

# The Effectiveness of Customs Risk Management Selectivity Process on Import Trade; The Case of Ethiopian Customs Commission (Time Series Big Data Analysis)

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**Abstract:** The main purpose of this study was to analyse the effectiveness of import trade risk selectivity system in Ethiopian customs commission risk management process. The study aims to examine how strongly manual selection, rule base selection, random selection and list base selection method are associated with detection rate. The study employed descriptive and explanatory method with quantitative research approach. Three years secondary data from Ethiopian customs risk management system was collected. For this study there are four independent variables; manual selectivity, rule base selectivity, random selectivity and list base selectivity with one dependent variable i.e. detection rate. The collected data were analyzed using descriptive and inferential statistics. For this research, Pearson correlation coefficient was applied to examine how strongly each selectivity method is associated with detection rate. From the analysis result, it was concluded that manual and rule base selectivity's have strong negative association with detection rate while random and list base selectivity's have strong positive and weak positive association respectively. Recommendations were also given to compliance and risk directorate has to continue with strengthening the existing working process and procedure regarding on manual selection method, the directorate has to work more to improve efficiency and effectiveness of rule base selection through automatic risk profile analysis of importers and goods and revising the current selectivity criteria.

**Keywords:** Detection Rate, Manual Selectivity, Rule Base Selectivity

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## 1. Introduction

High volumes of trade, complicated structures of global supply chains, advances in criminal activities, and fear of terrorism, amongst other factors and trends, set challenges for customs administrations worldwide, while aiming for high compliance rates and high degree of trade facilitation in their respective territories [14]. Now a day, the need for balancing to facilitate legitimate trade and to control high risk declaration is the most important issue for every customs administration at this time.

The increasing flow and volume of international trade powered with technological advancement have changed the world trade practice; especially it motivates customs administration system to introduce new approaches to cope up with this dynamic goods flow. To harmonize regulatory

control and trade facilitation, many Customs have adopted risk management as their dominant philosophy and this was embedded in the WCO's Revised Kyoto Convention [6].

Ethiopia as a member of WCO and land lock country inevitably adopted trade facilitation and controlling mechanisms. Among of different trade facilitation ways, Ethiopian customs commission applied customs risk management philosophy to facilitate and control the import and export trade flow. In regarding to this, World Bank emphasized as "A revised Code can also help trade facilitation by supporting the use of risk management practices and by eliminating complex or redundant customs formalities that delay clearance and create opportunities for unnecessary discretionary intervention [11]. The application of customs risk management can balance the facilitation and controlling of goods by minimizing unnecessary intervention

of customs administration.

For Customs, the most prominent risks are non-compliant or illegitimate trade transactions undermining government revenue and dangerous goods threatening society, although risks that Customs should address are all events and activities that hinder Customs from achieving their objectives [14]. This indicates effective targeting of those non-compliant importers, exporters, customs declarants, passengers and containers is an important aspect in Ethiopian customs commission risk management selectivity process.

The main characteristic of customs risk management approach is determining which persons, goods, and means of transport should be examined and to what extent. High-risk persons, goods and means of transport are subject of high-level controls and interventions; despite of low-risk ones that receive high-level trade facilitation [2].

The Ethiopian customs commission risk management selectivity system triggers risk level for declaration by four ways of selectivity process to facilitate the compliant trader and to detect those non-complaints. These are rule-based selectivity system, list based selectivity system, random selectivity system and manual selectivity system. Accordingly, analysing of which selectivity system is more effective in Ethiopian customs risk management process is most essential for customs operation. The issue of measuring the performance or effectiveness of risk selectivity system is more strengthened by world customs organization as it dictates in the following statement. "Customs endeavours to improve selectivity to raise detection rates [15].

The risk selectivity process enables to target and detect customs frauds as much as possible to minimize the cost in economic, social and environmental impacts. Thus measuring the performance of detection rate of risk selectivity is necessary to change, modify or strengthening the existing work process selectivity.

Therefore, the main purpose of this paper is to analyse the effectiveness of import trade risk selectivity system in Ethiopian customs commission risk management process.

### **1.1. Statement of the Problem**

At this globalized world, the growth of international trade volume increased from time to time that enforces countries to open up their doors in order to get competitive advantage through creating favorable environment for trade facilitation and at the same time protecting themselves from damaging financial and non-financial customs risks. The world customs organization study also briefly describes it as "with globalisation, international trade has increased significantly and is expected to continue to rise" [16].

