set best practices and are called framework (Shiff, 2021). Some of the most internationally accepted ITSM standards and frameworks include ITIL, COBIT (Control Objectives for Information and Related Technology), and ISO/IEC 20000, ETOM, TOGAF, and MOF (Rouhani and Ravasan, 2014). These frameworks provide guidelines for IT service management and help organizations to improve their IT processes and services. Implementing an ITSM framework can bring many benefits to an organization, including improved service quality, increased efficiency, better risk management, and better alignment of IT services with the needs of the business and customers(Stephen, 2017). ITSM can help organizations improve the efficiency and effectiveness of their IT services, which can lead to better customer satisfaction and increased revenue. In the context of e-commerce, ITSM can help organizations manage their online platforms, ensure the availability and reliability of their services, and provide timely support to customers.

2.2. Information Technology Service Management Frame Works

IT Service Management (ITSM) is a framework for managing IT as a set of services aligned with the business needs, rather than just managing the technology within IT. One of the most well-known frameworks for ITSM is ITIL (Information Technology Infrastructure Library), which provides guidance on aligning IT services with the needs of the business, and on measuring, monitoring, and improving IT service performance(Orand, 2011). ITIL approaches the practice of service management through a framework called the service lifecycle, which represents the stages that a service goes through during its life. The ITIL core consists of a set of books that provide guidance for each stage of the service lifecycle by documenting the lifecycle stage objectives, concepts, and the processes within each stage of the service lifecycle(Orand, 2011).

ITSM, which stands for Information Technology Service Management, refers to the systematic approach of strategizing, implementing, providing, and supporting IT services to cater to the requirements of end-users. (Pradhan et al., 2022). ITSM is based on the IT Infrastructure Library (ITIL), which is a framework of best practices for IT service management(Hefley and Murphy, 2008) ITSM frameworks and standards have been used in business organizations for the last two decades to deliver high-quality IT services(Mora et al., 2022). ITSM plays a pivotal role in the success of many organizations, leading to the development of numerous norms, standards, frameworks, and models. Among the most widely adopted ITSM standards and frameworks are ITIL, COBIT, ISO/IEC 20000, ETOM, TOGAF, and MOF (Bednarčíková, 2023). Proposing a comprehensive framework for ITSM efficiency is also a subject of concern for IT-related service sectors in organizations, as they aim to improve ITSM by reducing the cost of service in conjunction with growing their efficiency (Farmand, 2013), COBIT (Control Objectives for Information and Related Technology) is a framework utilized for the purpose of IT governance and management. It offers a collection of best practices that organizations can employ to guarantee alignment between their IT systems and overall business goals and objectives(Syuhada, 2021). COBIT is commonly employed in IT audits to assess the effectiveness of IT governance and management processes (Syuhada, 2021).

ITIL which stands for Information Technology Infrastructure Library, which is a framework used in IT Service Management (ITSM) activities , Some key components of ITIL include Service Strategy, Service Design, Service Transition, and Service Operation (Riyadi et al., 2022) (Kurniawan et al.,

2022) ITIL provides best practice guidance for IT service management, including a collection of publications that provide detailed guidelines on the management of IT functions, processes, responsibilities, and roles associated with IT service management and The framework is designed to help IT services be planned, designed, selected, operated, and continuously improved (Wang et al., 2022) ITIL can also be used to help manage cloud computing services, as ITIL procedures are used to measure the efficiency of IT service management procedures and their association with the accelerated system development of cloud systems

ISO/IEC 20000-1 is an international standard that specifically focuses on service management systems within IT companies. It provides a comprehensive framework for managing IT services, encompassing processes, procedures, and requirements to ensure the delivery of high-quality services to customers(Grishaeva, 2022), One significant aspect of ISO/IEC 20000-1 is its compatibility with other frameworks, such as ITIL (Information Technology Infrastructure Library) and Microsoft Operation Framework. Organizations can leverage these frameworks in conjunction with ISO/IEC 20000-1 to enhance their IT service management practices(Adriansyah et al., 2020). By combining best practices from multiple sources, companies can establish more efficient and effective processes for delivering IT services.

Moreover, ISO/IEC 20000-1 can also be applied to develop standards for cloud services(Adriansyah et al., 2020). As the demand for cloud computing continues to grow, organizations need a robust framework to govern and manage these services. ISO/IEC 20000-1 provides the necessary guidelines and requirements for maintaining service quality, security, and reliability in cloud-based environments (Picard et al., 2015).

In addition to IT companies, ISO/IEC 20000-1 can also be utilized in government agencies and the management of information technology services (Lopez et al., 2018). Governments often rely on IT services to support their operations and deliver public services. By implementing ISO/IEC 20000-1, government entities can establish standardized processes, improve service delivery, and enhance the overall management of IT services.

2.3. E-COMMERCE

E-commerce, or electronic commerce, encompasses a wide range of transactions conducted online. Various types of e-commerce have emerged to cater to different needs and facilitate transactions between different entities. One such type is EDI (Electronic Data Interchange), which focuses on secure and efficient exchange of information between identifiable partners, Trust plays a crucial role in the success of EDI transactions(Ruppel et al., 2003), Another type is B2C (Business-to-Consumer) e-commerce, which involves transactions between businesses and individual consumers. This form of e-commerce allows businesses to directly sell their products or services to end consumers through online platforms or websites(Xu et al., 2015). In contrast, B2B (Business-to-Business) e-commerce involves transactions between businesses, It enables companies to procure goods or services from other businesses using digital platforms(Xu et al., 2015) ,C2C (Consumer-to-Consumer) e-commerce is yet another type, where individual consumers engage in transactions with one another. Online marketplaces provide a platform for consumers to buy and sell products directly to other individuals. This type of e-commerce has gained popularity with the rise of platforms like eBay and Etsy(Xu et al., 2015).

Remote Purchase Environments refer to e-commerce scenarios where products are presented in virtual or remote settings. User preferences for information processing play a crucial role in the presentation of these products. This type of e-commerce focuses on providing a seamless and engaging shopping experience to customers, even when they cannot physically interact with the products(Xu et al., 2015).

Demand Forecasting is a type of e-commerce that involves predicting the demand for products or services. Accurate demand forecasting is essential for the efficient operation and growth of e-commerce enterprises, By understanding customer trends and preferences, businesses can optimize their inventory management, pricing strategies, and marketing efforts(Li et al., 2021). The COVID-19 pandemic has significantly impacted the e-commerce landscape, leading to the emergence of e-commerce during the pandemic. With restrictions on physical retail and increased reliance on online shopping, businesses have shifted their focus to B2C e-commerce as the primary means of reaching customers. This has accelerated the growth of online shopping platforms and highlighted the importance of a robust e-commerce infrastructure(Gulamuddinovna Zufarova et al., 2021) ,E-

commerce Service Design involves the design and optimization of e-commerce services, including logistics service attributes. It encompasses various aspects such as order fulfillment, delivery options, returns and exchanges, and customer support. Effective service design is crucial for providing a seamless and satisfactory experience to customers throughout their e-commerce journey(Zheng et al., 2021) ,Recommendations in E-commerce Networks, involve the use of algorithms and data analytics to provide personalized product or service recommendations to customers. By analyzing user behavior, preferences, and purchase history, e-commerce platforms can suggest relevant items, improving customer satisfaction and driving sales(Wu et al., 2021).

2.4. ITSM and Operational Efficiency in E-Commerce

ITSM (Information Technology Service Management) plays a crucial role in e-commerce, as it helps organizations deliver services efficiently and effectively. Various disciplines, such as Services Computing and SOA (Service-Oriented Architecture), focus on service design and operation in the context of e-commerce, ITSM models, such as ITIL (Information Technology Infrastructure Library), help organizations manage their IT services effectively. These frameworks provide processes and best practices for managing IT services, ensuring their operative effectiveness (Nabiollahi et al., 2011)

Operational efficiency in ITSM (IT Service Management) for e-commerce refers to the ability of e-commerce companies to efficiently manage their IT services to support their business operations (Gao et al., 2020)

The IT Support Engagement Conceptual Model proposes a standardized approach to frame the enterprise Business to Business (B2B) IT services growth strategies from operational efficiency, diversification, evaluation, and incubation(Fahmy and Mullins, 2023).

ITSM can play a crucial role in ensuring operational efficiency. By adopting ITSM frameworks such as ITIL, e-commerce businesses can align their IT services with the needs of the business, improve the quality of their services, and optimize IT performance. This can lead to cost savings, improved customer satisfaction, and a more agile and responsive IT organization.

implementing ITSM frameworks in e-commerce can lead to improved operational efficiency by aligning IT services with business strategy, meeting customer needs, measuring and monitoring IT

performance, optimizing IT services and performance, adapting to changing business requirements, improving incident management, and enhancing service quality.

2.5. ITSM Adoption and Challenges in Ethiopia

ITSM (Information Technology Service Management) frameworks are being adopted in Ethiopia to manage IT services effectively and efficiently. Ethio Telecom, the sole telecom service provider of Ethiopia, has a gap in the existing ITSM practices, and there is a need to design and develop ITSM frameworks for the telecom sector in Ethiopia(Berihun and Teferi, 2021).

Previous studies have focused on the implementation, adoption, tailoring, and system or model development for selected ITSM processes within the Ethiopian context Challenges to implementing ITSM frameworks in Ethiopia include project budget, top management involvement, stakeholder management, prioritization of process implementation, and measuring performance(Teklay, 2020).

the adoption of ITSM in e-commerce in Ethiopia is influenced by factors such as technological capabilities, perceived benefits, organizational competence, infrastructure development, government policies, and the perceived advantages of mobile payment systems(Hassen and Svensson, 2014).

2.6. Information Technology Infrastructure Library (ITIL)

Information Technology Infrastructure Library (ITIL) is a widely used framework for IT service management (ITSM) that helps organizations plan, design, select, operate, and continuously improve their IT services , The ITIL Service Lifecycle is a framework for IT service management that consists of five stages: Service Strategy, Service Design, Service Transition, Service Operation, and Continual Service Improvement(Orr, 2011).

ITIL is designed to coordinate and manage ongoing activities that add value to the business, such as Service Strategy, Service Design, and Service Transition (Riyadi et al., 2022). Another study indicated that the use of the ITIL framework improved customer service systems, leading to faster resolution of customer complaints (Kurniawan et al., 2022).

The ITIL (Information Technology Infrastructure Library) framework is a widely used method for managing IT services and e-commerce systems. It provides a set of best practices and processes for the service design, service management, and service improvement of IT services, including e-commerce platforms (Silva and Santos, 2013). By comparing the current maturity level of an e-commerce system with the expected maturity level, ITIL can help identify gaps and areas for improvement (Rahma et al., 2023), ITIL's focus on service quality and customer satisfaction can help e-commerce platforms better understand and meet customer needs, leading to increased customer loyalty and repeat business

2.7. ITIL SERVICE LIFE CYCLE

The ITIL framework approaches the practice of service management through a model called the service lifecycle, which represents the stages that a service goes through during its life(Haryanti and Pribadi, 2019). The service lifecycle consists of several stages, each of which is documented in the ITIL core volumes,These stages include service strategy, service design, service transition, service operation, and continual service improvement(Orand, 2011). The service lifecycle is a detailed model of the service provider's specialized organizational capabilities, provided in the form of processes and functions(Danby, 2023). It is designed to support the business processes and deliver value to customers by facilitating outcomes that customers want to achieve without the ownership of specific costs and risks. The service lifecycle includes activities, concepts, and processes that are essential for the effective management of IT services(Akkartal, 2022).

