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ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

**ASSESSMENT ON THE EFFECT OF ELECTRONIC SINGLE
WINDOW IMPLEMENTATION**

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ADVISOR: DR. DEJENE MAMO

Jun, 2021

Addis Ababa, Ethiopia

ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

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ID NO: SGS/0693/2012A

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**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF
GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTERS IN PROJECT
MANAGEMENT.**


Jun, 2021

Addis Ababa, Ethiopia

ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES FACULTY OF BUSINESS
ASSESSMENT OF THE IMPACT OF ELECTRONIC SINGLE WINDOW
IMPLEMENTATION

By: Hana Yigezu

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DECLARATION

I, the undersigned, declare that this thesis entitled; ‘Assessment of the Impact of Electronic Single Window Implementation is my original work, prepared under the guidance and support of my Advisor Dr. Dejene Mamo. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Student’s Name

Signature

St. Mary’s University, Addis Ababa

June, 2021

ACKNOWLEDGEMENTS

First and foremost, I thank the almighty God for his protection and health in this difficult time of COVID-19 pandemic. It is also my pleasure to thank all who devoted their time and energy in assisting me to the accomplishment of this research paper. I also would like to thank my advisor, Dr. Dejene Mamo for his unreserved efforts in providing me critical review, relevant advice and valuable comments since the inception of this thesis work. Further, this study could not be completed without love, support and encouragement of my parents. Furthermore, I appreciate and acknowledge my close friends Hermela Yohannes and Muluken Tilahun without. Finally, I wish to extend my regards to the study participants who provide me all the necessary information without any kind of inhibitions.

LIST OF ABBREVIATIONS

CSF - Critical Success Factors

DB - World Bank Doing Business

EDI- Electronic Data Interchange

ECC - Ethiopian custom commission

eSW - electronic single window

ESCWA -United Nations Economic and Social Commission for Western Asia

GVCs - Global value chains

GDP - Gross domestic product

MNSW - Maritime National Single Window

MTI - Macroeconomics, Trade & Investment SWS -Single window system

NSW - National Single Window

PCS - Port Community Systems

SWC – single window concept

TTCs - Trade transaction costs

TFSP - Trade Facilitation Support Program

UNCTAD United Nations Commission on Trade and Development

UNECE United Nations Economic Commission for Europe

WTO TFA - World Trade Organization Trade Facilitation Agreement

WCO- World customs organization

VANs - Value Added Networks

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ABSTRACT

The purpose of this study was to assess the effect of electronic single window implementation on trade process. The study analyzed the effect of electronic single window on time of clearance, cost of clearance and its other effect on trade process. The analysis of the study was conducted from trader's perspectives. A total of 100 questionnaire distributed to the traders' those selected in purposive sampling from different import and or export companies of Addis Ababa, from this 11 questions were not completed. The data analysis was conducted through statistical techniques such as descriptive statistics, relative important index (RII), standard deviation and mean value using SPSS version 20. The result revealed that implementation of electronic single window have a positive effect on time of clearance, cost of clearance and on other trade process. The outcome of the study indicated that the introduction of the electronic single window reduced time of clearance from 9 days to 5 days in average which reduced 4 days (44.4%). And cost of clearance is significantly reduced from 5000 to below 1000 Br which reduced above 80% of previous cost of accomplishing the same activity. Total reduction of time of clearance is contributed from eliminating multiple physical inspection with 35%, reducing repetitive document submission with 37% and by creating paperless environment with 28%. And reduction of cost of clearance is contributed from reduced cost of delay with 24 %, reduced cost of paper with 29%, and reduced transport cost with 28% and 19% from reduced cost of executives.

Keywords: Single Window System, Traders Perception, Trade process, Time of clearance, Cost of clearance

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

According to Daniel Sakyi et al (2019), Institutional trade barriers constitute substantial constraints for a number of exporters and importers. The processes of importation and exportation involve the exchange of information and documents between different institutions that each of them have their own work procedures and special forms and these blocks are multidimensional and they impede trade flows and trade performance of many developing countries, including African countries (Asghar et al, 2014).

According to Yakop et al (2011) trade facilitation is an important trade strategy because of the systematic market and coordination failures emanating from information asymmetry. This market failure is more likely affect trade adversely. However, market opportunity can be created through trade agreement, but it hinders to utilize their resource effectively without trade facilitation (Afesorgbor, 2018).

Many Governments around the world recognize that making trade across borders easier and safer is essential for business and to increase national trade participations and competitiveness by simplifying their trade and transport procedures and document requirements, it is important to set up strategies which is concerned with safety and security for improvement trade facilitation (UNESCAP/UNECE, 2012). The establishment of electronic single window is one of the best possible approaches to solve these barriers. Considering the fact that a single window collects all representatives of adjacent organizations under one roof; as a result, the possibility of obtaining the necessary permits to clearance of goods becomes easier and also prevents the import of non-standard goods (Asghar et al, 2014).

Trade Facilitation Support Program (TFSP) was launched in June 2014 with the World Trade Organization Trade Facilitation Agreement (WTO TFA) to support developing countries in aligning their trade practices and demand driven assistance. This program helps developing countries to benefit from increased trade and foreign investments that result in increased private

sector trade competitiveness. The program provides supports for over 47 developing countries, most of countries receiving support are in Sub-Saharan Africa (26%) including Ethiopia.

According to World customs organization (WCO, 2011) the effectiveness of the operational procedures of customs have a great influence in the movement of border crossing goods across the world. So operational procedures of customs have main role in optimization of trade facilitation and control. Since, trade facilitation is defined as simplification and harmonization of international trade procedures. According to Reddy (2019) trade facilitation is not only operated by custom procedures. It is operated in different environments .such environments are regulatory agencies, service area and ports. The efficiency of these environments can significantly influences the movement trade across national border.

As part of the government's commitment to improve investment and trade, the Ethiopian Customs Commission developed an electronic single window (eSW) for trade. The project started in 2017 with financing of the World Bank Group. The eSW system connects the 16 major cross-border regulatory agencies. The system enables traders to submit documentation and receive electronic permits relating to import and export through a single window submission. And the system also reduces time and cost of trade and enhance efficiency in trade logistics landscape of the country by speeding the customs process for importers and exporters. (<https://worldbank.org/en/news/feature/2020.04/23>).

Ethiopian custom commission (ECC) has come into existence by proclamation number 1097/2018 which is separated from the earlier Ethiopian revenues and custom authority headed by a commissioner accountable to ministry of revenues by possessing its own vision and mission (www.devex.com). According to ECC eSW, can help Ethiopia to integrate better into global value chains (GVCs) as a result of simplified exporting and importing. Since, eSW improve trade facilitation through enhance the competitiveness of Ethiopian products by streamlining customs clearance and logistics procedures for importers, exporters and manufacturers as a result of creating a paperless environment, eliminating multiple physical inspections and repetitive document submissions, reduce clearance times and compliance costs for traders.

1.2 Statement of the Problem

According to Buyonge et al. (2008) in most of African countries trade facilitation and regulatory control are the challenging issues and a cause of delays and high transaction. Since, their customs administrations are characterized by excessive documentary requirements; outdated procedures, lack of automation and insignificant use of information technology, lack of transparency, predictability and consistency, as well as lack of cooperation with other government agencies (Wondwossen, 2013). This results in the waste of huge amount of time and money.

According to the study conducted by Tsegaye and Endris (2011) Ethiopia is one of the countries with excessive challenges in cross border trade. Ethiopia customs delay are the longest in the sub Saharan Africa, in average which is more than 30 days traders wait customs to clear goods World Bank (2013). This excessive delay is a serious challenge for business that significantly depress them because of the inefficient coordination and cooperation among customs within and between themselves, and other governmental agencies that inspect the same goods more than three and above as a result the shipment wait for a longer time to clear the customs and these delays are associated with attendant cost that can significantly affect the competitive position of the trading community WCO (2015).

The high cost of doing business was mainly associated with the number of documents involved in the import and export business coupled with the number of agencies that the shipper needed to submit documents to in the import and export business (Rhodalyn, 2018).

The ability of countries to deliver goods and services on time and at the lowest possible cost is a key determinant of integration into the world economy today (Roy and Bagai, 2005). The Single Window concept, which enables all stakeholders involved in the business process to exchange data and information only once (by using a single point of data entry and storage) has significantly changed the process of information exchange between stakeholders taking into consideration the importance of business confidentiality, security and data protection. So, the application of single window systems has been promoted as one of the most important solutions for trade facilitation and, in the same way, for ensuring its security. The system has potential to harmonize and standardize the information exchange between commercial and administrative stakeholders and to provide fast, reliable, paperless, and efficient transactions (Edvard et al., 2019).

Since, the research area is new and unfamiliar, any of the researches that previously conducted did not yet identify the impact of electronic single window implementation from trader's perspective in case Addis Ababa, Ethiopia. Therefore, the main purpose of this study is to assess the impact of electronic single implementation on trade process and the analysis is from trader's perspective.

1.3 Research Questions

- What is the effect of change in time of clearance after the implementation of electronic single window?
- What is the effect of change in cost of clearance after the implementation of electronic single window?
- What is the overall situation of trade process after the implementation of electronic single window?

1.4 Objective of the Study

1.4.1 General objective of the study

To assess the impact of electronic single window implementation from traders perspective.

1.4.2 Specific objective of the study

- To assess the effect of electronic single window implementation on time of clearance
- To assess the effect of electronic single window implementation on cost of clearance
- To evaluate the overall situations of electronic single window on trade process.

1.5 Significance of the Study

The study assesses the impact of electronic single window implementation from traders' perspective. Traders/ customer perception is very important to find out disconfirmation level. As outlined in the general discussion of customer satisfaction, consumers compare their initial expectations of likely value against their perception of the actual value they received when they consumed or used the product or service. In other word the study evaluates perception of traders after implementation of electronic single window relative to objectives of single window implementation, which is improving efficiency and effectiveness of official controls and reduce

costs both for Governments and for traders due to better use of resources (UN/CEFACT, 2011). The purpose of this study is also to create awareness and better understand about electronic single window and its effect on trade facilitation. And to provide useful information for policy makers and stakeholders in trade facilitating, shipping and filed logistics on their decision making towards efficient and proper resource utilization. And also the study can used as an additional reference to the existing researches in the same area.

1.6 Scope of the Study

The study has only focused on the assessing the impact of electronic single window implementation from traders' perspective. The study has focused in Addis Ababa some selected trading companies due to scarce of resources and time constraints. The study specifically focuses on the effect of electronic single window implementation on time and cost of clearance from trader's point of view. In addition to this the researcher point out other outcome of the electronic single window implementation on trade process.

1.7 Limitation of the Study

The unavailability of adequate literatures on the impact of electronic single window on Ethiopian experiences, were the major constraints of this study. The exercise also consumed much money and time; the reasons for this were due to short time pace and financial limitations. The study also limited on trader's perspective.

1.8 Organization of the Study

The study has five chapters. Chapter one deals with the introduction part which contains, the background of the study, statement of problem, objective of the study, scope of the study, significance of the study and limitation. Chapter two summarized review of related literatures about electronic single window. Chapter three includes methodology part under this research approach, research design, data type and source, target population, sampling technique and size, data collection instrument, data analysis and presentation reliability and validity of the study. Chapter four deals with the data analysis, presentation and interpretation of finding of the study based on research objective and question. The last chapter includes summary, conclusion and Recommendation of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Concept of Electronic Single Window

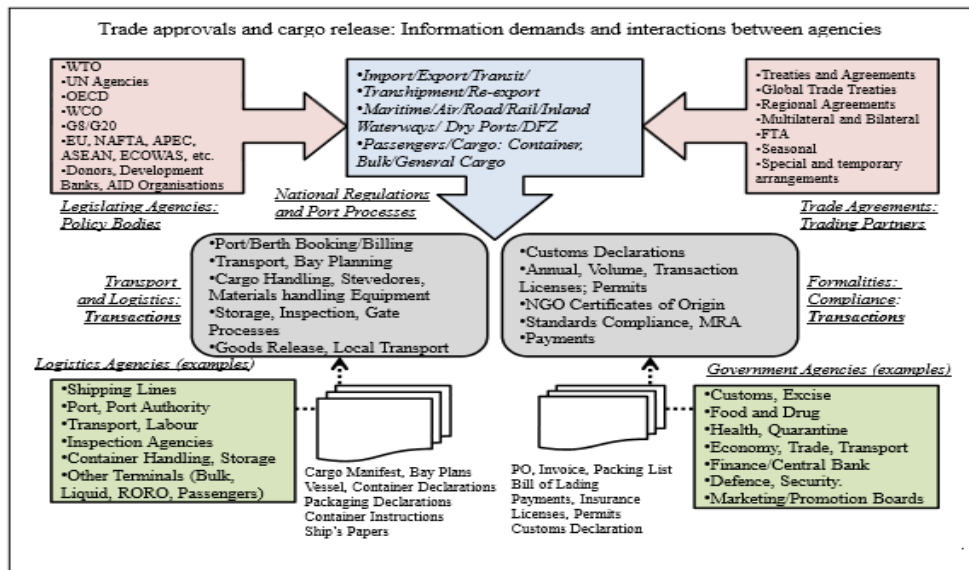
A Single Window System is a trade facilitation tool that allows parties involved in international trade to submit data required by the government through a single platform only once to fulfill regulatory requirements or to use government services (Ahn & Han, 2007).