According to the research conducted by [2], the main dilemma in Customs management, especially during the last two decades, is balancing the needs for trade facilitation as a process of simplification, standardization and unification of documents and procedures in international supply chain, on the one, and the level of controls and interventions, on the other hand. As it is impossible for customs to inspect all shipments and release all cargo without inspection. Thus

customs administration adopts risk management approach to avoid tension or pressure to identify which cargo is facilitate and which one is controlled.

The customs modernization handbook developed by World Bank emphasis that modern customs practices and operations need to fully reflect the principles of risk management [11]. The Ethiopian customs commission adopted and implemented the risk management approach in the operation of customs process. Even though the science of risk management as a tool adopted in Ethiopian customs commission was almost not more than 15 years (risk management training document), it has changed the whole customs process from the mass physical examination of goods and scrutiny of documents to selective, evidence and information based controlling as well as facilitation process by automation system.

The application of Customs risk management provides a wide range of benefits for Customs and traders, such as: better human resource allocation; increased revenues; improved compliance with laws and regulations; improved collaboration between traders and Customs; reduced release time and lower transaction costs [10]. This indicates that the role of application of customs risk management approach has substantially contributed in achieving customs administrations objectives and goals. Such an approach has the potential to improve effectiveness and efficiency and can significantly help build the ability to deploy resources toward the greatest areas of risk [11].

As such great role of customs risk management approach in facilitating and controlling customs process measuring the effectiveness of risk selectivity system in detecting customs fraud is necessary. According to [15], Detection rates are a good indicator to evaluate the performance of the selectivity systems. Though there are costs like social cost (health, security) and environment cost which can't be measured quantitatively.

As far as the knowledge of the researcher is concerned, there was no research conducted on this topic before, but prior studies on the challenges of customs clearance process [4, 8] studied on the cost of time delay that traders face in customs clearance process. Despite such attempts, they did not address to measure the effectiveness of customs risk management selectivity system.

Therefore, the main purpose this research is to measure the effectiveness of risk selectivity and examine how more strongly a selection method is associated with detection than another selection method and determine which selection method is most effective in Ethiopian customs commission risk management selectivity system.

### **1.2. Research Question**

Based on the nature of the problem and the objectives of the research, the following are research questions to be addressed.

1. How strongly is each risk selection method associated with detection rate?
2. Which selection method is most effective in Ethiopian customs commission risk management selectivity system?

### 1.3. Objectives of the Research

The objectives of this research are:

1. To examine how more strongly a selection method is associated with detection than another selection method.
2. To determine which selection method is most effective in Ethiopian customs commission risk management selectivity system.

## 2. Related Literature Review

In this chapter detailed literature review on the effectiveness of customs risk management selectivity system to detect customs fraud are discussed. This part also presents literatures that focus on understanding of risk management on trade facilitation and controlling in general and particularly on Ethiopian customs commission.

### 2.1. Definition

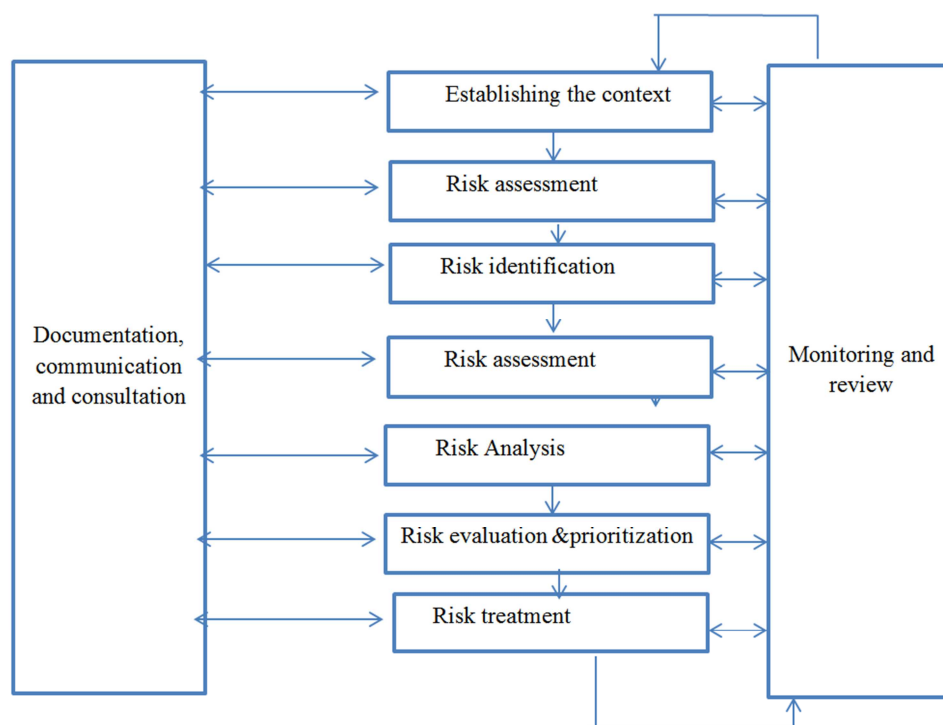
‘Customs risk’ refers to the risk of noncompliance with customs legislation [13]. According to [12] definition, ‘customs risk management’ (CRM) as the system of managing customs policies, procedures and practices through having the necessary information and intelligence in order to

identify, analyse, monitor and address risks of imported consignments [12].