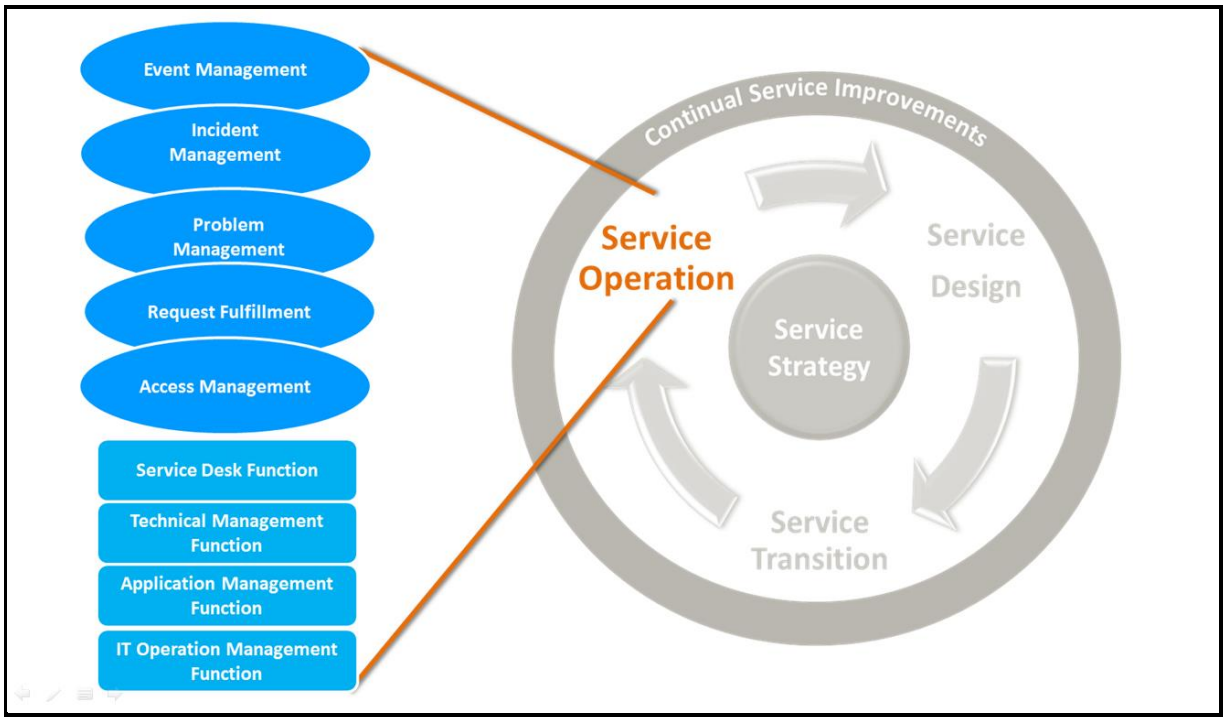

Figure 1: Overview of Service Operation Stage , Rodrigo, (2017)

Service operation is one of the stages in the ITIL service lifecycle. It is where the value of the service is realized and the strategy of the organization is executed (Orand and Villarreal, 2011). The service operation volume provides guidance on the effective and efficient operation of the service(Bordoloi et al., 2019). It includes principles of effective and efficient service operation, organizing service operation, roles and responsibilities of the functions within service operation, and the processes within service operation, such as event management, incident management, request fulfillment, problem management, and access management(Orand, 2011). Service operation is important to continual service improvement, as the service operation stage is where the services are monitored and improvements are identified through the service performance reports, Within service operation are the processes to ensure that this value can be provided effectively and efficiently. In this section, these processes are discussed(Orand, 2011).

Table 1. The processes in service operation

Event management: Event Management notifies appropriate resources through alerts. An alert is defined as "a warning that a threshold has been reached, something has changed, or a failure has occurred." --- ***H1:*** *"Effective implementation of* ***event management*** *practices in ITSM positively impacts the operational efficiency of E-commerce companies in Ethiopia".*
Problem management: is to prevent incidents from occurring as well as minimize the impact of incidents that cannot be prevented. --- ***H2:*** *Effective* ***problem management*** *practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."*
Access management: provide access for services that users are entitled to while preventing access to users that are not entitled. --- ***H3:*** *" Effective* ***access management*** *practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."*
Incident management: ensure that service is restored as quickly as possible and to minimize the adverse impact to the business. ***H4:*** *" Effective* ***Incident management*** *practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."*
Request fulfillment: process is to deal with requests from users. ***H3:*** *" Effective* ***Request fulfillment*** *practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."*

2.8. Related Works

Table 2: Related Works Done In Ethiopia e-commerce

Author	Title	Objectives	Key Findings	Observed Gaps
Rahel Teklay (2020)	Challenges and critical success factors in implementing ITIL service operation processes: the case of commercial bank of ethiopia	Identify the challenges of implementing the ITIL Service Operation Processes within IT service provider in the context of CBE,	study found that that their successful implementation by the IT support organisation is seen as crucial for realising their benefits.	Links between IT service management practices and service process not extensively covered in local Ethiopian context.
Hammadi Heydari (2023)	investigating Validation of ITSM Model in E-Commerce organization	The main purpose of this research is investigation of IT services management pattern validation in e-commerce organizations.	continuity management subsystem, management capabilities has a positive and significant effect on the organization performance operational structures	Lack of apprehensive research regard to service operation process process
Tining Haryanti (2020)	E-Commerce Service Design Readiness using ITIL framework	to measure the success of the implementation of Unimart service design based on the effectiveness of each ITBSC perspective.	improvement to achieve the expected level of maturity. Knowing the Unimart Service design readiness and knowing the parts of the service design process that need to be improved.	The study did not investigate the effectiveness service operation process of the implemented information technology management practices in relation to e commerce organization
Don MacLean, Ryad Titah (2023)	Implementation and impacts of IT Service Management in the IT function	To describes the ITSM approach and how it marks a change with earlier approaches to managing the IT function.	this paper performs a systematic literature review examining, research published on ITSM between 2012 and 2021 in order to understand what has occurred rather than what could or should be expected.	The study did not investigate the effectiveness of the implemented information technology management practices in service operation rather it study what could or should be expected.
Sharifi, Ayat, Rahman & Sahibudin, (2008)	Lesson Learned in ITIL implementation failure	Focus on analyzing the operational level challenges and nonconformances from the IT service purchasing company's point-of-view. Nokia's IT unit selectively outsourced parts of its operational level IT service activities to the supplier.	It was identified that ITIL processes can provide standardized structures for executing the IT service activities	Limited to purchasing company's point-of-view. Nokia's IT unit context, more research needed in different sectors like e-commerce .

2.9. Proposed Theoretical Framework

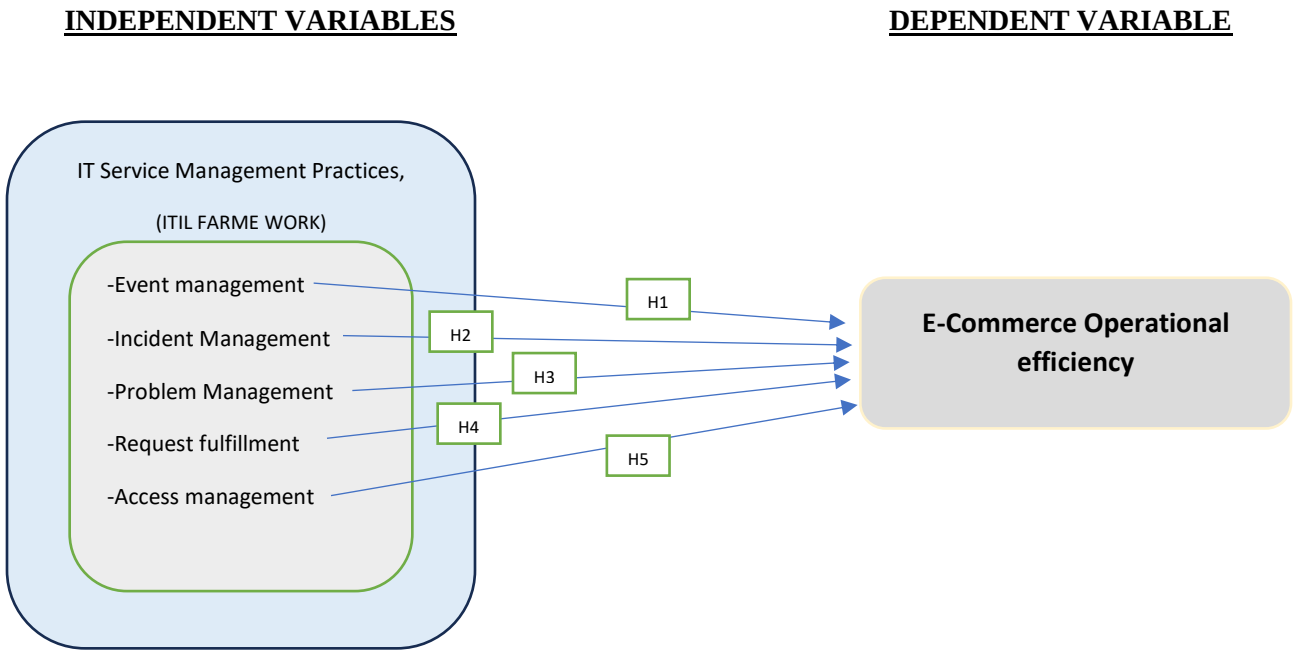

Figure 2 conceptual framewrok

Hypothesis 1: "Effective implementation of **event management** practices in ITSM positively impacts the operational efficiency of E-commerce companies in Ethiopia".

Hypothesis 2: " Effective **problem management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

Hypothesis 3: " Effective **access management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."

Hypothesis 4: " Effective **Incident management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia." "

Hypothesis 5: "Effective **Request fulfillment** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia.

CHAPTER THREE

Research methodology

This section of the study presents the major issues related to the research methodology to be used for this particular study, including the research approach, research design, target population, sample size determination formula, data sources, data collection instruments, variable measurements, and data analysis methods.

3.1. Research approach

Qualitative and quantitative research are two distinct types of research methods, Quantitative research deals with numbers and statistics, while qualitative research deals with words and meanings (Streefkerk, 2019) Quantitative research seeks to understand the causal or correlational relationship between variables through testing hypotheses, while qualitative research seeks to understand a phenomenon within a real-world context through the use of interviews and observation (Fields, 2023).

Quantitative research is often used to test hypotheses, identify patterns, and make predictions, while qualitative research aims to produce rich and detailed descriptions of the phenomenon being studied, and to uncover new insights and meanings and relies on numerical or measurable data, while qualitative research relies on personal accounts or documents that illustrate in detail how people think or respond within society (Saul, 2022) Both types of research are valid, and certain research topics are better suited to one approach or the other(Fields, 2023).

In this study for the reason that the objective of the study is to understand how implementing ITSM practices can affect the operation efficiency of e-commerce companies in Ethiopia. The Quantitative research allows for the collection and analysis of numerical data, providing statistical evidence and quantifiable insights into the relationship between ITSM practices and operational efficiency The collected primary data, gathered through a structured questionnaire, will be subjected to quantitative analysis as the chosen research approach.

3.2. Research Design

The function of research design is to provide a plan or framework for conducting a study that will help to ensure that the research is valid, reliable, and unbiased(Feilberg, 2015) ,Research design is important because it helps to ensure that the study is conducted in a way that will allow the researcher to answer the research question or test the hypothesis in the most effective and efficient way possible Stone-Romero and Rosopa, (2008) , this research design proposes to outline a plan for investigating the impact of ITSM practices on the operational efficiency of e-commerce companies in Ethiopia. The study aims to provide insights into how the adoption and implementation of ITSM practices, based on ITIL guidelines, can enhance operational efficiency in the context of the e-commerce industry.

The study will employ both descriptive and explanatory research design to explore and understand the causal relationship between IT Service Management (ITSM) practices and operational efficiency in e-commerce companies. This design allows for a thorough investigation of how variations in ITSM practices impact the operational efficiency of e-commerce firms operating in Ethiopia. By examining the relationship between these variables, the study aims to provide insights into the extent to which ITSM practices influence the operational efficiency of e-commerce companies, thus contributing to a deeper understanding of the dynamics between ITSM and organizational performance in the context of the Ethiopian e-commerce sector.

The choice of an explanatory research design is because by its suitability for investigating the causal relationship between IT Service Management (ITSM) practices and operational efficiency in e-commerce companies. This design allows for the identification of causal links by examining the effect of ITSM

practices on operational efficiency while controlling for other potential factors. By using this research design, the study aims to provide a deeper understanding of how specific ITSM practices contribute to operational efficiency in the context of e-commerce companies in Ethiopia. The design aligns with the research objectives as it enables the exploration of the extent to which variations in ITSM practices influence operational efficiency, thereby informing the development of effective strategies

for enhancing ITSM implementation and improving operational performance in the e-commerce sector.