United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) (2005, p. 3) describes SWS as "a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements. If the information is electronic, then individual data elements should only be submitted once." (ESCWA, 2011).

According World Customs Organization (WCO, 2018), SWS concept is a trade facilitation tool that permits the trader or transporter to submit all the data needed for determining acceptability of the goods in a standardized format only once to the authorities involved in border controls and at a single portal. In another definition the WCO also describe the SWS as "A Single Window Environment is a cross-border, 'intelligent', facility that allows parties involved in trade and transport to lodge standardized information, mainly electronic, with a single entry point to fulfil all import, export and transit-related regulatory requirements" (WCO, 2011).

According to the World Bank Doing Business (DB) 2017, the single window concept has expanded to include the complete evolution of electronic systems including trade point portals, customs automation, electronic data interchange techniques, institutional -specific single window, and national single windows, regional and global single windows. The DB (2017,) therefore, defined the SWS as "a system that receives trade-related information and disseminates it to all the relevant governmental authorities, thus systematically coordinating controls throughout trade processes."

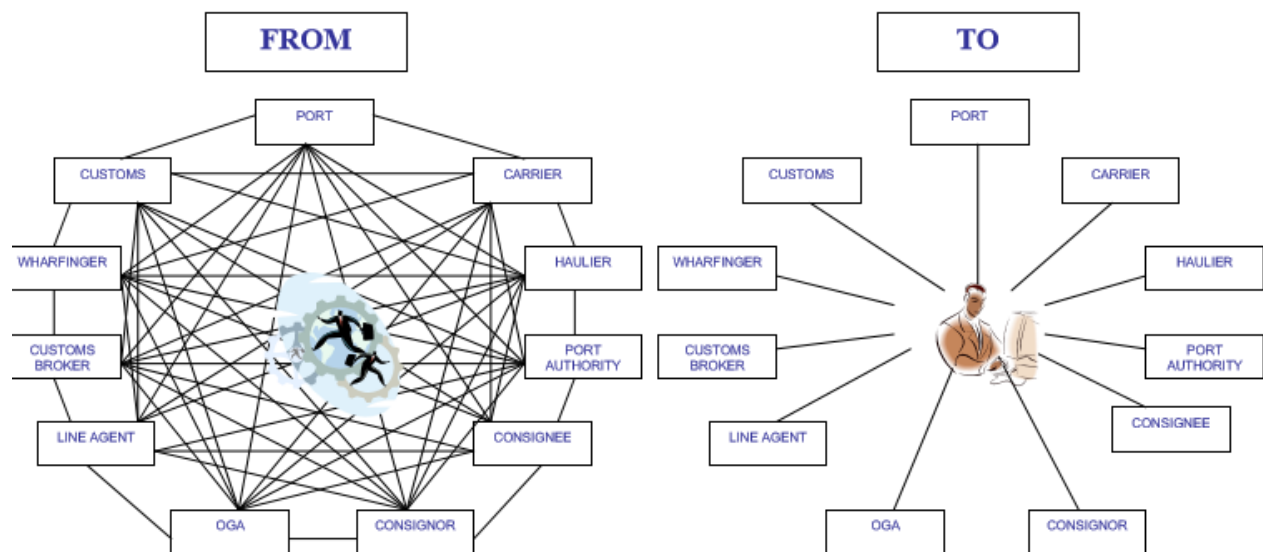
Figure 2.1 Full function of single window for trade processing



Source; ESCWA, 2011

A single window is designed to overcome this complex system of data submission and regulatory control. It is designed to sit at the national junction of national and international trade data exchange, thereby presenting a single point of access to all other relevant trade systems. While the primary objective is the single electronic submission of data, establishing a single window necessitates a major rationalization of current approaches and requirements to trade administration and operations, especially the reuse, and elimination of duplication, of existing data wherever possible, together with widespread e-Government applications and trade-related ministry and non-governmental organization (NGO) systems. (ESCAW, 2011).

Figure 2.2 Trade documentation operations before and after SWS Implementation



Source; ESCAP, 2012

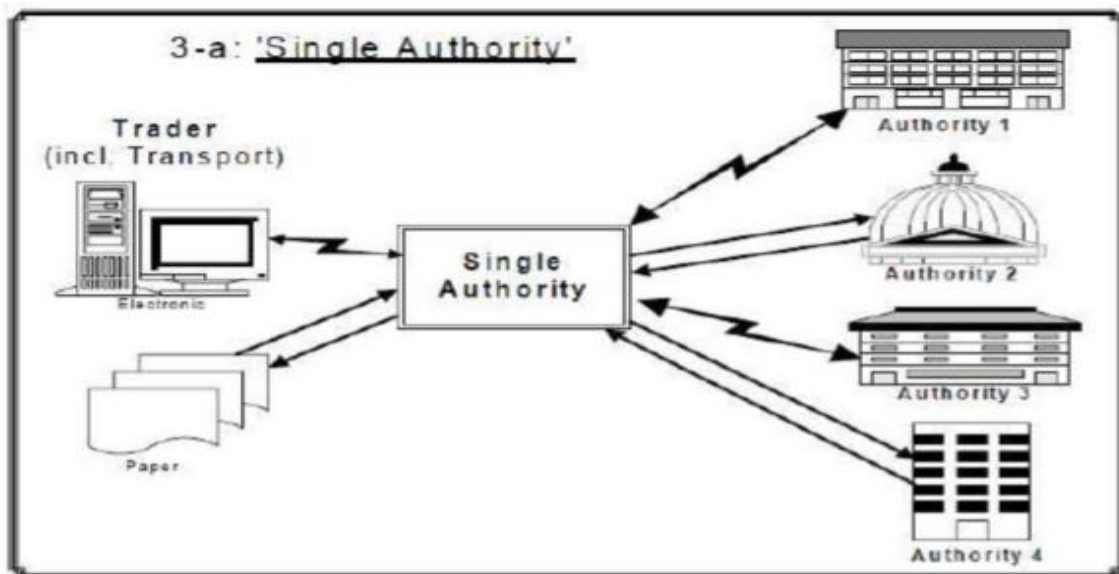
2.1.2 Models of a Single Window System

According to UN/ CEFAC, 2005 Single window systems may either be stand-alone functional systems or as is being increasingly witnessed, integrated national or regional single window systems. However UN/CEFAT international trade procedure working group of numerous systems that are in place indicated three basic models of SW

2.1.2.1 Single Authority

Single authority is tasked with setting up a SWS to coordinate the logistics chain information by receiving electronic submissions and disseminating them to other governmental and cross-border authorities. The information is either paper or electronic submissions and disseminate to agency/ government and cross-border authority. (UN/CEFACT 2005).

Figure 2. 3 Single window authority system



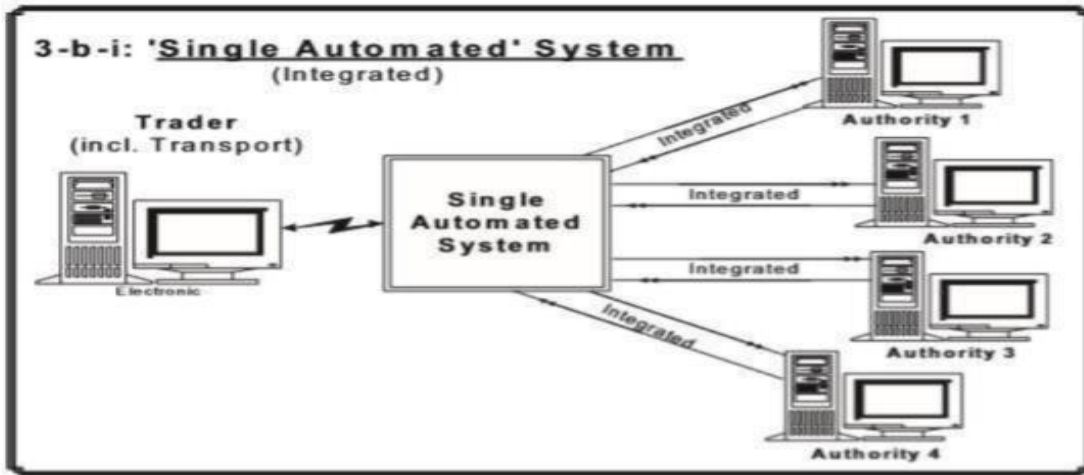
Source; UN/CEFACT, 2005

2.1.2.3 Single automated system

According to Rhodalyn, 2018. The system integrates all authorities involved in the trade transaction process and serves as a transaction hub. It electronically receives declarations and permits in a single application. It also allows the submission of data only once and distributes such data to relevant authorities who require the data for use. There are three versions of this model.

- I. An integrated system that processes data
- II. An interface system that sends data to agencies after processing.
- III. A combination of i and ii above

Figure 2.4 Single automated system

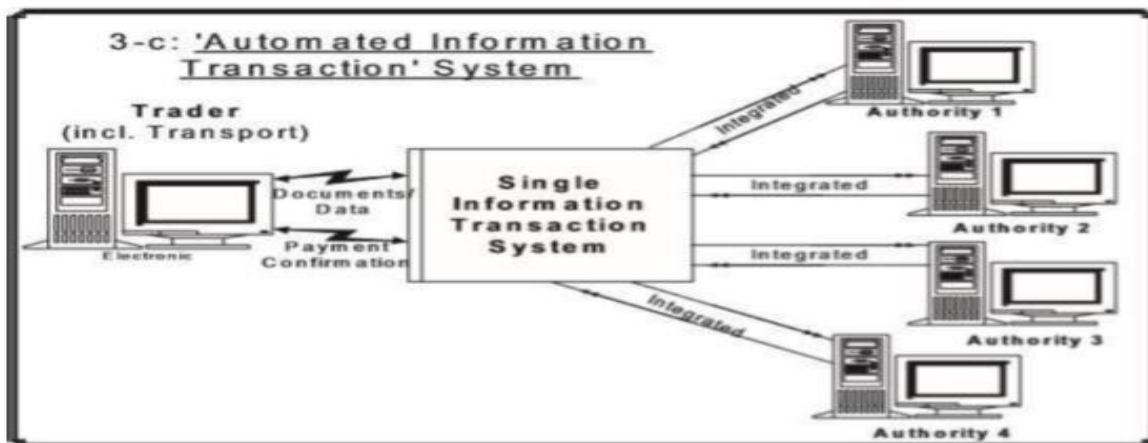


Source; UN/CEFACT, 2005

2.1.2.4 Automated information transaction system

These are self-regulating SWs that channel the information directly to the defined agencies for processing and approvals based on a defined workflow using intelligent routing agents. Transaction flows are based on a rules engine which determines the flow of information and resultant approvals are sent back to the user with computed fees or duties deducted through the operator's bank account. (Mwanaulu, 2016).

Figure 2.5 Single automated information transaction SWS



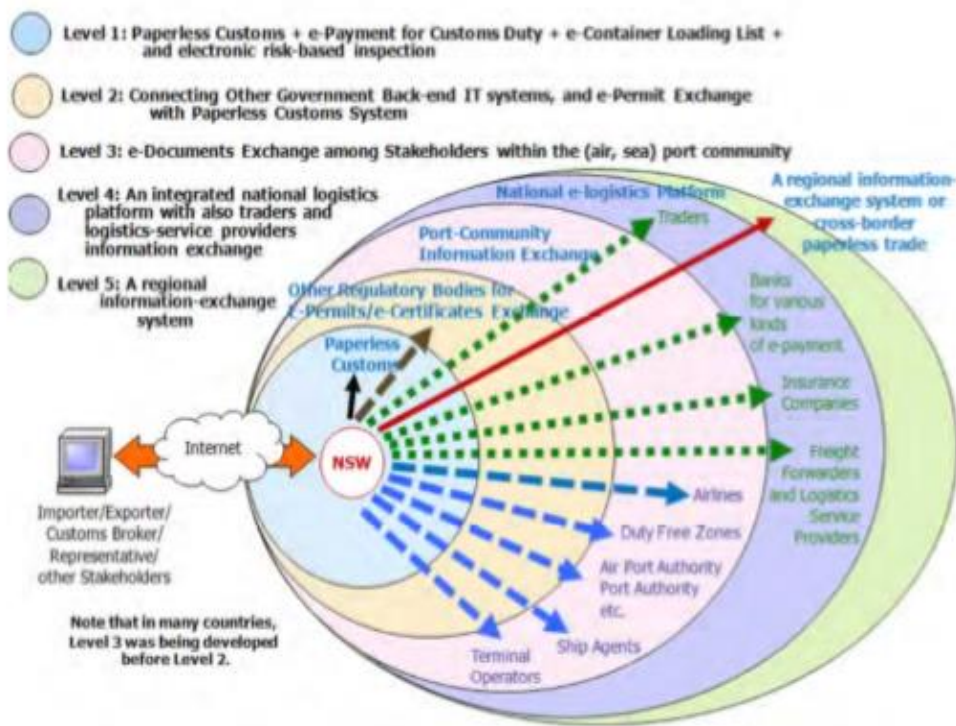
Source; UN/CEFACT, 2005

2.1.3 Evolutionary stages of Single Window system

The existence of SWS is not take a place in one time, it has different maturity levels. According to NESCAP/UNECE (2012), SWS has five incremental steps.