Though different organizations define risk management from different perspective the meaning of it is more similar. The World Customs Organisation defines “Risk” as a systematic application of management procedures and practices providing Customs with the necessary information to address movements of consignments which present a risk [14]. Customs, however, defines “Risk” as a systematic method of identifying, evaluating and controlling potential adverse events and consequences that allows Customs to achieve compliance with legislative requirements through a blend of education, facilitation and enforcement. It provides managers with concrete information to make decisions on existing and emerging threats and to allocate resources to high- risk areas.

### 2.2. Risk Management Process

Different research result develops the process of risk management, the researcher takes the revised keyto convention risk management process for better understand about the subject matter. Here in below figure depicts the process of risk management.



Source: adapted from Revised Kyoto Convention

**Figure 1.** Risk management process.

#### *Establishing the context*

This stage defines the context in which risk management will take place, and aims at clearly articulating and clarifying the objectives and what risks are being examine. Determining what needs to be managed helps set the parameters for the rest of the risk management process.

#### *Risk identification*

Risks cannot be analysed or managed until they are identified and described in an understandable way. The risk identification phase identifies and records all potential risks by using a systematic process to identify what risks could arise, why, and how, thus forming the basis for further

analysis. The outcome of the risk identification process is a register of risks, which documents the risks and ensures that the entire risk spectrum is considered.

#### *Risk analysis*

Risk analysis is principally about quantifying risk, and requires consideration of the sources of Identified risks, an assessment of their potential consequences in terms of achieving objectives, and judgment as to the likelihood that the consequences will occur (in the absence of any specific treatment with the existing controls in place). It relies upon the use of data and information to substantiate the consequences that are likely to be incurred if the risk occurs and/ or remains unaddressed. Even though risk analysis should be evidence-based to the extent possible, it needs to be remembered that it is not an exact science.

#### *Risk evaluation and prioritization*

This step entails comparing the assessed risks against a pre-determined significance criterion. By considering the risk level of each of the risks as described by the relevant management team in the matrix, it is possible to evaluate and prioritize the key risks that need to be analysed in more detail. This will then lead to the deployment of proportionate resources in order to prepare for, prevent or respond to the risk.

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#### *Risk treatment*

Risk treatment refers to the decisions or actions taken in response to identified risk. There are four generic types of responses that can be applied. These are the so-called “four t’s”, tolerate; treat; Transfer, terminate.

#### *Monitoring and review*

Monitoring and review should include all aspects of the risk management process, including the performance of the risk management system, the changes that might affect it and whether the original risks remain static.

#### *Documentation, communication and consultation*

Communication and consultation with internal and external stakeholders should be conducted as appropriate at each stage of the risk management process, and for the process as a whole. Communication and consultation should be planned and on-going activities addressing not just the process, but any issues that may arise.

#### *Monitoring and review*

Monitoring and review should include all aspects of the risk management process, including the performance of the risk management system, the changes that might affect it and whether the original risks remain static.

### **2.3. Risk Management and Customs Performance**

The increasing complexity, speed, and volume of international trade, fuelled by the technological advances that have revolutionised global trading practices, have significantly affected the way in which customs authorities carry out their responsibilities. As a consequence, many administrations have implemented disciplined and structured approaches to managing risks [17].

According to [13], Risk Management System (RMS) replaces total control and becomes a new evolutionary stage in the development of customs control technologies. It may be defined as a range of measures designed to support selectivity within the scope of customs control to safeguard customs regulatory interests and state security (and, from a regional perspective, the security of member states). It represents an efficient mechanism which is intended to serve the interests of all participants in customs relations – government agencies and foreign-economic activity participants. As such, it satisfies the required principles and standards of modern customs administration [13].

The Risk management does not ensure only economic benefits, by facilitating the movement of goods, ships, aircrafts and people – when rated low risk, but at the same time, it provides more effective use of existing skills and experience and improves the quality of Customs controls [6].