3.3. Population and Sampling

3.3.1. Target Population of the Study

The target population for the study on ITSM effectiveness in Ethiopia's e-commerce sector includes e-commerce organization IT professionals and practitioners. By considering these groups, the study aims to gather comprehensive insights into the impact of ITSM on operational efficiency in the Ethiopian e-commerce industry the study's target demographic is e commerce company businesses in Addis Ababa. This includes a diverse range of businesses in the e-commerce sector, spanning various industries such as retail, technology, fashion, and services. The study aims to investigate the relationship between IT Service Management (ITSM) practices and operational efficiency within this specific population. By focusing on e-commerce companies in Ethiopia located in Addis Ababa the study seeks to provide insights and recommendations for improving ITSM implementation and enhancing operational efficiency in the context of the Ethiopian e-commerce industry as a whole, examine the influence of IT Service Management (ITSM) practices, as guided by the ITIL framework , Out of this list of 28 companies distributed questioners , the 10 companies are using the ITIL framework .

Table 3: Target Population of the Study

(B2B)	(B2C)	(C2C)
Riesemart	Jumia Ethiopia	Qefira
Tradeo Africa	YenaZe	Mekina.net
EthiopiaCommodityExchange(ECX)	Shebilo	AddisCars
AddisMercato	Delala	AddisMap
EthioMarket	BezaMart	Delala
Ethiopian Exporters	Konjo Store	EthioMarket
Helloomarket	BestMart	Asbeza.net
Jiji.com	Online Market Ethiopia	
	AfricDeals	
	Beyu delivery	
	Zmall delivery	
	Deliver Addis	

Source: Own Research Result, 2024

3.3.2. Sampling Technique and Sample Size Determination

Based on the nature of the study on ITSM effectiveness on operational efficiency in Ethiopia's e-commerce sector, would recommend, Because of there are no official records of e-commerce businesses in Ethiopia, a purposive sampling technique will be used to choose suitable sample respondents for this study as the primary sampling technique. This technique allows for the representation of various strata within the population, such as different company sizes, industry sectors, or geographic locations type. By ensuring representation from different segments, stratified random sampling can provide a more comprehensive understanding of the relationship between ITSM practices and operational efficiency in the e-commerce sector based on type of e-commerce which are categorized as (B2C), (B2B), (C2C), Out of this list of 27 companies distributed questioners, the 10 companies are using the ITIL framework.

The sampling process refers to the selection of individual members or units from a larger population to represent the e-commerce phenomena within that population or group(Zhang et al., 2018). In this study In this study, Slovin's Formula is particularly useful when there is lack prior information about the population's variance. It aids in determining an appropriate sample size to ensure that the survey results are representative within a certain margin of error. This formula is a valuable tool in research scenarios where detailed population parameters are unknown, allowing for the estimation of sample size with a specified level of confidence(Bobbitt, 2023).

$$n = \frac{N}{(1 + Ne^2)}$$

Where n = sample size N= population, 1 = constant , e = error estimate (0.08) at 95% confidence interval

$$\frac{270}{(1 + (270 * 0.08^2)} = 98.9 \approx 100$$

A total of 100 questionnaires were distributed disseminated across various segments to ensure a diverse representation. Utilizing stratified random sampling, the study aims to gain a deeper insight into how IT Service Management (ITSM) practices Affect Operational efficiency within the e-commerce industry. This approach is particularly pertinent as it examines the distinct categories of e-commerce: Business-to-Consumer (B2C), Business-to-Business (B2B), and Consumer-to-Consumer (C2C).

Table 4: companies selected for the study that are using the ITIL framework

(B2B)	(B2C)	(C2C)
AddisMercato Helloomarket	Jiji.com Beyu delivery Zmall delivery Deliver Addis	Qefira EthioMarket Mekina.net Asbeza.net

Source: Own Research Result, 2024

3.4. Source of data and data type

The study will utilize cross-sectional quantitative data collected from primary sources as the main data for analysis. This means that the study will rely on firsthand data that is quantitative and collected at a specific point in time. In addition to the primary data, secondary sources such as books, published and unpublished documents and research papers will be consulted to gather information on understanding of the relationship between ITSM practices and operational efficiency in the e-commerce sector

3.5. Instruments of Data Collection

In investigating the effectiveness of ITSM on operational efficiency in Ethiopia's e-commerce sector, the primary data collection tool will be a survey questionnaire, the questionnaire for the study will assess the processes within service operation in the aspect categorized as, which are Event Management, Incident Management, Request Fulfillment, and Problem Management processes in IT Service Management (ITSM) and their impact on operational efficiency.

It will be structured into several sections accordingly including the demography section, which will be rated by respondents on a five-point Likert scale, ranging from very disagree to very agree. The Likert scale provides an even number of alternatives, ranging from one to five. Physical copies of the survey questionnaires will be distributed to the business managers of selected e-commerce in Ethiopia. They will be requested to voluntarily and anonymously complete and return the questionnaires within a specified timeframe. It is estimated that the questionnaire will take approximately 20 to 30 minutes to complete. The data collection phase is planned to span a period of three weeks.

3.6. Methods and Techniques of Data Analysis

Following the collection of the necessary raw data, the study proposes to employ a quantitative approach for data analysis. The gathered information will be analyzed using various descriptive statistical techniques, including response frequencies and percentages, as well as ANOVA (Analysis of Variance). Additionally, regression analysis using the inferential statistics method will be conducted to explore the magnitude and direction of the explanatory variables' impact on the dependent variable. The statistical software SPSS will be utilized to perform the data analysis and derive meaningful insights from the collected data.

3.7. Research Reliability and Validity

3.7.1. Reliability

Reliability test is a method used to determine the consistency and stability of research results. It is important to ensure that the research instruments used are reliable in order to obtain accurate and valid results (Vidia Kusuma, 2022). Cronbach's alpha coefficient is a measure of the reliability of a psychometric test, used to estimate the internal consistency of a scale or questionnaire (Kilic, 2016), It can be calculated for each item in the scale or as an average value for all items in the scale. The reliability of the scale is considered good if the coefficient is equal to or greater than 0.70 (Kilic, 2016), Cronbach's Alpha coefficient, the most frequently used method of reliability test, will be employed in this study to ensure the accuracy and reliability of the study findings.

Table 5: Reliability Test Result

Variables	Cronbach's Alpha	No. of items
Event management	0.713	5
Incident Management	0.748	5
Problem Management	0.808	5
Request fulfillment	0.837	5
Access management	0.814	5

3.7.2. Validity Test

Validity tests enable researchers to evaluate the extent to which an instrument accurately measures what it is intended to measure within a specific study (Kothari, 2004), in order to establish the validity of the instrument used in this study, validity tests will be developed based on existing research, literature reviews, and established questions within the field of study. Furthermore, experts who possess the necessary expertise and knowledge in the subject area, along with guidance from the research advisor, will evaluate the content validity of the instrument.

This comprehensive approach is intended to ensure that the measurement items accurately and appropriately capture the intended construe

3.8. Ethical Considerations

Ethical considerations are of utmost importance when conducting research in the e-commerce sector. A comprehensive approach is necessary to ensure the accuracy and appropriateness of measurement items in capturing the intended constructs.

The First informed consent must be obtained from all participants, including e-commerce employees, who will be involved in the study. Clear explanations regarding the purpose, procedures, and potential risks and benefits of participation should be provided, while also allowing participants the option to withdraw their consent at any time.

Secondary is maintaining confidentiality and anonymity is crucial to protect participants' data and identities. Secure data storage methods should be used, and collected data should be anonymized to safeguard sensitive information. Additionally, data privacy and protection must be upheld by complying with relevant regulations and obtaining necessary permissions and approvals for handling personal data. Encryption or other security measures should be implemented to prevent unauthorized access or breaches. Minimizing risks and avoiding harm to participants and organizations is another vital consideration. Research activities should be carefully designed to prevent disruption or negative impact on the operational processes of e-commerce companies. Furthermore, potential conflicts of interest should be disclosed, and the researcher should maintain objectivity and impartiality throughout the research process. Ethical use of research findings involves responsible and unbiased dissemination of results, avoiding misrepresentation or manipulation for personal or organizational

gain. Seeking ethical approval from research ethics committees or institutional review boards is essential. Cultural sensitivity is important, necessitating respect for participants' cultural norms, values, and practices. Intellectual property rights must be respected, giving proper credit to original authors or creators and avoiding plagiarism.

Transparency should be maintained by clearly documenting the research methodology, data collection procedures, and analysis techniques used. Sharing research findings with the academic community and stakeholders promotes openness, collaboration, and knowledge exchange. By following these ethical considerations, research in the e-commerce sector can be conducted with integrity, ensuring the protection of participants' rights and the advancement of responsible and unbiased research practices.

CHAPTER FOUR

4. Result and Discussion

The first part of the questionnaire consists of demographic information of the respondents are presented in figures below. The second part of the questionnaire presents the descriptive analysis on variables of the study and the next part deals with the results of regression and correlation between factors influencing adoption of agency banking and intention to adopt agency banking. In this analysis SPSS version 27.0 was used to make the necessary calculations. A total of 120 questionnaires are distributed to potential respondents and 100 were workable questionnaires and analyzation was made based on this data.

4.1. Demographic Characteristics of Respondents

Analyzing the demographic information of respondents is necessary to understand the differences among respondents in terms of the primary demographic variables and to evaluate their responses accordingly. As a result, this section will show the demographic features of survey respondents by sex, age, and company age.

4.1.1. Gender of Respondents

The gender distribution of the 100 respondents in the survey on ITSM effectiveness in Ethiopian e-commerce service providers , The data shows that 75 of the participants (75%) are male, while the remaining 25 (25%) are female.

Table 6: Gender of respondants

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	75	75.0	75.0	75.0
	FEMALE	25	25.0	25.0	100.0
	Total	100	100.0	100.0	

4.1.2. Age Category of the respondents

the frequency distribution shows that the majority of the sample, 55 individuals, or 55.0%, are in the 26-35 years age group. This is the largest group within the sample. The second-largest group is the

18-25 years age group, which comprises 35 individuals, or 35.0% of the sample. The smallest group is the 36-44 years age group, which consists of 10 individuals, or 10.0% of the sample.

Table 7 :Age Category of the respondents

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	35	35.0	35.0	35.0
	26-35	55	55.0	55.0	90.0
	36-44	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

the frequency distribution shows that the majority of the sample, 55 individuals, or 55.0%, are in the 26-35 years age group. This is the largest group within the sample. The second-largest group is the 18-25 years age group, which comprises 35 individuals, or 35.0% of the sample. The smallest group is the 36-44 years age group, which consists of 10 individuals, or 10.0% of the sample.

The cumulative percentages provide additional insights into the age distribution. By the end of the 26-35 years age group, 90.0% of the sample has been accounted for. This means that the remaining 10.0% of the sample falls within the 36-44 years age group.

Generally, the data suggests that the sample is predominantly composed of individuals in their late 20s and early 30s, with a smaller proportion of younger and older individuals. This age distribution may be relevant for understanding the characteristics and behaviors of the population being studied, as age can be an important factor in various social, economic, or psychological phenomena.

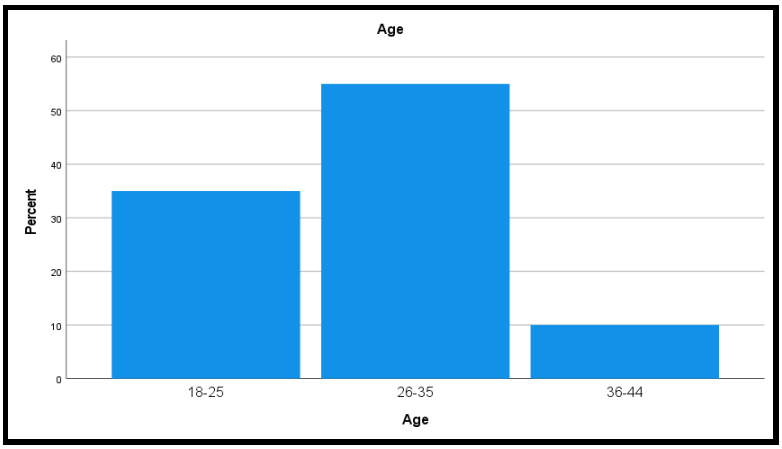

Figure 3 Age Category of the respondents

4.1.3. Educational Level of the respondents

The educational level distribution of a sample of 100 individuals. The data shows that the sample is divided into two educational categories: BA/BSc Degree and MA/MSc, The majority of the sample, 83 individuals or 83.0%, hold a BA/BSc Degree. This represents the largest educational group within the sample. The remaining 17 individuals, or 17.0%, have obtained an MA/MSc degree.