1. Paperless Customs Level
2. Regulatory Single Window Level
3. Port Single Window or B2B Port Community System Level
4. Fully Integrated Single Window Level
5. Cross-border Single Window Exchange Platform

Figure 2.6 five evolutionary development of the SWS.



Source; UNESCAP/UNECE (2012)

2.1.3.1 Paperless Customs

The electronic Customs declaration system usually evolves from a paper-based Customs environment or from the use of traditional Electronic Data Interchange (EDI) systems where traders submit both electronic customs declarations and paper declarations.

This step is the development of paperless custom declaration system. And a paperless Customs system is the first and initial start for the development of the national Single Window. Paperless Customs environments use only electronic customs documents through secure Value Added Networks (VANs) without requiring physical visit and without submitting physical papers at a later stage. Often the functionality of paperless Customs declaration systems is extended to cover other Customs-related activities—e.g. online duty payment, electronic risk assessment and risk based inspection strategies, electronic container loading documents to electronically associate between Customs declarations and physical containers of those declared goods, and some basic electronic information exchange between Customs Department and terminal operators for facilitating and speeding up customs release operations at the port or at the border area. UNESCAP/UNECE (2012).

2.1.3.2 Regulatory Single Window

This step is the second level of evolution of SWS. In this stage the integration of Paperless Customs with other regulatory bodies (issuing trade/import/export/transit-related permits and certificates, and other related documents) take a place. After linking traders and Customs electronically, countries can develop a Single Window edocument exchange system linking several or all Government agencies dealing with the regulation of imports and exports. This system allows application for and issuance of electronic import/export-related permits and certificates and their exchange between Government agencies. UNESCAP/UNECE (2012).

2.1.3.3 Port Single Window or B2B Port Community System

The next stage in developing a Single Window is to integrate the private-sector stakeholders and intermediaries at major airports, seaports, or borders. The systems are sometimes referred to as Port Community Systems (PCS) or Port SWs. There is no clear distinction between the two terms: often PCS have a stronger B2B focus and Port SWs have a stronger focus on B2B components.

2.1.3.4 Fully Integrated Single Window

The Fully Integrated Single Window System is platform that integrates administrations, companies and the service sectors with the aim properly manage the total import-export operations (UNECE 2011). At this level, the connection is extended to include companies from the private sector like the banks and insurance companies.

2.1.3.5 Cross-border Single Window Exchange Platform

The Cross-Border Single Window is an interconnection and integration of NSWs into a bilateral or regional cross-border e-information exchange platform (UNECE 2011.) An example of the cross-border SW is the ASEAN SW, where trade partners make use of the paperless cross-border e-document exchange (UN/CEFET, 2005).

2.1.4 Single window for Trade facilitation

Import and export formalities associated with international trade continues to be a bottleneck in trade facilitation as the number of agencies and trade requirements increases for purposes of security and revenue collection. Long waiting times at borders, inappropriate charges, cumbersome procedures, inadequate or unclear rules, and regulations are serious hindrances to trade, and consequently adversely affect investment, employment and trade-led development (UNCTAD, 2018).

The World Trade Organisation (WTO) encourages member states to ensure trade facilitation in order to create investment and employment opportunities. Trade facilitation is concerned with the application of efficient rules and regulation to simplify, harmonize and standardized trade transaction process with the aim of reducing time and cost of doing business to both traders and government. Trade facilitation is defined as “removing bottleneck to the crossing of goods across borders” (WTO, 2018).

Trade facilitation is concerned with the efficient application of trade rules and regulations using various measures with an overall objective of reducing trade transaction costs (TTCs) in cross border trade. Thus it can be conclusively defined as the set of measures or policies which aim to simplify and harmonize international trade procedures and practices so as to reduce or eliminate TTCs as well as encouraging international trade. Trade facilitation measures would seek to

streamline processes and information flow across the relevant regulatory agencies and the international supply chain using various tools such as the single window system. (Mwanaulu, 2016).

The use of a single window facility can improved efficiency and effectiveness of official controls and reduce costs for both governments and traders due to better use of resources. The Single Window is, therefore, a practical application of trade facilitation concepts meant to reduce non-tariff trade barriers and can deliver immediate benefits to all members of the trading community (UN/CEFACT, 2005)

United Nations Center for Trade Facilitation and Electronic Business (UN/CEFACT) (2005. p3) defined Single Window “as a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, export, and transit-related regulatory requirements. If information is electronic, then individual data elements should only be submitted once”.

2.1.5 Benefits of single window system

Trade facilitation is concerned with the efficient application of trade rules and regulations using various measures with an overall objective of reducing trade transaction costs (TTCs) in cross border trade. Thus it can be conclusively defined as the set of measures or policies which aim to simplify and harmonize international trade procedures and practices so as to reduce or eliminate TTCs as well as encouraging international trade. Trade facilitation measures would seek to streamline processes and information flow across the relevant regulatory agencies and the international supply chain using various tools such as the single window system. (Mwanaulu, 2016).

According to Mwanaulu, 2016. There have been a number of benefits of single window systems that have been documented in academic publications with jurisdictions that have established SWS registering an increase in revenue collection as a result of reduced TTCs and improvements in cross-border efficiencies. The benefits of SWs can be considered from the views of logistics stakeholders participating in the logistics supply comprising of: a) Government agencies involved

in international trade. b) Port, logistics and transport operators and c) Traders involved in international trade (importers, exporters, custom brokers, shipping agents, freight forwarders).

Further benefits accrued from SWS, are discussed from the following perspectives:

2.1.5.1 Benefits to Policy makers

SWS provide an automated tool for trade facilitation by fostering regional collaboration, integration and exchange of regional trade information. (ESCWA, 2011)

2.1.5.2 Benefits to compliance authorities

By centralizing the information collection and dissemination, SWS provide a more efficient and productive use of human resources. There is a noted increase in collection of fees, duties and penalties when SWS are built with payment gateways to collect the requisite fees and duties for trade. SWS also provide an automated, comprehensive, streamlined portal for compliance with government legislative, regulatory requirements and international treaties. SWS also enhanced controls for risk analysis and enhanced transparency and accountability. (Mwanaulu, 2016).

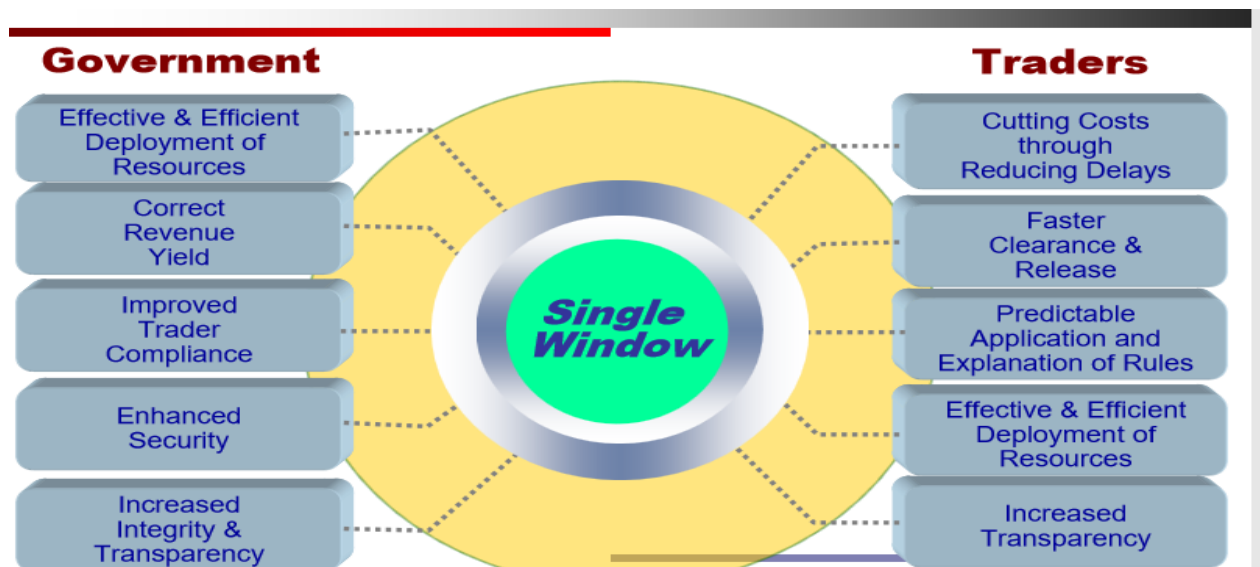
2.1.5.3 Benefits to the traders

The SWS implementation is expected to translate to faster goods clearance procedures which are more predictable as a result of exception handling and dispute resolution mechanisms ultimately reducing inventory costs. Through increased centralization of information, there will be reduced clerical efforts leading to cost reductions and shorter time taken to lodge trade documents. As a result of the enhanced goods release information provided by SWS, the logistics supply chain can effectively predict the release of goods and efficiently plan for warehousing and transportation needs. (Mwanaulu, 2016).

2.1.5.4 Benefits to the logistics operators

For logistics operators, it is expected that SWS will lead to faster processing of information, resulting in reliable information on goods movement which can be used for supply chain planning and efficient resource allocation in operations and warehousing and ultimately timely feedback to customers. It is also expected that they will experience better end to end operation audits due to information centralization and availability. (Mwanaulu, 2016).

Figure 2.7 Benefits of Single Window Benefits of Single Window



Source; ESCAP, 2012.

2.1.6 Theories related to single window system

Systems Theory

The application of system theory is very important in an organization that is applying technology to change the way it operates. The theory mainly concentrates on control mechanism applied for the change and feedback received within the organization. It aims at control of negative feedback by creating an equilibrium and brings the needed stability when implementing the change (Byeon, 2005). The theory defines an organization as set of a relationship comprising of various actors/stakeholders each having their own role and which have an influence with it performance (Mason, 2007). System theory tends to bring understanding to the business environment complexities, by enabling the management in responding more effectively to the business disruptors. This is achieved through bringing understanding of the business processes and how they aid in managing the uncertainties and their implications. The theory also addresses the aspect of open and closed systems. The theory tries distinguish between the two by bringing an understanding on how they are. In open system, the theory informs that and change in the business

environment will affect the internal systems within an organization. If the organization does not respond effectively to the changes, then it will affect its overall performance (Shafritz et al, 2005; Wang, 2004). Closed system on the other hand, are not significantly affected by changes with external environment and are more resilient to when the changes occur. Open system theory looks at the relationships between the organizations and the environment in which they are involved (Boulding, 1956; Katz and Kahn, 1978).

The electronic single window is also set of a relationship comprising of various stakeholders each having their own role and which have an influence with its performance and the system enables the management more effectively to the business by cutting time of clearance and cost of clearance through online lodging and document transformation.

2.2 Empirical review

Asghar et al. (2014) evaluate of the role of single window in facilitating the process of goods import in customs of Qazvin province. And the result of the study shows single window reducing tariff barriers, is effective solution to facilitate business interactions, improve trade facilitation and facilitate clearance process in customs of Qazvin province (Iran).

Edvard et al. (2019) presents a comprehensive review of research papers dealing with a better understanding of NSW (National Single Window) and MNSW (Maritime National Single Window) implementation and its impact on sustainability in maritime transport and seaports. The goal of the paper is to research National Single Windows and Maritime National Single Windows from economic, environmental and social aspects of sustainability. The search for papers was conducted from 2010–2019 GC. The conclusion of the study showed that the implementation of NSW/MNSW has potential for improving sustainable sea port business. And also the NSW/MNSW reduces or eliminates paper documents and enables data re-use, which improves economic seaport sustainability through savings. Also, NSW/MNSW could contribute to economic sea port sustainability by decreasing processing time, accelerating Customs procedures and reducing document collecting time. The researcher suggested that environmental seaport sustainability can also be improved by implementing NSW/MNSW through reducing waiting time for cargo loading and unloading, and thus provides efficient use of natural resources and decreased emission of CO₂ and other pollutants via the elimination of unnecessary movements in cargo due to inefficient data exchange among stakeholders. The need for paper documents is minimized, therefore reducing the demand for logging and deforestation. The NSW/MNSW can also improve social sea port sustainability of sea port operations, stakeholders, and community through the use human resources more efficiently, to increase employee productivity, and to decrease the workload.

Mwanaulu (2016), studied the effects of the implementation of the Kenya National Electronic Single Window System on trade facilitation. The study also investigated the Critical Success Factors (CSF) for the implementation of SWS, the importance of concrete policy and regulatory frameworks backing the SWS operations and the role that the establishment of the Single Window System (SWS) played in improving the efficiency of the cargo clearance process. It also analyses

the benefits and challenges that the trade stakeholders experienced from the onset of the SWS roll-out. And the result of the study shows that the identified CSFs for SWS are critical for the successful implementation and operations of stakeholders. The establishment of SWS is also highly dependent on the policy and regulatory frameworks in place relating to international trade and customs. And also the study direct that although the SWS provide a centralized portal for lodgment of trade pre-clearance documents and collection of the requisite duties and fees by government agencies and SWS also provides transparency on the pre-clearance and documentation process for all stakeholders thereby reducing corruption and enhancing service delivery standards.

Rhodalyne (2018), Assesses the impact of national single window on the competitiveness of Ghana's maritime sector. The specific research aims were to ascertain and examine the implementation processes of the Single Window System in Ghana, identify the challenges that have confronted the implementation and assess the impact of the implementation on trade competitiveness. The study conducted on Tema port, which controls over 75% of Ghana's maritime trade traffic. And the study employed both qualitative and quantitative research approach and non-probability purposive sampling techniques. The finding revealed that implementation of the National Single Window System (NSWS) brought a significant change in trade competitiveness through improved trade facilitation, reduction in cost, streamlining of procedures and modernization of customs operations in Ghana. Finally, the study suggested that effective implementation of measures to address improvement of the National Single Window System should be within the framework of global maritime industry standards.

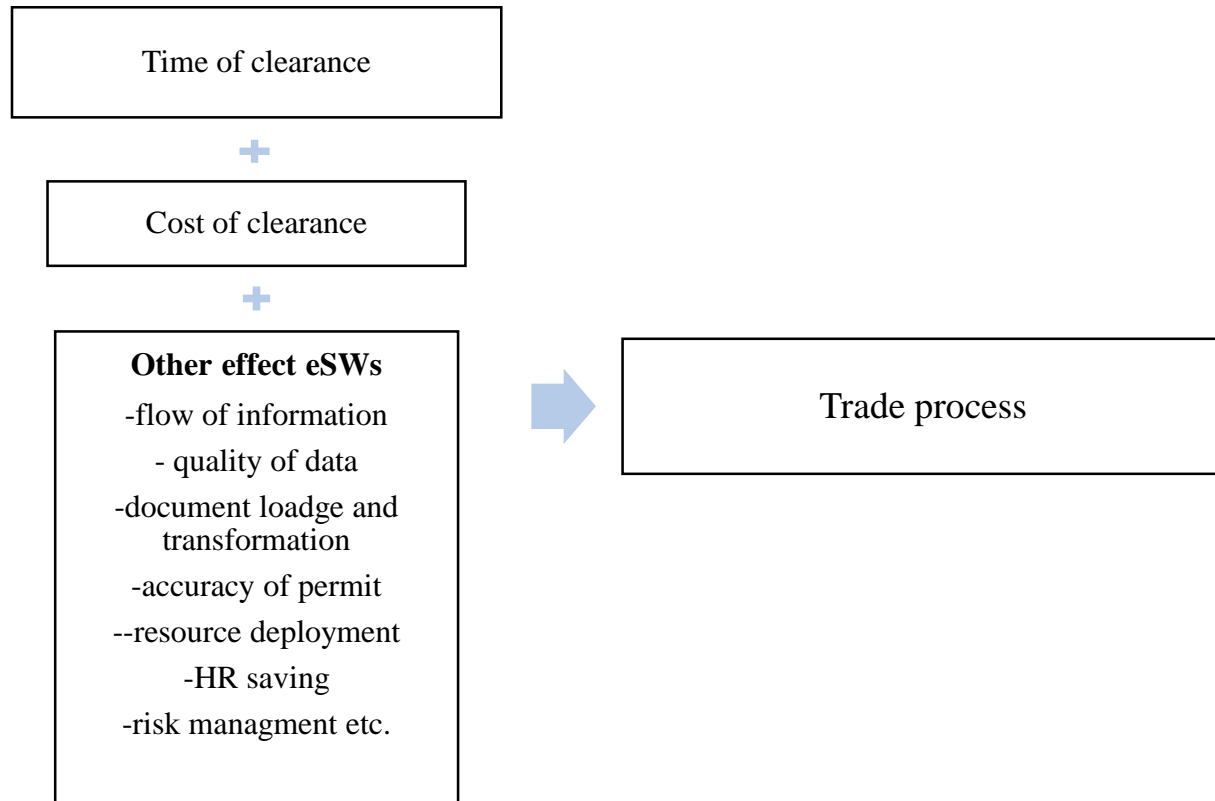
2.2.1 Research Gap

The Government of Ethiopia has launched an electronic platform called “Electronic Single Window Service, which will enhance efficiency in trade by speeding the customs process for importers and exporters. The country started its single window project in 2017 with a financing of the World Bank Group. Since, the research area is new and unfamiliar, any of the researches that previously conducted did not yet identify the impact of electronic single window implementation from trader’s perspective in case Addis Ababa, Ethiopia. Therefore, the main purpose of this study is to assess the impact of electronic single implementation from trader’s perspective and to create awareness and better understand about electronic single window and its effect on trade facilitation.

2.3 Conceptual framework

Figure 2.8 conceptual frame work

Dependent variable are trade process and independent variable are time of clearance, cost of clearance and other variables.



CHAPTER THREE

RESEARCH METHDODOLOGY

3.1 Research Approach

The researcher was used mixed or both qualitative and quantitative research approach. The mixed research method which is involves the integration quantitative and qualitative data collection and analysis in a single study (Gutmann & Hanson, 2002). Qualitative has greatest potential to generate rich descriptions of the participants' thought processes and tend to focus on reasons "why" a phenomenon has occurred (Creswell, 2003). The greatest strength of quantitative research is that it produces reliable and quantifiable data that can be generalized to a large population (Marshall, 1996). So, mixed research approach is better to get more complete picture by noting trends and generalizations as well as in-depth knowledge of participants' perspectives. This approach helps the researcher to answer questions that cannot be answered using only qualitative or qualitative methods alone. Therefore,

3.2 Research Design

According to Creswell & Plano Clark (2007), research design is the procedures for collecting, analyzing, interpreting and reporting data in research. It is the overall plan for connecting the conceptual research problems with the relevant (and achievable) empirical research. According to Grey, (2014) research design enables to sets the procedure on the required data, the methods to be employed to collect and analyze this data and how the combination of this all is going to answer the research question.

In this study the researcher was used descriptive research design. The motive to use descriptive research design is that descriptive study provides a picture of a situation, person or event or show how things are related to each other and as it naturally occurs (Blumberg, Cooper and Schindler, 2005). And it is much suitable for a relatively new or unexplored research area but descriptive studies cannot explain why an event has occurred (Punch, 2005). Therefore descriptive research

design is appropriate method for this study. Since, Ethiopian electronic single window is new or unexplored research area.

3.3 Data Type and Source

Kothari, (2004) notes that there are two major sources of data namely primary and secondary data sources that could be used in any study. To conduct this study the researcher was use both primary and secondary source of data. Primary source of data was collected from purposively selected group of people in different companies. Secondary source of data was collected from published articles, research works, previous studies, books, reports, internet, and other sources etc.

3.4 Target Population and Sampling size

3.4.1 Target population

As explained by Hair et al. (2010), target population is a specific group of people or object that can be asked or observed to develop required data structures and information. In other words target population refers to all the members who meet the particular criterion specified for a research investigation. Therefore, for this study the target population is 100 employees or traders with in different company who is equipped with the information of electronic single window implementation, take different trainings of electronic single window operation and working with the system at study time.

3.4.2 Sampling technique and size

In investigation it is impossible to assess every single element of population so, out of targeted population the researcher should select a group of people for assessment. M. H. Alvi (2016). The researcher was used purposive or judgmental sampling techniques to select the appropriate group of people who is equipped with the information of electronic single window implementation and working with the system at study time. As explained by Ker linger (1986), purposive sampling is a non-probability sampling and it is characterized by a deliberate effort to obtain representative samples through the inclusion of groups or typical areas in a sample. This technique is used because limits number or category people have the information that is required for the researcher.

In order to get essential information, the best sampling method is purposively sampling technique and the sampling size involved one hundred (100) respondents drawn from the target population of the study. Since, electronic single window is unfamiliar and recently implemented.

3.5 Data Collection Instruments

There are different methods of data collection instrument Creswell, (2003). The choice of a tool and instrument depends mainly on the attributes of the subjects, research topic, problem question, objectives, design, expected data and results. The researcher was used both primary and secondary data. Primary data was collected through structured questionnaires that would be distributed directly to the company employees. The choice for the use of questionnaire is for the reasons that it provided fast and cost-effective means of data collection. The secondary data was collected from websites, prior research works and reports. Closed ended questions will presented on a Likert type scale. The Likert scale is commonly applied in business research because it allows respondents to provide their perceptions and opinions both in terms of intensity (degree of agreement or disagreement) and direction (positive or negative).

3.6 Data Analysis and Presentation

The gathered data was analyzed statistically to generate descriptive and explanations for the variables under study. The collected data was analyzed using descriptive statistics with the help of Statistical Package for Social Sciences (SPSS) program version 20 software. The gathered data was summarized through tables, frequency distributions, percentages, and charts to analyze demographic characteristics of the respondents. In addition to this mean score, standard deviation and relative important index was employed for Likert scale data. The reason for this choice of analysis method is because data was collected quantitatively and the objective of the study was to examine the impact of electronic single window on trade process on the structured questionnaires.

3.7 Reliability

Reliability refers to the extent to which the data collection techniques or analysis procedures will yield consistent findings (Saunders. M, Lewis. P, Thornhill. A, 2009). For this study Cronbach's alpha was used to assess the internal consistency of variables in the research instrument. The reliability coefficient is measured from 0 to 1 with 0 denoting no reliability, and 1 denoting total reliability. Accordingly, Cronbach Alpha test was conducted to check the consistency of the questions and the reliability statistics was 0.898. This implies that there was a higher level of consistency in the questionnaire in measuring all the variables of the study.

Table 3.1 Reliability Analysis

Cronbach's Alpha	N of Items
0.898566	15

(Source: survey result 2021)

3.8 Validity

The validity of a measuring tool means that it can measure the relevant specification not any other variable. Content validity was used for measuring the validity of the questionnaires of this research. For this purpose, the content of the questionnaire was prepared by referring to scientific texts, theories and the model relevant to the subject and the questions of the research. After doing amendments by advisor the content validity and face, validity of the questionnaire was approved.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

In this chapter, the collected data through survey has analyzed using statistical tool of SPSS version 20. First, the survey overall response are discussed followed by discussion on the respondent's profile, and perception of the respondents on different variables using descriptive statistical tools.

4.2 Preliminary Analyses

This was a process of inspecting data file and exploring the nature of the research variables. It include checking the reliability of measures, evaluating the effectiveness of any manipulations, examining the distributions of individual variables, and identifying outliers. Under this descriptive statistics, manipulating the data and calculating total scale scores would be presented. The sample size for this research was 100. And all distributed questioners were distributed returned. The incomplete no of questioner is 11.

Table 4.1 Respondents rate

Questioner	Number
Number of questionnaires distributed	100
Returned questionnaires	100
Not returned questionnaires	0
Incomplete questionnaires	11

(Source: survey result, 2021)

4.3 Descriptive Analysis for Scale Items

Descriptive Analysis for Scale Items demonstrates the level of agreement of the respondent's perception towards different variables of the study. An itemized rating scale was used to construct a range. This range used to measure the perception level of the respondents towards each variable. The researcher used the following formula to construct the range.

$$\begin{aligned} \text{Itemized rating scale} &= \frac{\text{Max} - \text{Min}}{N} \\ &= \frac{5 - 1}{5} = 0.8 \end{aligned}$$

If the mean value of respondent's perception is between 1 to 1.80 interval, this indicate strongly disagree level of agreement. If the mean score of respondents perception is between 1.81 to 2.60 ranges, the level of agreement indicates disagree. And if the mean value of respondent's perception is between 2.61 to 3.40 intervals, this indicate neutral level of agreement. If the mean value of respondents perception is between 3.41 to 4.20 intervals, the level of agreement indicates agree. And the rest 4.21 to 5 interval indicates strongly agree level of agreement toward different variables of the study.

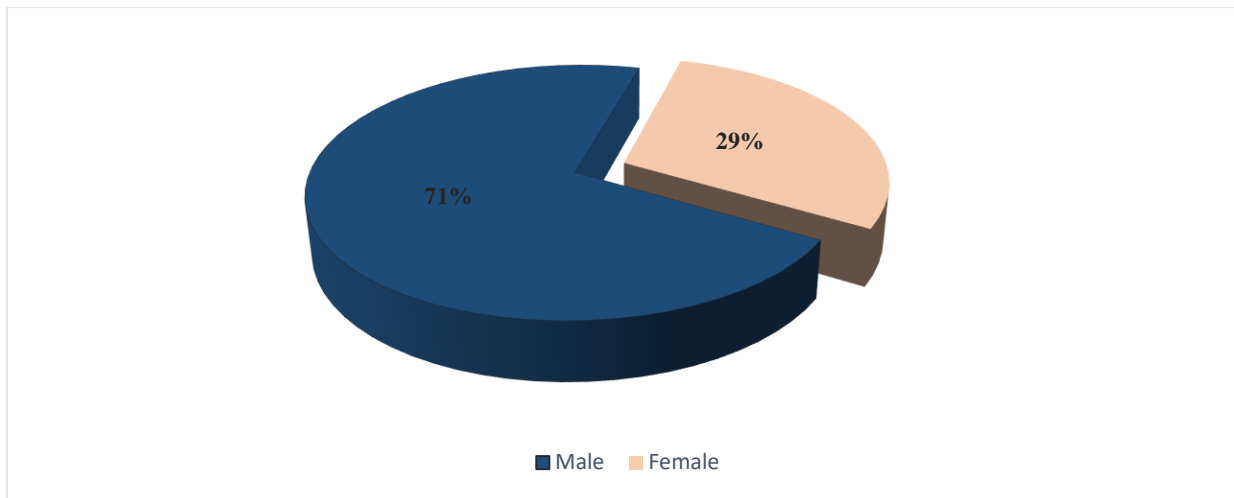
Table 4.2 Mean interval

Intervals	Perceptions
1.00-1.80	Strongly disagree
1.81-2.60	Disagree
2.61-3.40	Neutral
3.41-4.20	Agree
4.21-5.00	Strongly agree

(Source: survey result, 2021)

4.3 Demographic Profile of Respondents

Figure 4.1 Gender of respondents



(Source: survey result, 2021)

As shown in above pie chart, majority of the respondents are male with 71% and the rest 29% female. It indicates that both male and female participated on this study and it was concluded that the male respondents Participated more in the study compared to the female respondents.