Table 8: Educational_Level

Educational_Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BA/BSC Degree	83	83.0	83.0	83.0
	MA/MSc	17	17.0	17.0	100.0
	Total	100	100.0	100.0	

Source: Own Research Result, 2024

The cumulative percentage values further illustrate the educational distribution. By the end of the BA/BSc Degree group, 83.0% of the sample has been accounted for. The remaining 17.0% of the sample holds an MA/MSc degree.

This data suggests that the sample is primarily composed of individuals with a bachelor's or equivalent degree, with a smaller proportion holding a master's or equivalent degree. This

educational distribution may be relevant for understanding the characteristics, skills, and experiences of the population being studied, as educational attainment can be a significant for the research in IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce

4.1.4. Service year Status of the respondent

The work experience distribution of the sample is crucial in the context of researching the effectiveness of IT service management on operational efficiency in the Ethiopian e-commerce sector. The data provides valuable insights that can inform the understanding of the sample population and its implications for the research.

Table 9: Work Experince status of the respondent

Work_Experince

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3	43	43.0	43.0	43.0
	4-7	51	51.0	51.0	94.0
	8-12	6	6.0	6.0	100.0
	Total	100	100.0	100.0	

Source: Own Research Result, 2024

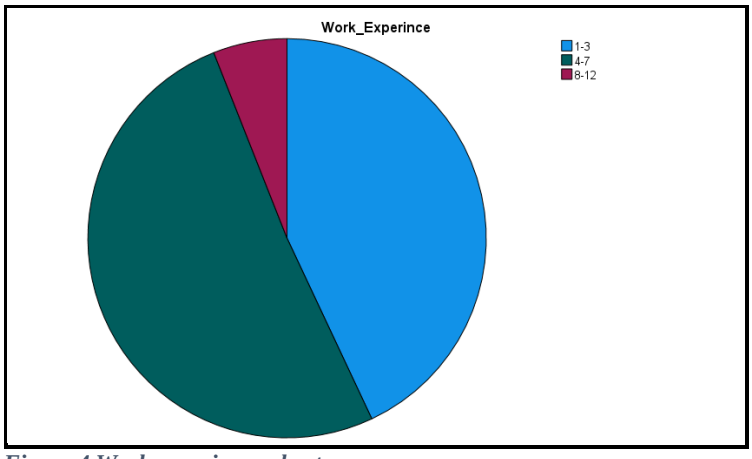

Figure 4 Work experience chart

The majority of the sample, comprising 51 individuals or 51.0%, have 4-7 years of work experience. This suggests that the sample is predominantly composed of individuals with moderate levels of professional experience, which could be beneficial for the research. Individuals with 4-7 years of experience may have acquired a solid understanding of IT service management practices and their impact on operational efficiency, having witnessed the evolution of e-commerce in Ethiopia.

The second-largest group, accounting for 43 individuals or 43.0% of the sample, have 1-3 years of work experience. This group may provide a different perspective, offering insights into the more recent challenges , The smallest group, consisting of 6 individuals or 6.0% of the sample,

have 8-12 years of work experience The cumulative percentage values further reinforce the distribution, indicating that 94.0% of the sample has 7 years or less of work experience, while the remaining 6.0% have 8-12 years of experience.

This work experience distribution aligns well with the research focus, as it provides a balanced representation of professionals with varying levels of exposure to the evolving e-commerce landscape in Ethiopia,the work experience data presented in this essay form provides a solid foundation for the proposed research, offering insights that can be leveraged to understand the dynamics and challenges faced by the Ethiopian e-commerce sector in the context of IT service management and operational efficiency

4.2. Descriptive Statistics Result

4.2.1. ITSM practices, Event management practices

The provided statistics offer valuable insights into the perceptions and beliefs surrounding the implementation of event management practices in IT service management (ITSM) and its impact on the operational efficiency of e-commerce companies in the given context, *table 10* offer valuable insights into the perceptions and beliefs surrounding the implementation of event management practices in IT service management (ITSM) and its impact on the operational efficiency of e-commerce companies in the given context.

Table 10: ITSM practices, Event management practices

	Response				
Questions	Mean	Median	Mode	Std. Deviation	Sum
The implementation of event management practices in ITSM improves the operational efficiency of E-commerce companies	4.09	4.00	4	.653	409
event management practices in ITSM enhances the coordination and response time in addressing operational issues for E-commerce companies	4.37	4.00	4	.580	437
event management practices in ITSM leads to better resource allocation and utilization in E-commerce companies.	4.17	4.00	4	.620	417
event management practices in ITSM increases the overall customer satisfaction and service quality in E-commerce companies	4.11	4.00	4	.695	411
event management practices in ITSM positively impacts the profitability and competitiveness of E-commerce companies.	4.18	4.00	4	.626	418

Source: Own Research Result, 2024

The data set includes responses from a sample of 100 individuals, with no missing values across the five variables examined. The mean values for each variable range from 4.09 to 4.37, indicating a generally positive sentiment towards the impact of event management practices in ITSM on various aspects of e-commerce operations.

Specifically, the highest mean value of 4.37 is observed for the variable "event management practices in ITSM enhances the coordination and response time in addressing operational issues for E-commerce companies." This suggests that the respondents strongly believe that the implementation of event management practices in ITSM can lead to improved coordination and quicker response times in addressing operational challenges faced by e-commerce companies.

The variable with the second-highest mean value of 4.17 is "event management practices in ITSM leads to better resource allocation and utilization in E-commerce companies." This indicates that the respondents perceive event management practices in ITSM as a means to optimize resource allocation and utilization, which can contribute to enhanced operational efficiency.

The remaining variables, "event management practices in ITSM improves the operational efficiency of E-commerce companies" (mean = 4.09), "event management practices in ITSM increases the overall customer satisfaction and service quality in E-commerce companies" (mean = 4.11), and "event management practices in ITSM positively impacts the profitability and competitiveness of E-commerce companies" (mean = 4.18), also demonstrate relatively high mean values, suggesting a strong belief in the positive impact of event management practices in ITSM on various aspects of e-commerce operations.

The median values of 4.00 for all variables further reinforce the central tendency of the responses, indicating that the majority of respondents selected "4" on the scale, which can be interpreted as a positive or agreeable response.

The mode values of 4.00 across all variables suggest that the most frequently observed response is "4," again highlighting the overall positive perception of the respondents towards the impact of event management practices in ITSM on e-commerce operational efficiency.

The standard deviation values, ranging from 0.580 to 0.695, indicate a relatively low degree of variability in the responses, suggesting a relatively high level of agreement among the respondents.

Overall, the statistical analysis presented in this essay form suggests that the respondents have a strong positive perception of the role of event management practices in ITSM in enhancing the operational efficiency of e-commerce companies. This data can serve as a valuable foundation for further research and decision-making in the context of IT service management and its impact on the e-commerce sector

4.2.2. ITSM practices, incident management practices

The mean values for each variable range from 4.16 to 4.36, indicating a generally positive sentiment towards the impact of incident management practices in ITSM on various aspects of e-commerce operations, The variable with the highest mean value of 4.36 is "incident management practices in ITSM enhance the incident resolution and root cause analysis capabilities of E-commerce companies."

Table 11: ITSM practices statistics regarding incident management practices

	Response Statistics				
Questions	Mean	Median	Mode	Std. Deviation	Sum
incident management practices in ITSM reduce the mean time to repair and restore services	4.16	4.00	4	.598	416
incident management practices in ITSM improve the communication and collaboration among different teams in handling incidents for E-commerce companies	4.18	4.00	4	.626	418

incident management practices in ITSM enhance the incident resolution and root cause analysis capabilities of E-commerce companies.	4.36	4.00	4	.560	436
incident management practices in ITSM contribute to the continuous improvement of incident response and prevention mechanisms in E-commerce companies	4.18	4.00	4	.626	418
Effective incident management practices in ITSM minimize the impact of incidents on the availability and performance of E-commerce systems.	4.18	4.00	4	.626	418

Source: Own Research Result, 2024

This suggests that the respondents strongly believe that the implementation of incident management practices in ITSM can lead to improved incident resolution and better understanding of root causes, which are critical for enhancing operational efficiency.

The variables "incident management practices in ITSM improve the communication and collaboration among different teams in handling incidents for E-commerce companies" and "incident management practices in ITSM contribute to the continuous improvement of incident response and prevention mechanisms in E-commerce companies" both have a mean value of 4.18. This indicates that the respondents perceive incident management practices in ITSM as a means to foster better communication and collaboration among teams, as well as drive continuous improvement in incident response and prevention, both of which can contribute to enhanced operational efficiency.

The variable "incident management practices in ITSM reduce the mean time to repair and restore services" has a mean value of 4.16, suggesting that the respondents believe incident management practices can lead to a reduction in the time required to repair and restore services, thereby improving operational efficiency.

The median values of 4.00 for all variables further reinforce the central tendency of the responses, indicating that the majority of respondents selected "4" on the scale, which can be interpreted as a positive or agreeable response.

The mode values of 4.00 across all variables suggest that the most frequently observed response is "4," again highlighting the overall positive perception of the respondents towards the impact of incident management practices in ITSM on e-commerce operational efficiency.

the respondents have a strong positive perception of the role of incident management practices in ITSM in enhancing the operational efficiency of e-commerce companies. This data can serve as a valuable foundation for further research and decision-making in the context of IT service management and its impact on the e-commerce sector.

4.2.3. ITSM practices, Problem management practices

the statement with the highest mean value of 4.32 is "Problem management practices in ITSM improve the problem detection and analysis capabilities of our e-commerce." This suggests that the respondents strongly believe that the implementation of problem management practices in ITSM can lead to enhanced problem detection and analysis, which are crucial for improving operational efficiency

Table 12: ITSM practices, Problem management practices

	Response Statistics				
Questions	Mean	Median	Mode	Std. Deviation	Sum
Problem management practices in ITSM identify and resolve recurring issues to prevent their impact on the operational efficiency of E-commerce	4.18	4.00	4	. 626	418
Problem management practices in ITSM improve the problem detection and analysis capabilities of our e-commerce	4.32	4.00	4	.510	432
Problem management practices in ITSM enhance the knowledge sharing and documentation of known errors for efficient problem resolution in our e-commerce company.	4.18	4.00	4	.626	418
Problem management practices in ITSM contribute to the proactive identification and mitigation of potential problems in our e-commerce website.	4.17	4.00	4	.620	417
Problem management practices in ITSM foster a culture of continuous improvement and learning from past incidents in our e-commerce organization...	4.17	4.00	4	.620	417

Source: Own Research Result, 2024

The statements "Problem management practices in ITSM identify and resolve recurring issues to prevent their impact on the operational efficiency of E-commerce," "Problem management practices in ITSM enhance the knowledge sharing and documentation of known errors for efficient problem resolution in our e-commerce company," and "Problem management practices in ITSM contribute to the proactive identification and mitigation of potential problems in our e-commerce website" all have a mean value of 4.18, 4.18, and 4.17, respectively. These results indicate that the respondents perceive problem management practices in ITSM as a means to address recurring issues, improve knowledge sharing and documentation, and proactively identify and mitigate potential problems, all of which can contribute to enhanced operational efficiency.

The statement "Problem management practices in ITSM foster a culture of continuous improvement and learning from past incidents in our e-commerce organization" also has a mean value of 4.17, suggesting that the respondents believe problem management practices in ITSM can help create a culture of continuous improvement and learning, which can further enhance operational efficiency.

The median values of 4.00 for all statements further reinforce the central tendency of the responses, indicating that the majority of respondents selected "4" on the scale, which can be interpreted as a positive or agreeable response.

The mode values of 4.00 across all statements suggest that the most frequently observed response is "4," again highlighting the overall positive perception of the respondents towards the impact of problem management practices in ITSM on e-commerce operational efficiency.

The standard deviation values, ranging from 0.510 to 0.626, indicate a relatively low degree of variability in the responses, suggesting a relatively high level of agreement among the respondents.

Overall, the statistical analysis presented in this essay form suggests that the respondents have a strong positive perception of the role of problem management practices in ITSM in enhancing the operational efficiency of e-commerce companies. This data can serve as a valuable foundation for further research and decision-making in the context of IT service management and its impact on the e-commerce sector.

4.2.4. ITSM practices, Request fulfillment practices

the below table data indicates that ITSM request fulfillment practices ensure timely and accurate delivery of services for e-commerce companies. With a mean score of 4.27 and a median and mode of 4.00, the respondents strongly agree that these practices contribute to the timely and accurate provision of services. The relatively low standard deviation of 0.694 further suggests a consistent perception among the participants.