Table 4.3 Age of respondents

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18-30	64	64%	64%	64%
30-45	33	33%	33%	97%
45-60	3	3%	3%	100%
Above 60	0	0	0	
Total	100	100%	100%	

(Source: survey result, 2021)

The frequency and percentage distribution of age of the respondents of this research categorized into 4 groups. The highest percentage was for those in age bracket of 18-30, which was 64% and the second highest age of respondents was from 30-45 years with 33%. The lowest percentage was for those in age bracket of 45 - 60 with 3 %. None of the respondent were recorded on the age of above 60 years. The successful adoption of technology is becoming increasingly important to functional independence so, the highest percentage for those respondents between age group of 18-30 years and 30-45 years indicate the potential of acceptability of new technology, new ideas and perform better result than elders compared to the previous method of accomplishing the activity. Since, the relationship between age and adoption of technology was mediated by cognitive abilities, computer self-efficacy, and computer anxiety.

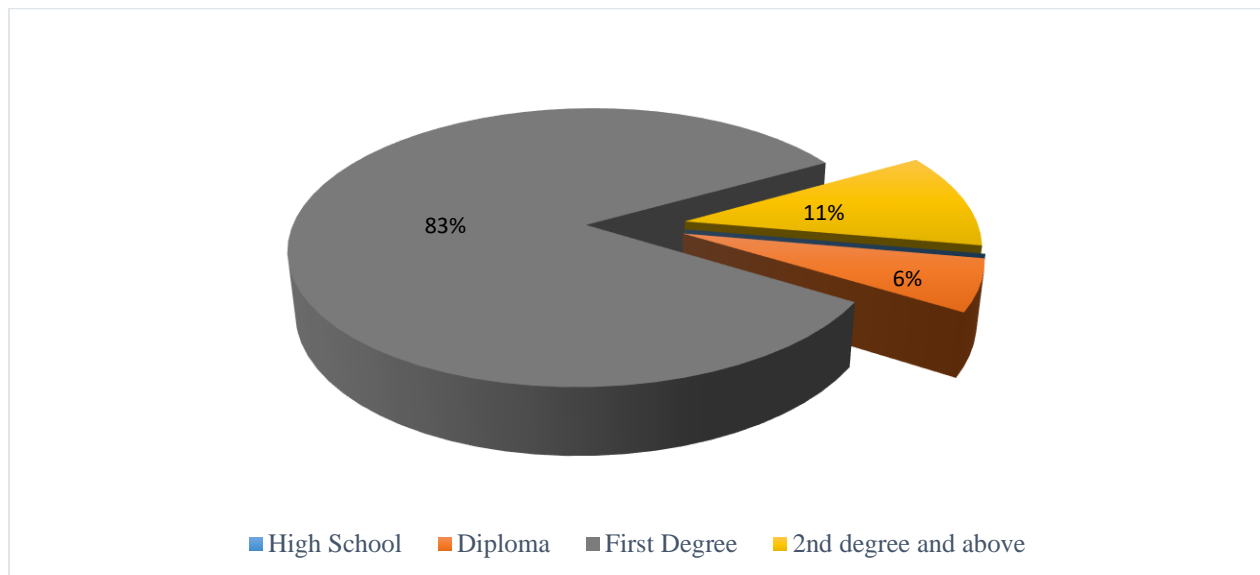
Table 4.4 Educational background

Educational Background	Frequency	Percent	Valid Percent	Cumulative Percent
High school	0	0	0	0
Diploma	6	6%	6%	6%
First Degree	83	83%	83%	89%
2 nd Degree and above	11	11%	11%	100%
Total	100	100%	100%	

(Source: survey result, 2021)

The above table shows the respondents level of education. Most of the respondents had first degree with 83%, those who had completed diplomas had 6%, those who had second degree and above had 11 %. And none of the respondents was recorded in high school educational background. These indicates most of the respondents who participated in the study were from first degree holders.

Figure 4.2 Educational background of the respondents



(Source: survey result, 2021)

Table 4.5 Designated position of the respondent

Designated Position	Frequency	Percent	Valid Percent	Cumulative Percent
Exporter &/ importer officer	34	34%	34%	34%
Marketing officer	55	55%	55%	89%
Manager	11	11%	11%	100%
Total	100	100%	100%	

(Source: survey result, 2021)

The work position of respondents of the study are categorized under three groups. The largest group consists of 55 marketing officers with 55% followed by export and or import officers 34 equivalent to 33%. The rest 11 % are managers. This indicates they had the capacity to fully appreciate and give an independent evaluation of the electronic single window system and how it is likely to impact on the trade competitiveness.

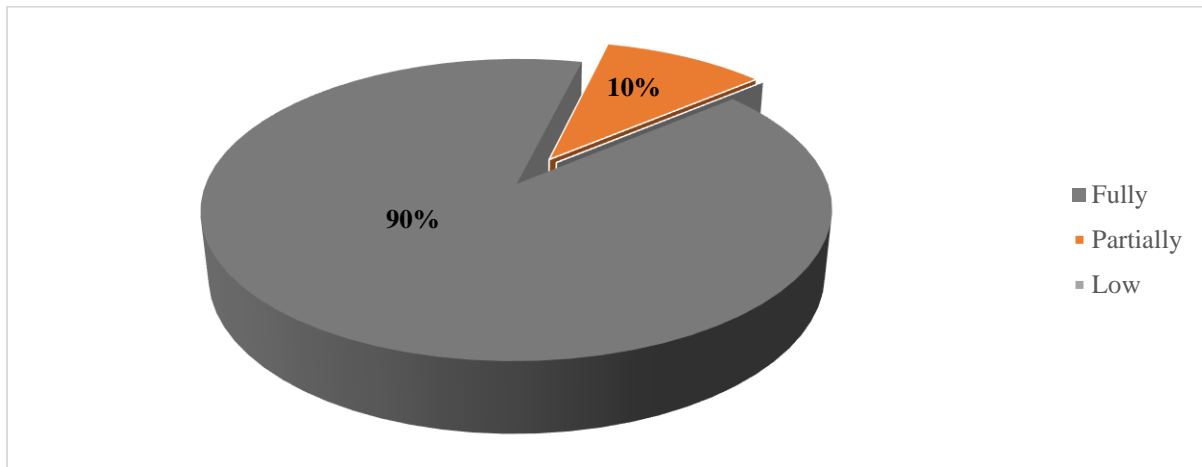
Table 4.6 Experience of the respondents with current position

Experience	Frequency	Percent	Valid Percent	Cumulative Percent
0-3 years	44	44%	44%	44%
4-6 years	47	47%	47%	91%
7-9 years	6	6%	6%	97%
Above 9 years	3	3%	3%	100%
Total	100	100%	100%	

(Source: survey result, 2021)

As shown in the above table, majority of the respondents had 4 to 6 years of experience during the study time position with 47% followed by 0 to 3 years' experience with 44%. Those who had experience of 7 to 9 years are 6%, those who had above 9 years' experience are 3%. These can indicates the levels of understanding of respondents about the impact electronic Single Window compared to previous method of accomplishing the activity or before implementation of the system.

Figure 4.3 Awareness of respondents about implementation of electronic single window



(Source: survey result, 2021)

Among the 100 respondents, 90% of respondents are with full awareness regarding implementation of electronic single window. The rest 10% replied as they have partial understanding. So majority of the respondents have full understanding about electronic single window implementation. The intention of this question was to gauge the awareness about which sections are undertaking implementation of eSW and which are not. Which indicates the sampled respondents, have a very good comprehension of the electronic single window and expected outcomes and impact on trade process.

4.4 Analysis of Interviewee's Response

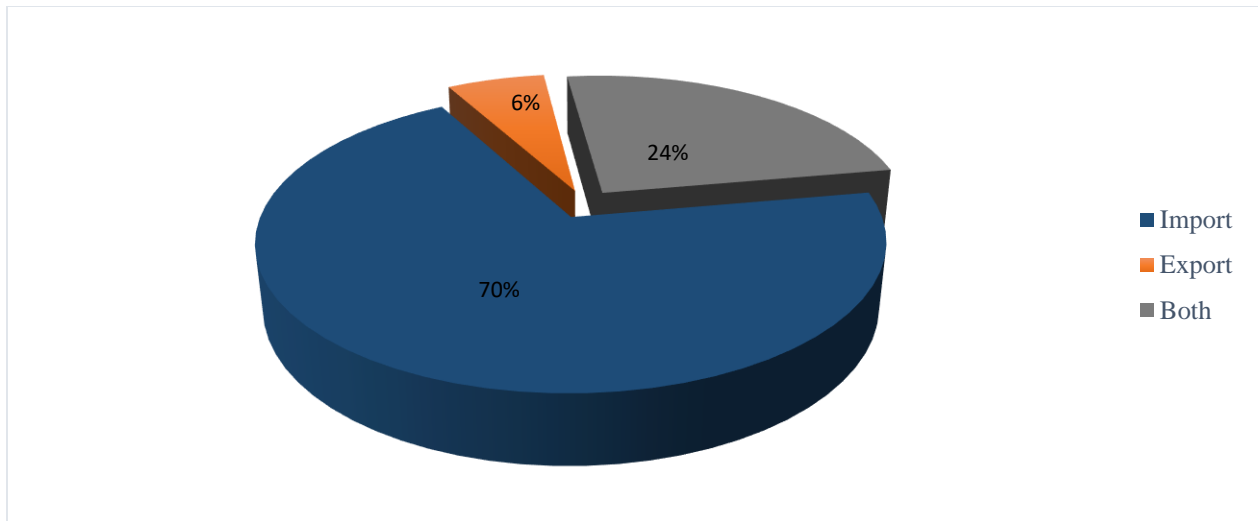
Table 4.7 Companies with implementation of electronic single window

Companies with eSW	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 3months	1	1%	1%	1%
3-6months	23	23%	23%	24%
6month -1year	74	76%	76%	100%
above 1 years	0	0%	0%	

(Source: survey result, 2021)

As shown in the above table, out of 100 respondents, two of them missed the question however most of the companies, where the respondents are selected, had been experiencing the usage of electronic single window from 6 months to 1 years with 76%, followed by 3 to 6 months with 23%. The rest 1% replied as they have been less than 3 month experience with the use of electronic single window implementation. And none of companies experienced the use of electronic single window implementation more than one years.

Figure 4.4 Companies with usage of electronic single window



(Source: survey result, 2021)

As shown in the above chart, most of the companies 70%, where the respondents are selected, are import companies, followed by 24 % from companies participated in both export and import and the rest 6% are only export companies. These indicates majority of the selected respondents are from Import Companies.

Table 4.8 Necessity of electronic single window implementation.

Do you feel that there is a necessity for implementing the Electronic Single Window System (SWS)?	Respondents		
	Item	No.	%
	Yes	100	
	No	0	
	No tick	0	

(Source: survey result, 2021)

According to above table, all of the respondents with 100% have said implementation of electronic single window is necessary. This shows none of the respondents is said implementation of electronic single window is not important.

Table 4.9 Simplification of lodging of trade documents

Do you feel that the establishment of Electronic Single Window System led to the simplification in the lodging of trade documents?	Respondents		
	Item	No.	%
	Yes	99	99%
	No	0	
	No tick	1	1%

(Source: survey result, 2021)

Out of 100 responses one is missed. Ninety nine percent of the respondents believe that the implementation of Electronic Single Window System leads to the simplification in the lodging of trade documents, 1% of the respondents did not say anything.

Table 4.10 Elimination of duplication of data

Do you feel that the SWS eliminated the duplication of data by providing a centralized portal for lodging of trade documents?	Respondents		
	Item	No.	%
	Yes	100	100%
	No	0	
	No tick	0	

(Source: survey result, 2021)

All of the respondents believe that the implementation of Electronic Single Window System leads to the elimination of duplication of data and information by providing a centralized portal for lodging of trade documents.

Table 4.11 Efficiency of trade process due to eSW

Do you feel the implementation of the Electronic Single Window System improved the overall efficiency of trade process in your company?	Respondents		
	Item	No.	%
	Yes	100	100%
	No	0	
No tick	0		

(Source: survey result, 2021)

As shown in the above table, all of the respondents believe that implementation of electronic single window has brought some efficiency in the lodging of trade documents and on overall trade process.

4.4 Perception of Respondents on Time of Clearance

Table 4.12 Perception of respondents on time of clearance

Do you feel the implementation of SWS helped your company to save time of clearance?	Respondents				
	Item	No.	%	Valid %	Cum %
	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	27	0.27	0.27	0.27
	Strongly Agree	73	0.73	0.73	1.00
Mean =4.73					

(Source: computed from survey result, 2021)

The table shows the respondents' perception towards the relationship between implementation of electronic single window system and time of clearance. From total of 100 respondents 27 (27%) of respondents agreed that the implementation of electronic single window helped their company to save time of clearance compared to the previous accomplishment of activity. And majority of respondents with 73 % replied that they are strongly agreed on the time saving as a result electronic single window implementation with a mean score of 4.73. At the same time none of the respondents select strongly disagree, disagree and neutral level of agreement.

4.5 Perception of Respondents on Cost of Clearance

Table 4.13 Perception of respondents on cost of clearance

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you feel that the implementation of SWS reduce cost of clearance in your company?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	11	0.11	0.11	0.11
	Strongly Agree	89	0.89	0.89	1.00
	Mean=4.89				

(Source: computed from survey result, 2021)

The above table shows the respondents' perception towards the relationship between implementation of electronic single window system and cost of clearance. According to the respondents information, from total of 100 respondents eleven (11%) of respondents agreed the implementation of electronic single window helped their company to reduce cost of clearance and 89 % of respondent's answered that they are strongly agreed on reduction of cost of clearance as a result of electronic single window implementation with a mean score of 4.89. And none of the respondents select strongly disagree, disagree and neutral level of agreement.

4.6 Perception of Respondents on Flow of Information

Table 4.14 Perception of respondents on flow of information

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you feel that the implementation of SWS enables Better flow of information?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	15	0.15	15	0.15
	Strongly Agree	85	0.85	85	1.00
	Mean=4.85				

(Source: computed from survey result, 2021)

The above table shows the respondents' perception towards the relationship between implementation of electronic single window system and flow of information. As shown in the above table, 15 (15%) of respondents agreed the implementation of electronic single window improve information flow between stockholders like custom, bank, insurance and other regulatory agencies. And from total 100 respondents, 85 (85%) of respondents replied that they are strongly agreed on the better flow of information as a result electronic single window implementation. with a mean score of 4.85. And none of the respondents select strongly disagree, disagree and neutral level of agreement.

4.7 Perception of Respondents on Quality of Data

Table 4.15 Perception of respondents on quality of data

	Respondents				
	Item	No.	%	Valid %	Cum %
Does implementation of SWS provides better quality of data?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	3	0.03	0.03	0.03
	Strongly Agree	96	0.97	0.97	0.100
	Mean =4.97				

(Source: computed from survey result, 2021)

The table shows perception of respondents' towards the relationship between implementation of electronic single window system and quality of data. And out of 100 responses one is missed. As shown in the above table, out of 99 responses only 3 (3%) of respondents agreed the implementation of electronic single window provides better quality of data and 96 (97 %) of respondents replied that they are strongly agreed on the better quality of data as a result electronic single window implementation with mean score of 4.97. And none of the respondents chosen strongly disagree, disagree and neutral level of agreement.

4.8 Perception of Respondents on Document Lodgment and Transformation

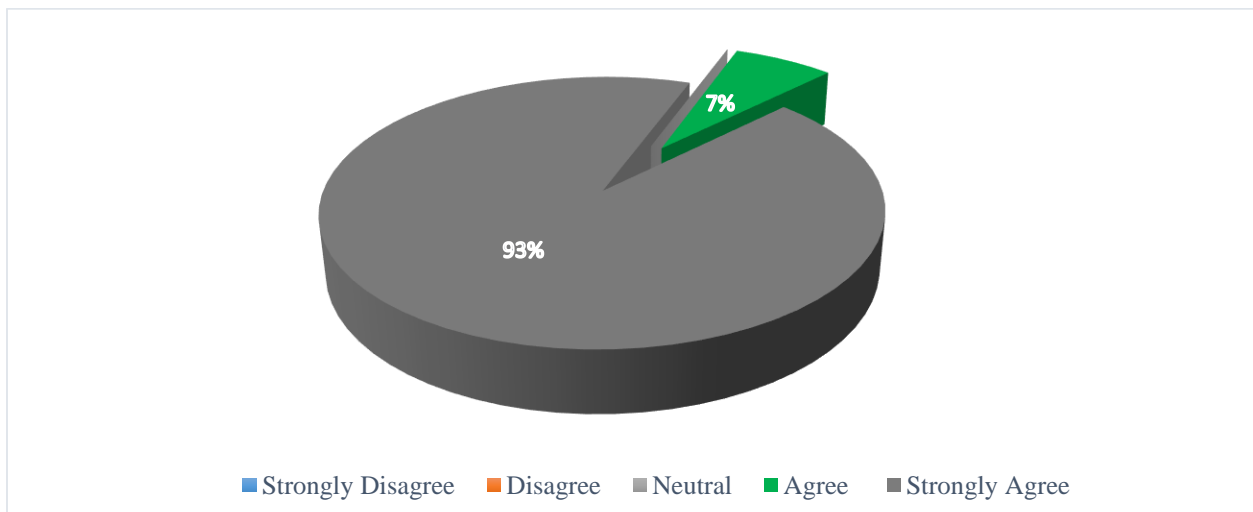
Table 4.16 Perception of respondents on document lodgment and transformation

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you think that SWS are better for lodgment of document and transformation?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	7	0.07	0.07	0.07
	Strongly Agree	93	0.93	0.93	1.00
	Mean =4.93				

(Source: computed from survey result, 2021)

The above table shows perception of respondents' towards the relationship between implementation of electronic single window system and lodgment and transformation of documents. From total of 100 respondents 7 (7%) of them agreed that electronic single window system provides better lodgment of documents and transformation of documents. And 93 (93 %) of respondents answered that they are strongly agreed on the single window system is better for lodgment of documents and transformation of documents with mean score of 4.93. And none of the respondents chosen strongly disagree, disagree and neutral level of agreement.

Figure 4.5 Perception of respondents on document lodgment and transformation



(Source: survey result, 2021)

4.9 Perception of Respondents on Accuracy of Document Permit

Table 4.17 Perception of respondents on accuracy of document permit

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you think that the implementation of SWS Increase accuracy of document permit?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	8	0.08	0.08	0.08
	Strongly Agree	92	0.92	92	1.00
	Mean=4.92				

(Source: computed from survey result, 2021)

The above table shows perception of respondents' towards the relationship between implementation of electronic single window system and accuracy of document permits. According to the respondents information, from total of 100 respondents 8 (8%) of respondents agreed the implementation of electronic single window improve or increases accuracy of document permits. And majority of them 92 % replied that they are strongly agreed on increment of accuracy of permits as a result of SWS. At the same time none of the respondents select strongly disagree, disagree and neutral level of agreement.

4.10 Respondents Perception on Human Resource Saving

Table 4.18 Respondents perception on human resource saving

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you think that the implementation of SWS enables to save human resource?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	19	0.19	0.19	0.19
	Strongly Agree	79	0.81	0.81	1.00
	Mean=4.81				

(Source: computed from survey result, 2021)

The above table shows perception of respondents' towards the relationship between implementation of electronic single window system and human resource saving. Out of 100 respondents 98 of them answered the question. Accordingly, from total of 98 respondents 19 (19%) of respondents agreed that the implementation of electronic single window enables their company to save human resource and 81% them replied that they are strongly agreed on human resource saving as a result of Single window system with mean score of 4.81.

4.11 Perception of Respondents on Bureaucracy

Table 4.19 Perception of respondents on bureaucracy

Does the implementation of SWS Reduces of bureaucratic processes?	Respondents				
	Item	No.	%	Valid %	Cum %
	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	9	0.09	9	0.09
	Strongly Agree	91	0.91	91	1.00
	Mean=4.91				

(Source: computed from survey result, 2021)

As shown in the above table, out of total responses 9 (9%) of them agreed that the implementation of electronic single window reduces bureaucracy of doing different activities compared to previous way of accomplishing the same activity. 91 (91%) of respondents replied that they are strongly agreed on the reduction of bureaucratic processes as a result electronic single window implementation with mean score of 4.91. And none of the respondents chosen strongly disagree, disagree and neutral level of agreement.

4.12 Perception of Respondents on Reduction of Corruption

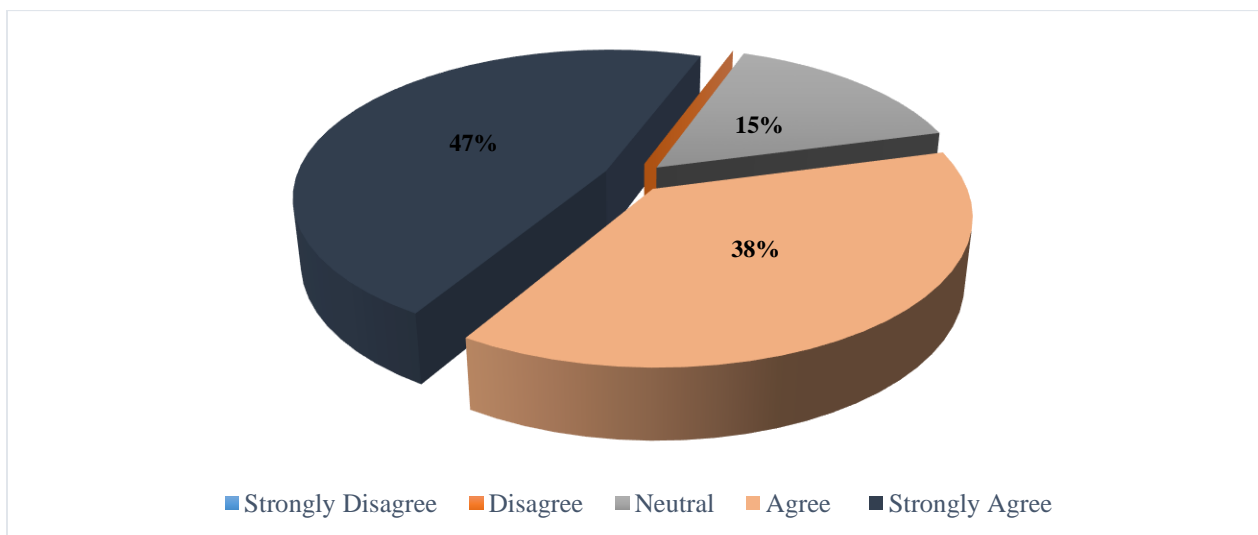
Table 4.20 Perception of respondents on reduction of corruption

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you think that the implementation of SWS helps to reduce corruption in customs and participant entities?	Strongly Disagree	0	0.00	0	0.00
	Disagree	0	0.00	0	0.00
	Neutral	15	0.15	0.15	0.15
	Agree	37	0.38	0.38	0.53
	Strongly Agree	46	0.47	0.47	1.00
	Mean=4.32				

(Source: computed from survey result, 2021)

The above table shows perception of respondents' towards the relationship between implementation of electronic single window system and corruption. Out of 100 respondents 98 of them answered the question. As indicated in table 18, 46 (47%) of the respondents strongly agreed that implementation of electronic single window reduce level of corruption, 37 (38%) of the respondents agreed that level of corruption can reduced as a result of electronic single window implementation with mean score of 4.3 and the rest 15(15%) of the respondents are undecided.

Figure 4.6 Respondents perception on reduction of corruption



(Source: survey result, 2021)

4.13 Perception of Respondents on Resource Deployment

Table 4.21 Perception of respondents on resource deployment

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you think that implementation of SWS lead to effective and efficient deployment of resource?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	23	0.23	0.23	0.23
	Strongly Agree	77	0.77	0.77	1.00
	Mean=4.77				

(Source: computed from survey result, 2021)

The above table shows perception of respondents' towards the relationship between implementation of electronic single window system and deployment of resource. From total of 100 respondents, 23 (23%) of respondents agreed that implementation of electronic single window leads to effective and efficient deployment of resources, 77 (77%) of them strongly agreed on effective and efficient deployment of resources as a result of electronic single window system with mean score of 4.77.

4.14 Perception of Respondents on Security of Single Window System

Table 4.22 perception of respondents on security of single window system

	Respondents				
	Item	No.	%	Valid %	Cum %
Do you think that SWS is better secured for transaction of document?	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	7	0.07	0.7	0.07
	Strongly Agree	93	0.93	0.93	1.00
	Mean=4.93				

(Source: computed from survey result, 2021)

As the above table shows perception of respondents' towards the relationship between implementation of electronic single window system and security of SWS. From total of 100 respondents, 93 (93%) of respondents strongly agreed that electronic single window is better secured for transaction of documents and 7 (7%) of them agreed that electronic single window enables better secured transaction of documents with mean score of 4.93.

4.15 Perception of Respondents on Risk Management Techniques

Table 4.23 perception of respondents on risk management techniques

Do you think SWS enable the use of sophisticated 'risk management' techniques for control and enforcement purposes?	Respondents				
	Item	No.	%	Valid %	Cum %
	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	24	0.24	0.24	0.24
	Strongly Agree	76	0.76	0.76	1.00
	Mean=4.76				

(Source: computed from survey result, 2021)

According to respondents' information, from total of 100 respondents 24(24%) of respondents agreed toward single window system enables for better risk management and enforcement purpose. 76 (76%) of respondents strongly agreed that electronic single window is better for risk management technique and enforcement with mean score of 4.76. And none of the respondents select neutral, disagree and strongly disagree.

4.16 Perception of Respondents on Compatibility of SWS

Table 4.24 perception of respondents on compatibility of SWS

Does Operation of Single window system compatible?	Respondents				
	Item	No.	%	Valid %	Cum %
	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	19	0.19	0.19	0.19
	Strongly Agree	80	0.81	0.81	1.00
	Mean=4.81				

(Source: computed from survey result, 2021)

As the above table shows perception of respondents' towards the relationship between implementation of electronic single window system and its compatibility. From total of 100 respondents, 19 (19%) of respondents replied that they are agreed and 80(81%) strongly agreed that electronic single window is compatible system. better secured for transaction of documents and 7 (7%) of them agreed that electronic single window enables better secured transaction of documents with mean score of 4.81.