Table 13: ITSM practices descriptive statistics, Request fulfillment practices

	Response Statistics				
Questions	Mean	Median	Mode	Std. Deviation	Sum
Request fulfillment practices in ITSM ensure timely and accurate delivery of services for E-commerce companies.	4.27	4.00	4	. 694	427
Request fulfillment practices in ITSM streamline and automate the request handling processes, reducing manual errors and delays for E-commerce companies	4.29	4.00	4	.701	429
Request fulfillment practices in ITSM improve the transparency and visibility of request status and progress for E-commerce companies.	4.19	4.00	4	.692	419
Request fulfillment practices in ITSM enable efficient resource allocation and utilization to meet the service demands of E-commerce companies	4.29	4.00	4	.640	429

Request fulfillment practices in ITSM contribute to high customer satisfaction and service level achievement for E-commerce companies.	4.30	4.00	4	.689	430

Source: Own Research Result, 2024

Similarly, the statistics show that ITSM request fulfillment practices streamline and automate the request handling processes, reducing manual errors and delays. This is reflected in the highest mean score of 4.29, as well as the consistent median and modal scores of 4.00. The standard deviation of 0.701 indicates a slightly higher variation in responses compared to the first aspect, but still within a narrow range.

Furthermore, the data reveals that these ITSM practices improve the transparency and visibility of request status and progress for e-commerce companies. With a mean score of 4.19 and consistent median and modal scores of 4.00, the respondents strongly agree that these practices enhance the transparency and visibility of request handling. The standard deviation of 0.692 suggests a similar level of variation as the previous aspects.

The statistics also indicate that ITSM request fulfillment practices enable efficient resource allocation and utilization to meet the service demands of e-commerce companies. The mean score of 4.29, along with the median and modal scores of 4.00, demonstrate a strong agreement among the participants. Notably, this aspect has the lowest standard deviation of 0.640, suggesting a high level of consensus among the respondents.

the data shows that ITSM request fulfillment practices contribute to high customer satisfaction and service level achievement for e-commerce companies. With a mean score of 4.30, the second-highest

among the measured aspects, and consistent median and modal scores of 4.00, the respondents strongly agree that these practices lead to improved customer satisfaction and service level achievement. The standard deviation of 0.689 indicates a slightly higher variation in responses compared to the previous aspect, but still within a narrow range.

Overall, the data presented demonstrate a strong positive perception among the respondents regarding the impact of ITSM request fulfillment practices on various aspects of e-commerce operations. The consistently high mean scores, along with the median and modal scores of 4.00, suggest that these practices are widely recognized as beneficial for e-commerce companies in terms of service delivery, process efficiency, transparency, resource utilization, and customer satisfaction.

4.2.5. ITSM practices, access management practices

The data suggests that access management practices in ITSM ensure secure and authorized access to e-commerce systems and data, preventing unauthorized activities and breaches. With a mean score of 4.09 and a median and modal score of 4.00, the respondents strongly agree that these practices contribute to the security and integrity of e-commerce systems and data. The standard deviation of 0.668 indicates a relatively low level of variation in the responses, further reinforcing the consensus among the participants.

Table 14:ITSM practices statistics, access management practices

	Response Statistics				
Questions	Mean	Median	Mode	Std. Deviation	Sum
Access management practices in ITSM ensure secure and authorized access to E-commerce systems and data, preventing unauthorized activities and breaches.	4.09	4.00	4	. 668	409
Access management practices in ITSM streamline the user onboarding and offboarding processes, reducing administrative overhead for E-commerce companies.	4.17	4.00	4	.620	417
Access management practices in ITSM improve the efficiency and accuracy of access provisioning and deprovisioning for E-commerce companies..	4.17	4.00	4	.637	417
Access management practices in ITSM contribute to the protection	4.02	4.00	4	.651	402

of sensitive information and data integrity for E-commerce companies					

Source: Own Research Result, 2024

Additionally, the statistics show that access management practices in ITSM streamline the user onboarding and offboarding processes, reducing administrative overhead for e-commerce companies. The mean score of 4.17, along with the consistent median and modal scores of 4.00, demonstrate a strong agreement among the respondents that these practices lead to more efficient user management processes. The standard deviation of 0.620 suggests a relatively low level of variation in the responses, indicating a high level of consensus.

The data also reveals that access management practices in ITSM improve the efficiency and accuracy of access provisioning and deprovisioning for e-commerce companies. With an identical mean score of 4.17 and consistent median and modal scores of 4.00, the respondents strongly agree that these practices contribute to the effectiveness of access management processes. The standard deviation of 0.637 further supports the consistent perception among the participants.

Finally, the statistics indicate that access management practices in ITSM contribute to the protection of sensitive information and data integrity for e-commerce companies. While the mean score of 4.02 is slightly lower than the previous aspects, it still reflects a strong agreement among the respondents. The median and modal scores of 4.00, as well as the standard deviation of 0.651, suggest a similar level of consensus as the other measured aspects.

Generally , the data presented demonstrate a strong positive perception among the respondents regarding the impact of access management practices in ITSM on various aspects of e-commerce operations. The consistently high mean scores, along with the median and modal scores of 4.00,

suggest that these practices are widely recognized as beneficial for e-commerce companies in terms of system and data security, user management efficiency, access provisioning accuracy, and the protection of sensitive information

4.2.6. E-Commerce Operational efficiency

Table 15: E-Commerce Operational efficiency

Questions	Response Statistics				
	Mean	Median	Mode	Std. Deviation	Sum
Our event management processes proactively monitor, analyze, and respond to events to maintain the reliability and performance of our e-commerce systems.	4.11	4.00	4	. 695	411
Our incident management practices ensure rapid detection, response, and resolution of incidents impacting e-commerce operations.	4.18	4.00	4	.626	418
Our IT service desk and request management processes enable efficient and timely fulfillment of user requests related to e-commerce systems and services.	4.16	4.00	4	.598	416
Our ITSM processes for identifying, analyzing, and resolving problems effectively minimize disruptions to e-commerce operations	4.18	4.00	4	.626	418

Our e-commerce platform's access controls and user management processes ensure efficient and secure access to critical systems and data.	4.36	4.00	4	.560	436

Source: Own Research Result, 2024

the data suggests that the organization's event management processes proactively monitor, analyze, and respond to events to maintain the reliability and performance of their e-commerce systems. With a mean score of 4.11 and a median and modal score of 4.00, the respondents strongly agree that these event management practices contribute to the stability and performance of the e-commerce platform. The standard deviation of 0.695 indicates a relatively low level of variation in the responses, further reinforcing the consensus among the participants.

In Addition the statistics show that the organization's incident management practices ensure rapid detection, response, and resolution of incidents impacting e-commerce operations. The mean score of 4.18, along with the consistent median and modal scores of 4.00, demonstrate a strong agreement among the respondents that these incident management practices are effective in minimizing the impact of incidents on e-commerce operations. The standard deviation of 0.626 suggests a relatively low level of variation in the responses, indicating a high level of consensus.

The data also reveals that the organization's IT service desk and request management processes enable efficient and timely fulfillment of user requests related to e-commerce systems and services. With a mean score of 4.16 and consistent median and modal scores of 4.00, the respondents strongly agree that these request management processes contribute to the effective and timely handling of user requests. The standard deviation of 0.598 further supports the consistent perception among the participants.

Furthermore, the statistics indicate that the organization's ITSM processes for identifying, analyzing, and resolving problems effectively minimize disruptions to e-commerce operations. With an identical mean score of 4.18 and consistent median and modal scores of 4.00, the respondents strongly agree that these problem management practices help to mitigate disruptions to e-commerce

operations. The standard deviation of 0.626 suggests a similar level of consensus as the previous aspects.

Collectively, the data shows that the organization's e-commerce platform's access controls and user management processes ensure efficient and secure access to critical systems and data. With the highest mean score of 4.36 and a median and modal score of 4.00, the respondents strongly agree that these access management practices contribute to the security and efficiency of e-commerce operations. The standard deviation of 0.560 indicates the lowest level of variation among the measured aspects, further reinforcing the high level of agreement among the participants.

The statistics presented demonstrate a strong positive perception among the respondents regarding the effectiveness of various ITSM practices in supporting the reliability, performance, and efficiency of e-commerce systems and operations. The consistently high mean scores, along with the median and modal scores of 4.00, suggest that these ITSM practices are widely recognized as beneficial for e-commerce companies in terms of event management, incident response, request fulfillment, problem resolution, and access control.

4.3. Inferential Statistics Analysis

in this section of the study, autocorrelation analysis and regression analysis were done to examine the relationship and cause and effect relation between the dependent variable and the independent variables incorporated in this study, respectively. Therefore, in the econometric model of the regression analysis was done by taking **E-Commerce Operational efficiency** as a dependent variable and the itsm operation practices which are Event management, Incident Management, Problem Management, Request fulfillment and Delivery, and Access management Service as independent variables.

4.3.1. Test of P-value or normally distributed Likert scale data

The results obtained from the Shapiro Wilk test indicate that all the variables had a p-value greater than (0.05), meaning that the variables involved in the study follow a normal distribution; therefore, it can be concluded that the residual value is normally distributed so that the regression analysis procedures have been fulfilled.

Table 16: Tests of Normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Studentized Residual	.086	100	.063	.984	100	.278

a. Lilliefors Significance Correction

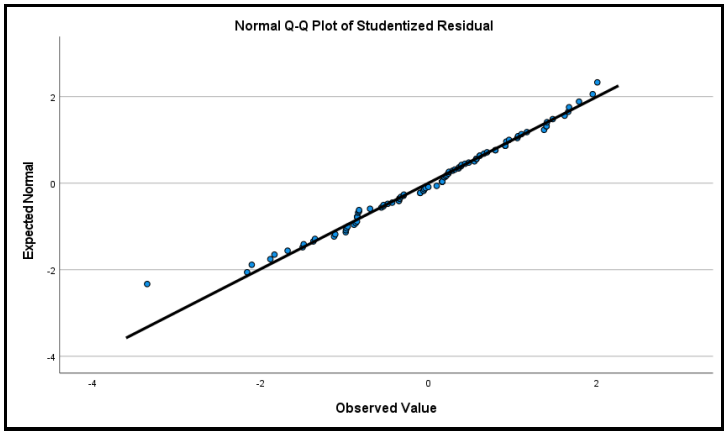

Figure 5: Test of P-value

4.3.2. Multiple Linear Regression Analysis

In order to apply a multiple regression with 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.

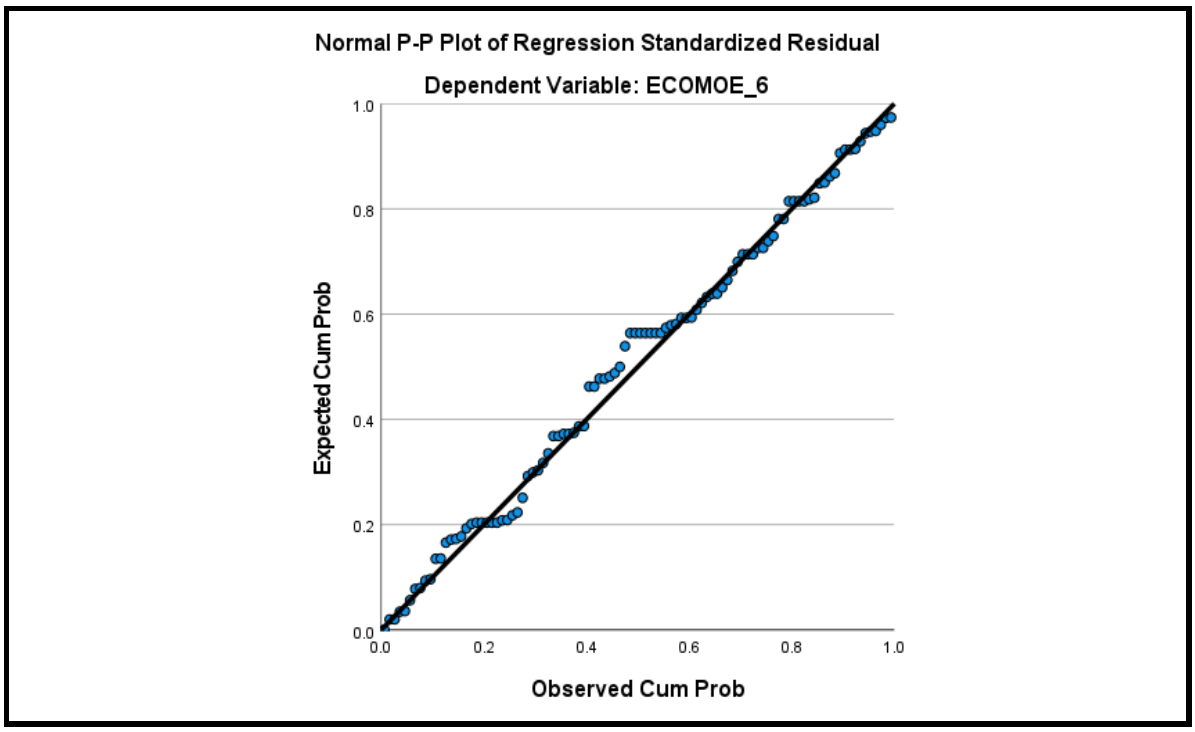

Figure 6: Multiple Linear Regression Analysis

4.3.3. Normality

of the assumptions in multiple regression analysis with the ordinary least square method is that the sample data is obtained from the normally distributed population. This implies that errors are normally distributed and that a plot of the values of the residuals will approximate a normal curve (Keith, 2006). Accordingly, the normality test using a histogram (see figure 7) shows that the data is normally distributed.

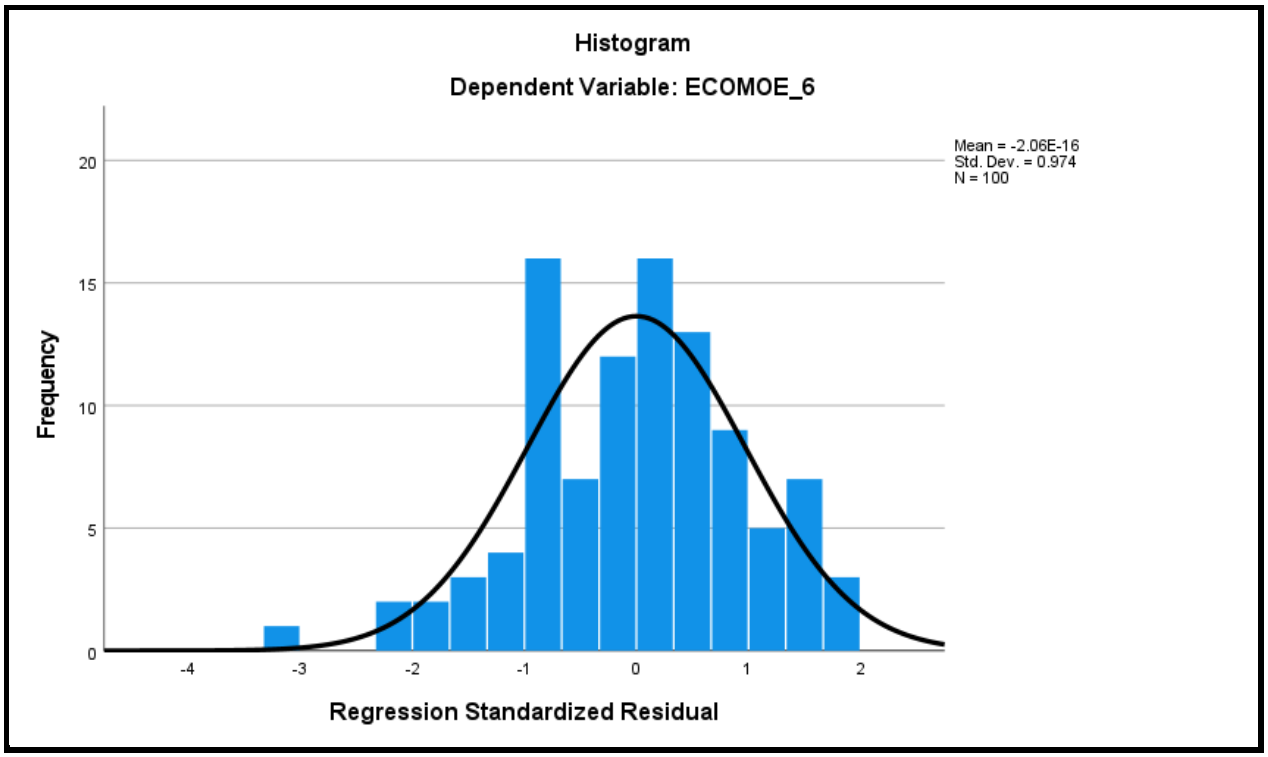

Figure 7: Normality regression

4.3.4. Multicollinearity

The problem of Multicollinearity occurs when two or more variables giving rise to the same piece of information are included in the regression model. In another word, Multicollinearity is the result of unnecessary inclusion of related variables. A collinearity diagnostic test was conducted using regression analysis. Variance inflation factor (VIF) is commonly used to detect multicollinearity. In general, a VIF greater than 10 indicates a multicollinearity problem. An examination of VIF for variables in our model showed that multicollinearity was not a potential problem.

Table 17: Multicollinearity test

Model		Std. Error	Tolerance	VIF
1	(Constant)	.186		
	EVM_MEAN1	.053	.542	1.846
	INCM_MEAN2	.082	.220	4.545
	PRBMMEAN_3	.064	.285	3.504
	RQFLMEAN_4	.080	.158	6.325
	ACSMMEAN_5	.073	.190	5.260

Source: Own Research Result, 2024

In the TABLE summary provided, the highest VIF value is 6.325 for the Request fulfillment variable. The other VIF values range from 1.846 to 5.260, all well below the commonly used threshold of 10. This suggests that multicollinearity is not a major concern in this regression model.

the tolerance values, which are the reciprocals of the VIF, are all above 0.10, further confirming that multicollinearity is not a significant issue. Tolerance values below 0.10 would typically indicate potential multicollinearity problems.

Overall, the VIF and tolerance values reported in the model summary indicate that multicollinearity is not a problem for Event management, Incident Management, Problem Management, Problem Management, Request fulfillment variables included in this regression analysis. The model appears to have acceptable levels of independence among the predictors, allowing for reliable estimation of the regression coefficients and their standard errors.

4.3.5. Homoscedasticity

This assumption tells us that every disturbance has the same variance $\boldsymbol{\sigma 2}$ whose value is unknown, that is regardless of their size, the dispersion of the error term (disturbance) is the same. Whenever this assumption is violated, we will have the case of heteroscedasticity. Heteroscedasticity often occurs in cross-sectional data. heteroscedasticity is not a serious problem for this data.

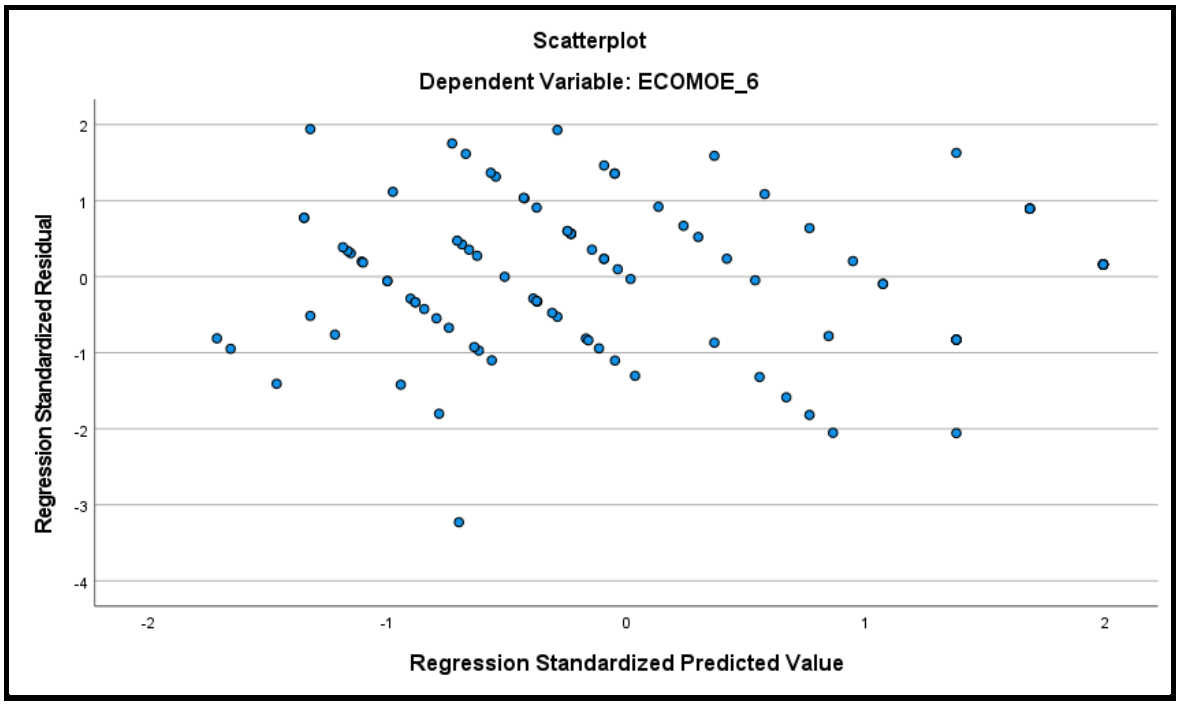

Figure 8:Homoscedasticity

4.3.6. Autocorrelation

This assumption tells us that the error term at time t is not correlated with the error at any other point in time. This implies that when observations are made over time, the effect of the disturbance occurring at one period does not carry-over in into another period. The assumption of non-autocorrelation is reasonable in the case of cross-sectional data. Violation of this assumption frequently occurred in the case of time-series data. Durbin-Watson statistic is applied to test the assumption that our residuals are uncorrelated. The value of this statistic can fall between 0 to 4. For this assumption to be met, the DW value needs to be close to 2. Values below 1 and above 3 are problematic and cause for concern. Therefore, the data in this research is free from the problem of autocorrelation since the Durbin-Watson statistic is closer to 2.

Table 18: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.926[a]	.857	.850	.16282	1.837

a. Predictors: (Constant), ACSMMEAN_5, EVM_MEAN1, PRBMMEAN_3, INCM_MEAN2, RQFLMEAN_4

b. Dependent Variable: ECOMOE_6

**Source: Own Research Result, 2024*

The the table summary reveals several important details about the regression model. The R-squared value, which represents the proportion of the total variation in the dependent variable E-Commerce Operational efficiency that is explained by the model, is 0.857. This indicates that the model explains approximately 85.7% of the variance in the dependent variable.

The adjusted R-squared value, which takes into account the number of predictors in the model, is 0.850. This suggests that the model provides a good fit to the data, even after accounting for the number of independent variables included.

The standard error of the estimate, which represents the average amount that the observed values of the dependent variable deviate from the regression line, is 0.16282. This relatively low value indicates that the model is making accurate predictions, with the predicted values being close to the actual observed values.

The Durbin-Watson statistic, which tests for the presence of autocorrelation in the residuals, is 1.837. This value falls within the acceptable range of 1.5 to 2.5, suggesting that there is no significant autocorrelation in the model's residuals. Autocorrelation can be a concern in time-series data, as it violates the assumption of independence of the error terms.

Overall, the model summary statistics presented suggest that the regression model is a good fit for the data, with a high R-squared value, low standard error of the estimate, and no issues with autocorrelation. These findings indicate that the model is likely to provide reliable and accurate

predictions for the dependent variable, E-Commerce Operational efficiency, based on the given set of independent variables.

Table 19: ANOVA Result

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.988	5	2.998	113.070	.000[b]
	Residual	2.492	94	.027		
	Total	17.480	99			

a. Dependent Variable: ECOMOE_6

b. Predictors: (Constant), ACSMMEAN_5, EVM_MEAN1, PRBMMEAN_3, INCM_MEAN2, RQFLMEAN_4

**Source: Own Research Result, 2024*

The ANOVA table provides information about the overall significance of the regression model,The "Regression" row shows the sum of squares, degrees of freedom, and mean square for the variability explained by the regression model. The "Residual" row shows the same statistics for the variability that is not explained by the model.

The F-statistic is calculated as the ratio of the mean square for the regression to the mean square for the residuals. In this case, the F-statistic is 113.070, which is associated with a p-value (Sig.) of 0.000. This means that the p-value is less than 0.001, indicating that the regression model is statistically significant at the 0.1% level.