4.17 Perception of Respondents on Reliability of System

Table 4.25 perception of respondents on reliability of system

Do you think that SWS is better reliable	Respondents				
	Item	No.	%	Valid %	Cum %
	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	13	0.13	0.13	0.13
	Strongly Agree	87	0.87	0.87	1.00
	Mean=4.87				

(Source: computed from survey result, 2021)

The above table shows perception of respondents' towards the relationship between single window system and its reliability. From total of 100 respondents, 13 (13%) of respondents agreed that electronic single window is reliable for transaction of documents and 87 (87%) of them strongly agreed that electronic single window is reliable system for lodging and transformation of documents with mean score of 4.87.

4.18 Perception of Respondents on Overall Performance of System

Table 4.26 perception on overall performance of system

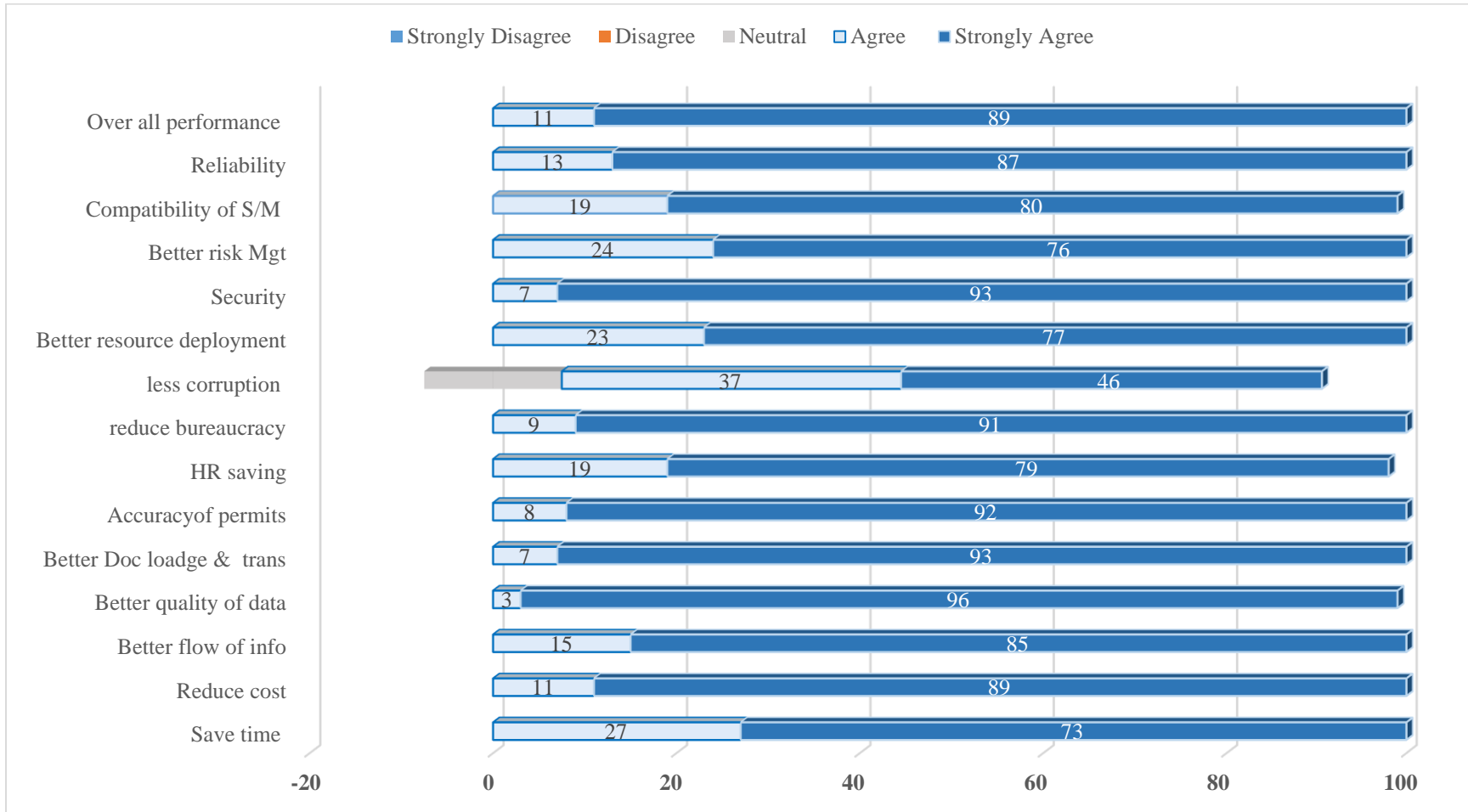
Does the overall performance of single window system is better compared to previous accomplishment of same activity?	Respondents				
	Item	No.	%	Valid %	Cum %
	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	0	0	0	0
	Agree	11	0.11	0.11	0.11
	Strongly Agree	89	0.89	0.89	1.00
	Mean=4.89				

(Source: computed from survey result, 2021)

The above table indicates perception of respondents' towards the relationship between implementation of electronic single window system and its overall performance. From total of 100 respondents, 89 (89%) of respondents strongly agreed that electronic single window enables to perform better compared to previous accomplishment of same activity and 11 (11%) of them agreed that electronic single window enables to better performance better compared to previous accomplishment of same activity with mean score of 4.89.

4.19 Summary of Respondent's Perception on The Impact of Electronic Single Window Implementation on Trade Process

Figure 4.7 summary of respondent's perception on the impact of electronic single window implementation on trade process



(Source: survey result, 2021)

4.20 The effect of electronic single window on reduction of clearance time

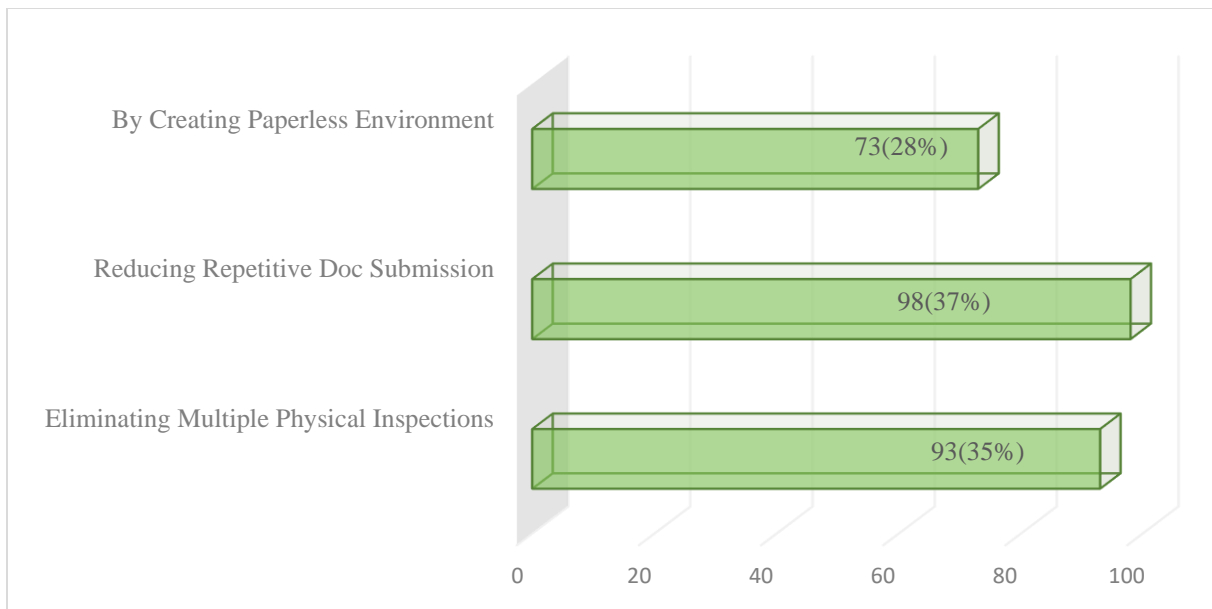
Table 4.27 time taken for clearance of good before and after implementation of eSW

Level	before		After	
	Count result	Percent	Count result	Percent
1-3 days	1	0.01	29	0.29
4-6 days	10	0.1	67	0.67
7-8 days	21	0.21	4	0.04
8-10	64	0.64	0	0
Above 10	4	0.04	0	0
Total		1		1

(Source: survey result, 2021)

As shown on table 4. 27 a according to majority of respondents (64%) before the implementation of eSW traders wait custom for clearance of good is 8-10 days. The implementation of electronic single window reduced the clearance of time to 4-6 days (67%). this indicates the implementation of electronic single window has reduced clearance of time in average from 9 days to 5 days, which means it reduced the total time taken to proceed by 4 days or 44%.

Figure 4.8 Areas resulting in time saving



(Source: survey result, 2021)

There are different multiple factors in which time of clearance being reduced or saved due to implementation of electronic single window system. According to respondents information there are three main contributors to time saving of clearance. Thus eliminating multiple physical inspection, reducing repetitive document submission and by creating paperless environment. 28% sighted the improvement in paperless environment due to the eSW implementation as a source of time reduction or saving. 37% attributed to the savings made in the time of clearance of goods due to reducing repetitive document submission. 35% of respondents indicated that time saved due to reducing multiple physical inspection as a result of the implementation of the eSW.

4.21 The effect of electronic single window on reduction of cost of clearance

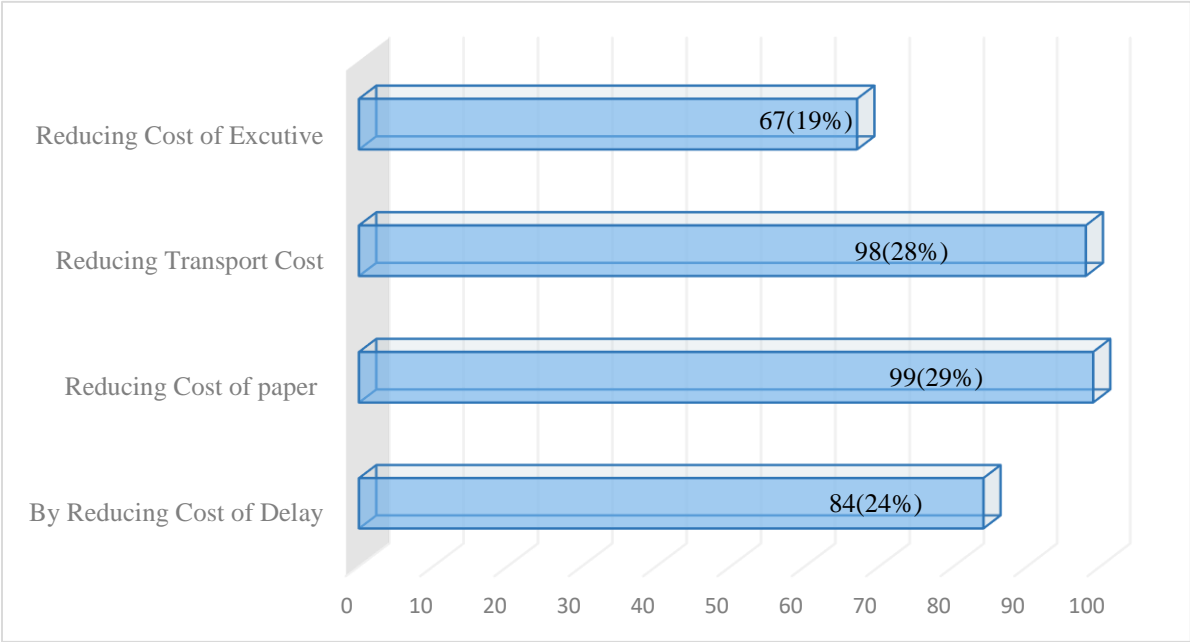
Table 4.28 cost incurred per month for clearance of good before and after implementation of eSW

Level	Count result	Percent	count result	Percent
Below 1000br			72	0.72
1000-2000br			25	0.25
2000- 4000Br	12	0.12	3	0.03
4000-6000Br	68	0.68	0	0
6000-8000Br	15	0.15	0	0
Above 8000Br	5	0.05	0	0
Total		1		1

(Source: survey result, 2021)

As shown on table 4. 28 a before the implementation of eSW majority of respondents (68%) said that cost of clearance incurred is 4000-6000 Br. In average which is 5000 Br. Implementation of electronic single window reduced the cost of clearance to below 1000 (72% of respondents), that reduced the total cost of clearance by 80 %.