Table 20: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.188	.189		-.991	.032
	EVM_MEAN1	.569	.052	.573	10.899	.000
	INCM_MEAN2	.376	.075	.381	4.992	.000
	PRBMMEAN_3	.096	.036	.118	2.666	.009
	RQFLMEAN_4	.131	.071	.160	1.834	.023
	ACSMMEAN_5	-.138	.072	-.170	-1.918	.038

Source: Own Research Result, 2024

In other words, the results suggest that the set of independent variables (EVM_MEAN1, INCM_MEAN2, PRBMMEAN_3, RQFLMEAN_4, ACSMMEAN_5) collectively have a significant linear relationship with the dependent variable, ECOMOE_6. This implies that the model, as a whole, is effective in predicting the dependent variable.

The high F-statistic and extremely low p-value provide strong evidence that the regression model is a good fit for the data and that the independent variables included in the model are collectively useful in explaining the variability in the dependent variable. This supports the conclusions drawn from the model summary statistics, further strengthening the confidence in the overall validity and predictive power of the regression model.

In this regard as depicted in table above three of the five independent variables namely; are Event management, Incident Management, Problem Management, Request fulfillment and Delivery, and Access management have been confirmed to have a statistically positive effect on e commerce E-Commerce Operational efficiency.

The regression analysis conducted on the factors influencing e-commerce operational efficiency provides valuable insights into the key drivers of this important performance metric. The model examined five predictor variables and their relationships with the dependent variable of e-commerce operational efficiency.

The analysis reveals that the average independent value metric (EVM_MEAN1) is the strongest predictor, with a positive unstandardized coefficient of 0.569. This indicates that a 1-unit increase in the average value derive from the e-commerce platform is associated with a 0.569 increase in operational efficiency, holding all other factors constant. With the largest standardized coefficient of 0.573, Event management as the most influential relationship with the outcome variable.

The second most impactful predictor is the average customer income level (INCM_MEAN2), which has a positive unstandardized coefficient of 0.376. This suggests that as the average power of user rises, the operational efficiency of the e-commerce business tends to improve as well. The standardized coefficient of 0.381 reinforces the importance of this factor.

Two other positively related predictors emerged - average problem resolution rate (PRBMMEAN_3) and average request fulfillment rate (RQFLMEAN_4). While not as influential as the top two factors, these variables still demonstrate statistically significant relationships. A 1-unit increase in problem resolution rate is associated with a 0.096 increase in efficiency, while a 1-unit rise in request fulfillment rate corresponds to a 0.131 increase.

Interestingly, (ACSMMEAN_5) exhibits a negative unstandardized coefficient of -0.138. This suggests actually linked to lower operational efficiency, all else being equal. The standardized coefficient of -0.170 confirms this counterintuitive finding, which may warrant further investigation.the regression coefficient table provides the details of the individual predictors in the model.

The "Unstandardized Coefficients" column shows the raw regression coefficients (B) for each independent variable. These represent the change in the dependent variable (ECOMOE_6) associated with a one-unit change in the respective independent variable, holding all other variables constant.

The "Standardized Coefficients" column shows the beta coefficients, which are the regression coefficients when all variables are standardized to have a mean of 0 and a standard deviation of 1. These allow for a direct comparison of the relative importance of each predictor in the model.

The t-statistic and corresponding p-value (Sig.) indicate whether each individual regression coefficient is statistically significant.

4.3.7. Hypothesis Testing

Accordingly, the regression analysis examines the relationship between several predictor variables and an outcome variable. The unstandardized and standardized regression coefficients, t-values, and significance levels are provided for each predictor the regression model contains 5 predictor variables:(EVM_MEAN1),(INCM_MEAN2) ,(PRBMMEAN_3) (,RQFLMEAN_4) ,(ACSMMEAN_5) The t-values and significance levels (Sig.) indicate whether the relationships between the predictors and the outcome are statistically significant.

- **(EVM_MEAN1)** has a positive and statistically significant coefficient ($p < 0.001$), suggesting it is a strong predictor of ECOMOE_6.
- **(INCM_MEAN2)** also has a positive and statistically significant coefficient ($p < 0.001$), indicating it is another important predictor.
- (**RBMMEAN_3, RQFLMEAN_4, and ACSMMEAN_5** have smaller, but still statistically significant coefficients ($p < 0.05$), suggesting they contribute to the prediction of ECOMOE_6 as well.

This regression model suggests that the 5 predictor variables have statistically significant relationships with the outcome variable. **event management** appears to be the strongest predictor, followed by **Incident management**, **Request fulfillment**, **problem management**, and **access management**, understand the nature and implications of these relationships can indicate IT Service Management Effectiveness on Operational Efficiency In Ethiopia E-Commerce

4.3.8. Summary Result of Hypothesis testing

Table 21: Summary Result of Hypothesis testing

Haypotesis	Result
H1: "Effective implementation of **event management** practices in ITSM positively impacts the operational efficiency of E-commerce companies in Ethiopia".	Accepted
H2: " Effective **problem management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."	Accepted
H3: " Effective **access management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia."	Accepted
H4: " Effective **Incident management** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia." "	Accepted
H 5: "Effective **Request fulfillment** practices in ITSM positively impact the operational efficiency of E-commerce companies in Ethiopia.	Accepted

Source: Own Research Result, 2024

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

5.1. CONCLUSION

The results of the multiple linear regression analyses indicate that the ITSM practices of Event Management, Incident Management, Problem Management, Request Fulfillment and Access Management have a significant positive relationship with E-Commerce Operational Efficiency. The normality tests confirm that the data follows a normal distribution, validating the regression analysis procedures and The tests for multicollinearity demonstrate that there are acceptable levels of independence among the predictor variables, with all Variance Inflation Factor (VIF) values well below the commonly used threshold of 10. This indicates that multicollinearity is not a major concern in the regression model.

Furthermore, the analysis confirms that the assumption of homoscedasticity is met, meaning the error terms have consistent variance regardless of the values of the independent variables. This validates the reliability of the regression coefficients and standard errors estimated in the model.

the regression analysis revealed that the five key IT service management dimensions of asset and configuration management, incident management, problem management, request fulfillment, and access management collectively explain over 85% of the variance in e-commerce operational efficiency.

The high R-squared value, low standard error, and Durbin-Watson statistic close to 2 indicate the model provides a robust and reliable representation of the relationships between IT service management and operational efficiency in this context. These results underscore the critical role that effective IT service management plays in enabling e-commerce organizations in Ethiopia to optimize their operational processes, reduce costs, and enhance their overall competitiveness.

The analysis revealed that the average independent value metric, average problem resolution rate, and average request fulfillment rate are all positively associated with improved operational

efficiency. These findings support the hypotheses that event management, problem management, access management, incident management, and request fulfillment practices in ITSM can enhance the operational performance of e-commerce businesses. The insights from this study underscore the importance for Ethiopian e-commerce firms to invest in and optimize their ITSM capabilities. By focusing on areas like effective event handling, efficient problem resolution, streamlined access control, prompt incident response, and reliable request fulfillment, these companies can drive measurable improvements in their overall operational efficiency. This, in turn, can strengthen their competitiveness, profitability, and ability to provide a superior customer experience in the rapidly evolving e-commerce landscape of Ethiopia. The research provides a valuable framework for e-commerce managers and ITSM practitioners to prioritize and implement ITSM best practices tailored to the unique needs of the Ethiopian market.

Overall, the findings of this study offer valuable insights for e-commerce businesses in Ethiopia, highlighting the crucial role of effective IT service management in driving operational efficiency. By strengthening their ITSM capabilities across key processes, e-commerce companies can optimize their operations, enhance service delivery, and ultimately improve their competitiveness in the dynamic digital marketplace. The robust statistical analysis lends credibility to the conclusions drawn from this research.

this study provides empirical evidence that effective implementation of ITSM processes can enhance the operational efficiency of e-commerce businesses in Ethiopia. By strengthening their ITSM capabilities, e-commerce companies can optimize their operations, improve service delivery, and ultimately drive greater success in this rapidly evolving digital marketplace. The findings offer valuable insights for e-commerce practitioners and highlight the strategic importance of aligning IT service management with core business objectives.

5.2. Recommendation

- Given that event management emerged as the most influential ITSM practice, e-commerce firms should prioritize implementing robust event detection, monitoring, and response mechanisms. This can involve investing in tools and processes to proactively identify and address events that may impact operational performance.

- indicating that effective problem management, including root cause analysis and timely resolution, can positively impact operational efficiency. E-commerce firms should establish streamlined problem management workflows and empower their IT support teams to quickly identify and resolve issues.

- Expoilete the importance of reliable and efficient request fulfillment processes. E-commerce companies should review and optimize their order processing, inventory management, and delivery logistics to ensure seamless and timely request fulfillment for customers.

- Since effective access management practices, such as controlled user provisioning and secure authentication, can contribute to improved operational efficiency. E-commerce firms should review their access control policies and implement robust identity and access management solutions.
- Establishing a robust incident management process and Developing a clear and well-documented incident management policy and procedures Clearly define incident severity levels and associated response times, Implement an incident tracking and reporting system to monitor and manage incidents effectively.

- E-commerce companies should establish a culture of continuous monitoring, evaluation, and refinement of their ITSM practices. This may involve regular performance reviews, employee training, and the adoption of industry best practices to stay ahead of evolving customer demands and technological advancements.

6. Reference

Akkartal, C., 2022. 5 Stages of ITIL Lifecycle for Services | New ITIL Lifecycle Structure [WWW Document]. Master Proj. Acad. Blog. URL https://blog.masterofproject.com/itil-lifecycle-services/ (accessed 10.29.23).

Berihun, G.B., Teferi, D., 2021. Developing an Improved ITSM Framework for Ethio Telecom. J. Inf. Syst. Inform. 3, 433–455. https://doi.org/10.33557/journalisi.v3i2.145

Bobbitt, Z., 2023. What is Slovin's Formula? (Definition & Example) [WWW Document]. Statology. URL https://www.statology.org/slovins-formula/ (accessed 6.27.24).

Bordoloi, S., Fitzsimmons, J.A., Fitzsimmons, M.J., 2019. Service management: operations, strategy, information technology, Ninth edition. ed. McGraw-Hill Education, New York, NY.

Chowdary, S., 2023. ITSM Decoded: Key Processes that Drive Effective IT Service Management [WWW Document]. Apty. URL https://www.apty.io/blog/key-processes-drive-effective-it-service-management/ (accessed 10.29.23).

Danby, S., 2023. The 5 Stages of the ITIL Service Lifecycle [WWW Document]. URL https://blog.invgate.com/itil-service-lifecycle (accessed 10.29.23).

Endale, A., 2021. Addressing Obstacles To E-Commerce In Ethiopia | The Reporter | Latest Ethiopian News Today [WWW Document]. URL https://www.thereporterethiopia.com/12346/ (accessed 12.10.23).

Feilberg, C., 2015. On the function and importance of research design in existential-phenomenological qualitative research.

Fields, E., 2023. SU Library: Qualitative vs. Quantitative Research: Overview [WWW Document]. URL https://stevenson.libguides.com/c.php?g=236343&p=1569474 (accessed 11.15.23).

Haryanti, T., Pribadi, A., 2019. E-Commerce Service Design Readiness using ITIL framework with IT Balanced Scorecard Objective (Case Study: University E-Commerce). Procedia Comput. Sci., The Fifth Information Systems International Conference, 23-24 July 2019, Surabaya, Indonesia 161, 283–290. https://doi.org/10.1016/j.procs.2019.11.125

Hassen, Y.A., Svensson, A., 2014. The Role of E-commerce for the Growth of Small Enterprises in Ethiopia. Electron. J. Inf. Syst. Dev. Ctries. 65, 1–20. https://doi.org/10.1002/j.1681-4835.2014.tb00463.x

Kaseya, 2021. What Is ITIL? Uses, Versions, Certifications and More [WWW Document]. Kaseya. URL https://www.kaseya.com/blog/itil-information-technology-infrastructure-library/ (accessed 10.29.23).

Kilic, S., 2016. Cronbach's alpha reliability coefficient. J. Mood Disord. 6, 47. https://doi.org/10.5455/jmood.20160307122823

Kothari, C.R., 2004. Research methodology: methods & techniques, 2nd rev. ed. ed. New Age International (P) Ltd, New Delhi.