Figure 4.9 Areas resulting in cost reduction

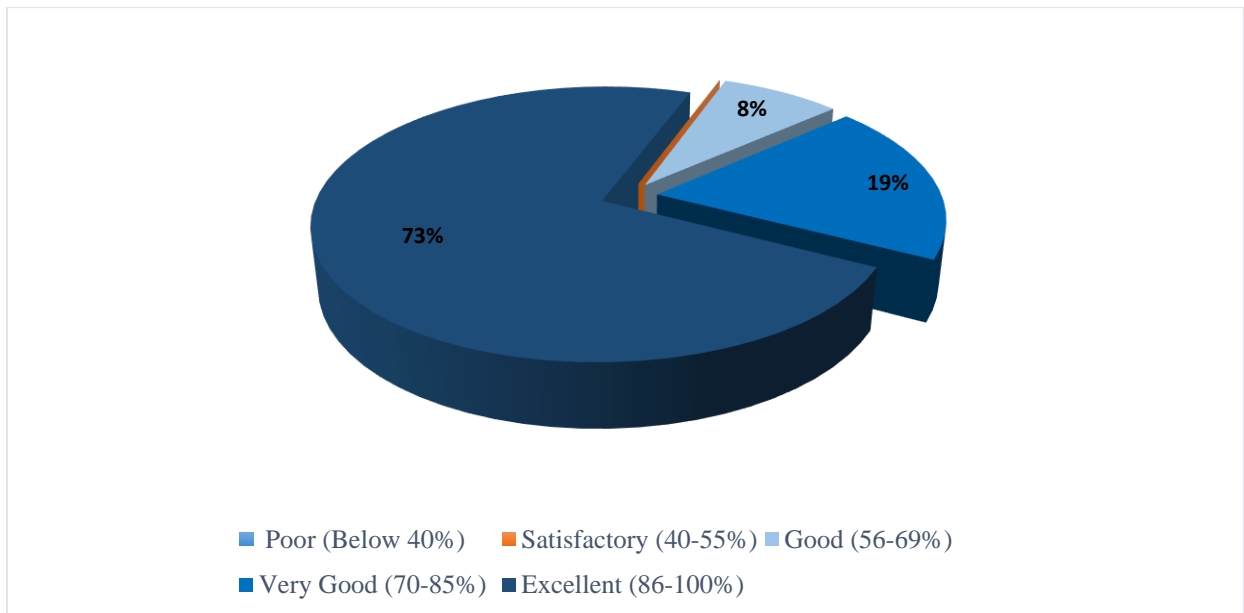


(Source: survey result, 2021)

The study found that there are four different factors that contributed for reduction of cost. Those are 24 % is contributed from reduction of cost of delay, 29% contributed from reduction of cost of paper, 28% from reduction of transport cost and 19% from cost of executives.

4.21 Respondents Satisfaction Level

Figure 4.10 Satisfaction level of respondents on trade process



(Source: survey result, 2021)

Perception of respondents regarding the role of the introduction of the Electronic Single Window System on trade process. The above figure gives the views expressed by the respondents. 73% of respondents expressed their view that trade process has been excellent since the implementation of electronic single window system, 19% rated the impact on trade process as very good, 8% as good and none of the respondents select satisfactory and poor level of evaluation.

4.22 Descriptive analysis and rank of variables

Table 4.29 Descriptive analysis and rank of variables

Statistic	Minimum	Maximum	Mean	RII	Rank	Variance	Standard deviation
Save time	4	5	4.73	0.946	13	0.189	0.435
Reduce cost	4	5	4.89	0.978	6	0.010	0.100
Better flow of info	4	5	4.85	0.97	9	0.048	0.219
Better quality of data	5	5	4.97	0.984	3	0.000	0.000
Better Doc lodge &trans	4	5	4.93	0.986	1	0.020	0.141
Accuracy	5	5	4.92	0.983	4	0.000	0.000
HR saving	4	5	4.81	0.942	14	0.158	0.397
Reduce bureaucracy	4	5	4.91	0.982	5	0.039	0.197
Less corruption	3	5	4.32	0.846	15	0.557	0.747
Better resource deployment	4	5	4.77	0.954	10	0.168	0.409
Security	4	5	4.93	0.985	2	0.010	0.100
Better risk Mgt	4	5	4.76	0.952	11	0.039	0.197
Compatibility of S/M	4	5	4.81	0.952	12	0.146	0.382
Reliability	4	5	4.87	0.974	8	0.039	0.197
Overall performance	4	5	4.89	0.975	7	0.107	0.327

Table 4.25 above shows that the impact of implementation of electronic single window on the above top 10 variables. The most five important variables that affected by implementation of electronic single window are: document lodgments and transformation, security of document transaction, quality of data, accuracy of document permit and reduction of bureaucracy with RII (relative important index) of 0.986, 0.985, 0.984, 0.983 and 0.982 and with standard deviation of 0.141, 0.10, 0, 0 and 0.197 respectively. Reduction of cost, overall performance of system, reliability of the system, flow of information and resource deployment ranked from 6 to 10 with RII (relative important index) 0.982, 0.978, 0.975, 0.974 and 0.97 and with standard deviation of 0.1, 0.327, 0.197, 0.219 and 0.409 respectively.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Summary of Major Finding

The main objective of this study is to assess the effect of electronic single window implementation on trade process, from trader's perspective. And specific objectives include identifying the effect of electronic single window on time of clearance, cost of clearance and other trade related processes. Also investigating the effect of electronic single window dimensions in customer satisfaction and evaluating the level of customers' satisfaction under study. Regarding implementation of electronic single window and trade processes, it is found that the electronic single window has brought a positive effect on time of clearance, cost of clearance and other trade processes.

The outcome of the study indicated that the introduction of the electronic single window reduced time of clearance from 9 days to 5 days in average. And cost of clearance is significantly reduced from 5000 to below 1000 Br (above 80%). Total time of clearance for one shipment is reduced through eliminating multiple physical inspection with 35%, reducing repetitive document submission with 37% and by creating paperless environment with 28%. And also the study found that reduction of cost of clearance is contributed from reduced cost of delay with 24 %, reduced cost of paper with 29%, and reduced transport cost with 28% and 19% from reduced cost of executives. In addition to this the system brought positive effect on transformation and lodgments of documents, enhanced quality of data, eliminated the duplication of data, Reduces of bureaucracy processes and accuracy of document permits.

5.2 Conclusion

Based on the findings of the study the following concluded that the following conclusion is drawn. From the result of the overall effect of electronic single window, it is found that the respondents' perception is positive so the study can conclude that the effect of electronic single window on trade process is high contributor. The overall mean value of respondent satisfaction regarding to time of clearance and cost of clearance after the implementation of electronic single window shown 4.73 and 4.89 respectively. That is strongly agree level of agreement thus, it is possible to conclude that respondents' were on high level of satisfaction with the service given by implementation of electronic single window.

73% of respondents expressed their satisfaction level regarding the effect of electronic single window on trade process as excellent, it is possible to conclude that majority of respondents' were very satisfied on the effect of electronic single window. The conclusion to be drawn from the relative importance index result is that time of clearance and cost of clearance have significant effect on trade process and it is ranked as 13th and 6th respectively. Whereas empathy and tangibility have insignificant effect on customer satisfaction.

5.3 Recommendation

As far as the findings of the research are concerned, the overall implementation of electronic single window in trade process has been found to be successful. But there are some issues which need attention to make the new system fully operational and institutionalized.

They are listed as follows:

- Time of clearance is positively related to the implementation of electronic single window but it is not properly addressed as perception of respondents. Therefore, the concerned parties should give attention to improve time of clearance more than current consumption to approve for each transaction. For better compatibility of system also the concerned parties should provide different training conferences about the operation of electronic single window system. Government should ensure the provision of IT and network infrastructures to support the full implementation of the system and for better improvement in operation of the system

- Electronic single window also positively related with cost of clearance however for efficient utilization of resource, continuous improvement in technological updates is needed of the electronic single window.
- The implementation of electronic single window has also positive effect on other trade processes such as transformation and lodgments of documents, enhanced quality of data, eliminated the duplication of data, Reduces of bureaucracy processes, accuracy of document permits etc. however in order to improve compatibility of system robust feedback mechanism should be developed to ensure stakeholder inputs for addressing operational challenges.

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QUESTIONNAIRE

ST.MARY UNIVERITY SCHOOL OF POSTGRADUATE

Dear respondent,

I am post graduate student at St. Mary University. I am working research paper for the partial fulfilment of MA degree. My research title is assessing perception of the impact of implementation of electronic single window in ministry of revenue and customs authority. The questionnaire is prepared to identify your view on the impact of implementation of electronic single window on ministry of revenue and custom authority. The data will be used only for academic purpose and your response is not forwarded to other 3rd party and it is kept confidential, please answer each questionnaire. Thank you for your time and cooperation. No need of writing your name.

Please put a tick (√) the most appropriate answer(s)

A. BASIC INFORMATION		
1. Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>
2. Age Group	18-30 <input type="checkbox"/> 45-60 <input type="checkbox"/>	30-45 <input type="checkbox"/> Above 60 <input type="checkbox"/>
3. Educational Background	High school <input type="checkbox"/> First degree <input type="checkbox"/>	Diploma <input type="checkbox"/> 2nd degree and above <input type="checkbox"/>
4. What is your position in your organization? -----		
5. How long have you been working in your filed?	0-3 Years <input type="checkbox"/> 7-9 Years <input type="checkbox"/>	4-6 Years <input type="checkbox"/> Above 9 Years <input type="checkbox"/>

B. QUESTION ABOUT ELECTRONIC SINGLE WINDOW AND SERVICE QUALITY

6. How best do you understand Ethiopia electronic Single Window System being implemented?	Fully <input type="checkbox"/> Low <input type="checkbox"/>	Partially <input type="checkbox"/>
7. How long have your company been working with electronic single window?	Less than 3 month <input type="checkbox"/> 6 months- 1 year <input type="checkbox"/>	3 months -6 months <input type="checkbox"/> Above 1 year <input type="checkbox"/>
8. Are your company	Importer <input type="checkbox"/> Both <input type="checkbox"/>	Exporter <input type="checkbox"/>
9. Do you feel that there is a necessity for implementing the Electronic Single Window System (SWS)? Why?	Yes <input type="checkbox"/>	No <input type="checkbox"/> Reason -----
10. Do you feel that the establishment of Electronic Single Window System led to the simplification in the lodging of trade documents?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
11. Do you feel that the SWS eliminated the duplication of data by providing a centralized portal for lodging of trade documents to the regulatory agencies and custom authority?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
12. Do you feel the implementation of the Electronic Single Window System improved efficiency of trade process in your company?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<p>If your answer is yes for question no 12, how the introduction and implementation of the electronic Single Window System improved trade process in your company?</p> <p>Tick one for each 1 = Strongly disagree, 2 = disagree, 3 = Neither disagree nor agree/ Neutral /, 4 = Agree and 5 = Strongly agree</p>		
13. Do you feel the implementation of SWS helped your company to save time of clearance?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
14. Do you feel that the implementation of SWS reduce cost of clearance in your company?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>

15. Do you feel that the implementation of SWS enables Better flow of information?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
16. Does implementation of SWS provides better quality of data?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
17. Do you think that SWS are better for document lodgments and transformation?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
18. Do you think that the implementation of SWS Increase accuracy of document permit?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
19. Do you think that the implementation of SWS enables to save human resource?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
20. Does the implementation of SWS Reduces of bureaucracy processes?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
21. Do you think that the implementation of SWS helps to reduce corruption in customs and participant entities?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
22. Do you think that implementation of SWS lead to effective and efficient deployment of resource	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
23. Do you think that SWS is better for secured transaction of document?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
24. Do you think SWS enable the use of sophisticated 'risk management' techniques for control and enforcement purposes	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
25. Does Operation of Single window system compatible?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>

26. Do you think that SWS is better reliable?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
27. Does the overall performance of single window system is better compared to previous accomplishment of same activity?	Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/> Strongly disagree <input type="checkbox"/>
28. What time taken for clearance of good before and after implementation of eSW?	Before eSW 1-3 days <input type="checkbox"/> 4-6 days <input type="checkbox"/> 7-8 days <input type="checkbox"/> 8-10 <input type="checkbox"/> Above 10 <input type="checkbox"/>	After eSW 1-3 days <input type="checkbox"/> 4-6 days <input type="checkbox"/> 7-8 days <input type="checkbox"/> 8-10 <input type="checkbox"/> Above 10 <input type="checkbox"/>
29. If SWS helped your company to save of time of clearance, how?	Through eliminating multiple physical inspections	
	Through reducing Repetitive document submissions	
	By creating a paperless environment	
	Others (please state) -----	
30. What cost incurred per month for clearance of good before and after implementation of eSW	Before eSW Below 1000Br <input type="checkbox"/> 1000-2000Br <input type="checkbox"/> 2000- 4000Br <input type="checkbox"/> 4000-6000Br <input type="checkbox"/> 6000-8000Br <input type="checkbox"/> Above 8000Br <input type="checkbox"/>	After eSW Below 1000Br <input type="checkbox"/> 1000-2000Br <input type="checkbox"/> 2000- 4000Br <input type="checkbox"/> 4000-6000Br <input type="checkbox"/> 6000-8000Br <input type="checkbox"/> Above 8000Br <input type="checkbox"/>
31. If SWS helped for reduction of cost of clearance, how?	Reducing costs through reducing delays	
	Reducing time of trade related procedures	
	Reducing too much paper usage	
	Through the travel of traders to and from government agencies	
	Others (please state) -----	

32. Do you feel that the process of transitioning to the SWS was sufficiently well addressed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
33. How would you rate the Single Window System since its implementation in trade facilitation?	Excellent (86-100%)	<input type="checkbox"/>
	Very good (70 – 85%)	<input type="checkbox"/>
	Good (56 – 69)%	<input type="checkbox"/>
	Satisfactory (40 – 55%)	<input type="checkbox"/>
	Poor (below 40%)	<input type="checkbox"/>
32. What are your recommendation to enhance efficiency of single window? ----- -----		