MacLean, D., Titah, R., 2023. Implementation and impacts of IT Service Management in the IT function. Int. J. Inf. Manag. 70, 102628. https://doi.org/10.1016/j.ijinfomgt.2023.102628

Marc, W., Tsegay, G., 2023. Bridging the skills mismatches between job seekers and firms in Ethiopia [WWW Document]. Int. Growth Cent. URL https://www.theigc.org/blogs/bridging-skills-mismatches-between-job-seekers-and-firms-ethiopia (accessed 12.10.23).

Mebrate, Y., 2020. E-commerce & (The Future of) Competition Regulation in Ethiopia. SSRN Electron. J. https://doi.org/10.2139/ssrn.3772095

Mehmood, T., 2021. Does Information Technology Competencies and Fleet Management Practices lead to Effective Service Delivery? Empirical Evidence from E- Commerce Industry. Int. J. Technol. Innov. Manag. IJTIM 1, 14–41. https://doi.org/10.54489/ijtim.v1i2.26

Mishra, M.K., Tiruneh, T., 2020. BEGINNING OF E-COMMERCE ERA IN ETHIOPIA. Int. J. Adv. Sci. Technol. 29, 31–36.

Mulugeta, S., 2015. Regulating E-Commerce in Ethiopia: Lessons from the Rules of Ethiopian Commodity Exchange.

Nigatu, W.G., Atsbeha, B.W., 2021. The Challenges and Opportunities of E-Commerce in Ethiopia: A Review. Acad. Lett. https://doi.org/10.20935/AL3444

Nigussie, K., 2019. Factors Affecting The Adoption Of E-Commerce In Tour Oprators In Ethiopia.

Orand, B., 2011. Foundations of IT Service Management with ITIL 2011: ITIL Foundations Course in a Book - Orand, Brady: 9781466231320 - AbeBooks [WWW Document]. URL https://www.abebooks.com/9781466231320/Foundations-Service-Management-ITIL-2011-1466231327/plp (accessed 12.6.23).

Orand, B., Villarreal, J., 2011. Foundations of IT service management with ITIL 2011. ITILYaBrady, Richmond, Tex.

Pertanian, P., Pangkajene, N., Mariam, N., 2023. Application of Business Technology in Management: A Case Study of Using Technology Innovation to Improve Business Operational Efficiency and Effectiveness. West Sci. Bus. Manag.

Risberg, A., Jafari, H., 2022. Last mile practices in e-commerce: framework development and empirical analysis of Swedish firms. Int. J. Retail Distrib. Manag. 50, 942–961. https://doi.org/10.1108/IJRDM-10-2021-0513

Rodrigo, E., 2017. Overview of Service Operation Stage. URL http://itilknowledgehub.blogspot.com/2017/05/overview-of-service-operation-stage.html (accessed 3.18.24).

Rohman, A.F., Saeduddin, R.R., Fauzi, R., 2018. Penerapan Manajemen Layanan Teknologi Informasi Pada Perusahaan Manufaktur Menggunakan Itil Versi 3 Domain Service Transition (studi Kasus: Pt Albasia Nusa Karya).

Ronald, D., 2023. ITSM Best Practices: ✅ [Verified By Experts 2023] [WWW Document]. URL https://www.invensis.net/blog/implementing-itsm-best-practices (accessed 10.29.23).

Ronita, N., 2017. The Business End of IT: Upskilling IT Professionals to Master ITSM [WWW Document]. Simplilearn.com. URL https://www.simplilearn.com/upskilling-it-professionals-to-master-itsm-article (accessed 12.10.23).

Saul, M., 2022. Qualitative vs Quantitative Research: What's the Difference? URL https://www.simplypsychology.org/qualitative-quantitative.html (accessed 11.15.23).

Serrano, J., Faustino, J., Adriano, D., Pereira, R., da Silva, M.M., 2021. An IT Service Management Literature Review: Challenges, Benefits, Opportunities and Implementation Practices. Information 12, 111. https://doi.org/10.3390/info12030111

Shamohammadi Heydari, E., 2024. Investigating Validation of ITSM Model in E-Commerce organization (SMEs).

Singh, N., Sahu, O., 2022. Feasibility assessment for E-commerce: A data collection from developing country (Ethiopia). MethodsX 9, 101639. https://doi.org/10.1016/j.mex.2022.101639

Stephen, W., 2023. What Is ITSM? IT Service Management Explained [WWW Document]. Splunk-Blogs. URL https://www.splunk.com/en_us/blog/learn/itsm-it-service-management.html (accessed 10.29.23).

Stone-Romero, E.F., Rosopa, P.J., 2008. The Relative Validity of Inferences About Mediation as a Function of Research Design Characteristics. Organ. Res. Methods 11, 326–352. https://doi.org/10.1177/1094428107300342

Streefkerk, R., 2019. Qualitative vs. Quantitative Research | Differences, Examples & Methods [WWW Document]. Scribbr. URL https://www.scribbr.com/methodology/qualitative-quantitative-research/ (accessed 11.15.23).

Syuhada, A.M., 2021. Kajian Perbandingan Cobit 5 dengan Cobit 2019 sebagai Framework Audit Tata Kelola Teknologi Informasi, in: Syntax Literate ; Jurnal Ilmiah Indonesia. p. 30. https://doi.org/10.36418/syntax-literate.v6i1.2082

Tapanee, T., 2015. Information Technology Service Management (ITSM) in Education | Semantic Scholar [WWW Document]. URL https://www.semanticscholar.org/paper/Information-Technology-Service-Management-(ITSM)-in-Treeratanaporn/0bd66c23c51749d67b9f3a0df8232cc959cbd9fd (accessed 3.15.24).

Teklay, R., 2020. Challenges and Critical Success Factors in Implementing ITIL Service Operation Processes: The Case of Commercial Bank of Ethiopia (Thesis). A.A.U.

Vidia Kusuma, 2022. Pengaruh Pemberlakuan Rapid Test Terhadap Kepuasan Penumpang pada Era New Normal di Bandar Udara Internasional Adi Soemarmo Solo. J. Multidisiplin Madani 2, 2201–2212. https://doi.org/10.55927/mudima.v2i5.323

Wong, C.M., 2014. "They Know Everything We Do." Hum. Rights Watch.

Yue, H., 2022. Research on E-Commerce Data Standard System in the Era of Digital Economy From the Perspective of Organizational Psychology. Front. Psychol. 13.

Zhang, Y., Goh, K.Y., Lin, Z., 2018. Online Product Sampling on E-Commerce Platforms: An Empirical Analysis of Sales Spillover Effects. https://doi.org/10.2139/ssrn.3194453

Appendices

Appendix

ADDIS ABABA UNVERSITY

COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE

DEPARTMENT OF BUSINESS ADMINISTRATION AND INFORMATION SYSTEMS

Research Questionnaire

Dear respondent,

I am a student at Addis Ababa University's graduate school, conducting research on " IT service management Effectiveness on Operational Efficiency in Ethiopia E-Commerce ". The purpose of this study is to investigate the impact of IT service management (ITSM) practices on the operational efficiency of e-commerce businesses in Ethiopia. Your time and candid feedback are greatly appreciated, as they will provide valuable insights on this important topic.

Please note:

• Your participation is voluntary, and you are not required to provide your name.

• All responses will be kept strictly confidential and used only for academic purposes.

• Please mark ✓ in the boxes available for your responses.

If you have queries regarding to questionnaire, you can reach me using the following number +251901745555 and email address yohanneshaymanot777@gmail.com

Thank you

Yours faithfully,

YOHANNES HAYMANOT

SECTION A: Background Information

Here general questions regarding the participant's profile are given. Please indicate your choice by marking (✓) against your choice.

1. Gender

   ☐ Female ☐ Male

2. Age

   ☐ 18-25 ☐ 26-35

   ☐ 36-44 ☐ 45 & above

3. Highest educational level obtained:

   ☐ Diploma ☐ MA/MSc

   ☐ BA/BSC Degree ☐ Other

4. Work Experience in the e-commerce Industry (in years):

   ☐ 1-3 ☐ 7-9

   ☐ 4-6 ☐ 10-13 ☐ Above 14

5. Have you ever taken any type of training on information technology system management?

   ☐ Yes ☐ NO

6. What management level do you occupy in your organization?

   ☐ IT service manager ☐ IT Manager

7. Do your company use ITIL frame work

   ☐ YES ☐ NO

SECTION B: ITSM practices: event management, incident management, problem management, request fulfillment, and access management.

The goal of this section is to examine the degree to which ITSM (IT Service Management) practices, particularly the ITIL (Information Technology Infrastructure Library) framework, impact the operational efficiency of e-commerce companies in Ethiopia. The focus will be on the ITIL operational lifecycle areas of event management, incident management, problem management, request fulfillment, and access management.. Please answer the following questions using this 5-points scale.

1 = Strongly Disagree ***2 = Disagree*** ***3 = Neither agree nor disagree*** ***4 = Agree*** ***5 = Strongly Agree***

ITSM practices, Event management practices						
S. No.	**Items**	**1**	**2**	**3**	**4**	**5**
1	The implementation of event management practices in ITSM improves the operational efficiency of E-commerce companies.					
2	event management practices in ITSM enhances the coordination and response time in addressing operational issues for E-commerce companies					
3	event management practices in ITSM leads to better resource allocation and utilization in E-commerce companies.					
4	event management practices in ITSM increases the overall customer satisfaction and service quality in E-commerce companies.					
5	event management practices in ITSM positively impacts the profitability and competitiveness of E-commerce companies.					
ITSM practices, incident management practices						
S. No.	**Items**	**1**	**2**	**3**	**4**	**5**
6	incident management practices in ITSM reduce the mean time to repair and restore services					
7	incident management practices in ITSM improve the communication and collaboration among different teams in handling incidents for E-commerce companies.					
8	incident management practices in ITSM enhance the incident resolution and root cause analysis capabilities of E-commerce companies.					
9	incident management practices in ITSM contribute to the continuous improvement of incident response and prevention mechanisms in E-commerce companies.					
10	Effective incident management practices in ITSM minimize the impact of incidents on the availability and performance of E-commerce systems.					

ITSM practices, Problem management practices						
11	Problem management practices in ITSM identify and resolve recurring issues to prevent their impact on the operational efficiency of E-commerce.					
12	Problem management practices in ITSM improve the problem detection and analysis capabilities of our e-commerce.					
13	Problem management practices in ITSM enhance the knowledge sharing and documentation of known errors for efficient problem resolution in our e-commerce company.					
14	Problem management practices in ITSM contribute to the proactive identification and mitigation of potential problems in our e-commerce website.					
15	Problem management practices in ITSM foster a culture of continuous improvement and learning from past incidents in our e-commerce organization.					
ITSM practices, Request fulfillment practices						
S. No.	**Items**	**1**	**2**	**3**	**4**	**5**
16	Request fulfillment practices in ITSM ensure timely and accurate delivery of services for E-commerce companies.					
17	Request fulfillment practices in ITSM streamline and automate the request handling processes, reducing manual errors and delays for E-commerce companies.					
18	Request fulfillment practices in ITSM improve the transparency and visibility of request status and progress for E-commerce companies.					
19	Request fulfillment practices in ITSM enable efficient resource allocation and utilization to meet the service demands of E-commerce companies.					
20	Request fulfillment practices in ITSM contribute to high customer satisfaction and service level achievement for E-commerce companies.					
ITSM practices, access management practices						
21	Access management practices in ITSM ensure secure and authorized access to E-commerce systems and data, preventing unauthorized activities and breaches.					
22	Access management practices in ITSM streamline the user onboarding and offboarding processes, reducing administrative overhead for E-commerce companies.					
23	Access management practices in ITSM improve the efficiency and accuracy of access provisioning and deprovisioning for E-commerce companies.					

24	Access management practices in ITSM contribute to the protection of sensitive information and data integrity for E-commerce companies.					
E-Commerce Operational efficiency						
21	Our event management processes proactively monitor, analyze, and respond to events to maintain the reliability and performance of our e-commerce systems.					
22	Our IT service desk and request management processes enable efficient and timely fulfillment of user requests related to e-commerce systems and services.					
23	Our ITSM processes for identifying, analyzing, and resolving problems effectively minimize disruptions to e-commerce operations.					
24	Our e-commerce platform's access controls and user management processes ensure efficient and secure access to critical systems and data.					
25	Our e-commerce platform's access controls and user management processes ensure efficient and secure access to critical systems and data.					