### **2.4. Customs Frauds**

The risks committed in customs are different from country to country both on the types of risk as well as the way cheating method. According to [7], there are two main risk areas defined in the documents on selectivity controls in customs operations, which are customs frauds and threats on social safety and security. Customs frauds, as evading payment of tariffs and other duties, are treated through: declaring and accepting improper customs value; declaring and accepting misclassification; declaring and accepting improper origin of goods; discharging of import for processing; discharging of outward processing; illicit removal of goods from customs supervision; and undeclared import goods for customs clearance, are one of the most important and highly recognized risks in Customs management strategies worldwide.

In Ethiopian case the most frequently committed customs risk is the fraud of under valuation followed by miss classification by importers. This is because the importers want to avoid paying duty and tax or it is the intention to pay minimum duty and tax.

The following table shows the analysis results on type’s frauds and the scale of fraud committed in Ethiopian customs commission clearance process.

**Table 1.** Top five fraud types in Ethiopian customs commission.

NO	Types of Customs Fraud Committed	the Probability of Occurrence in %	The Consequence of the Fraud IN %
1	UV	76.44	76.33
2	MC	4.64	11.75
3	MD	2.56	4.34

NO	Types of Customs Fraud Committed	the Probability of Occurrence in %	The Consequence of the Fraud IN %
4	OD	0.06	0.02
5	CPC	0.61	0.4

Source: [5] & [9]

As it is shown from the above table, under valuation, miss classification, miss description and CPC error are among of the top four Ethiopian customs commission fraud types committed by both probability of occurrence and the consequence of impacts. The probability of occurrence of a given fraud type measured by the ratio of the total declaration with a given fraud committed to the declaration registered in the specified period of time. While the consequence of a given fraud type is measured by the ratio of the total additional revenue collected due to the prevalence of fraud type to the total tax and revenue collected during given period of time.

Even though the activity of protecting and controlling customs fraud and tax evasion is the responsibility of all customs departments, customs risk management directorate use four way of risk selectivity process on import declaration to minimize customs fraud and to target those frauds effectively.

### 2.5. Risk Selectivity System in Ethiopian Customs Commission

The Ethiopian custom risk management system manages the overall facilitation and controlling of import and export trade process. When the customs authority wants to facilitate the customs process, lowers the selectivity rate and also adjusts the selection rate as a result of health risks of some imported goods. The Ethiopian customs commission applied four types risk selectivity method in combination to facilitate and control frauds.

#### A. Manual selection:

The manual selection process in Ethiopian customs risk management selectivity system is non-automated selectivity method. It is rather performed by customs experts at the operational clearance level. The manual intervention of declaration risk level is done by customs officer when they suspect declaration has some indication of fraud.

#### B. Random selection

In Ethiopian customs commission risk management selectivity process, random selection is applied on importers to capture the prevalence of illegitimate cargoes or transactions, to create deterrent effect aiming to promote compliance level and to fill the gap and short comings of all others selectivity method. Random selection is not an independent selectivity method rather it an additional method of selectivity.

#### C. List based selection

The Ethiopian customs commission risk management directorate aiming to facilitate the legitimate trader and to strictly control high risk cargo develops a type of risk selectivity called list based. This method is applied on those importers and goods which are either in better compliance level or are those importers believed to have less impact on the customs fraud record or are trusted importers or are at high risk shipments by the customs commission. Some of those goods or importers configured at list base selectivity system are warehouse removal list, cars list, government organizations

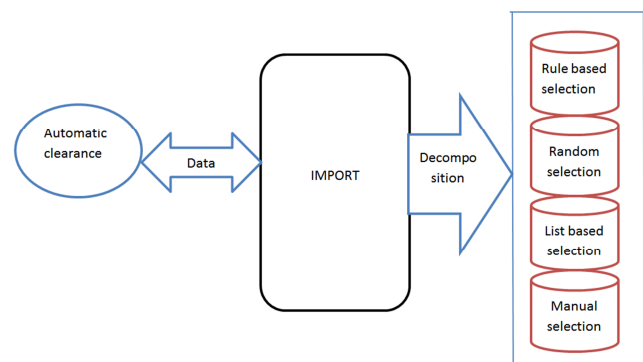
list, diplomats and international organization list, settlement and transfer list, temporary at unaltered list (IM6,), customs special privilege list and authorize economic operator list.

There for, in this selectivity method the risk level is determined before importer starts to import goods. The importer probably knows the type risk level which will be lane for his /her cargo prior to import. Unless and otherwise there is no any third party information or suspicious, the cargo will release with this list based risk selectivity risk level. However, if there is any unclear about the good, the customs officers intervene risk level.

Due to the static nature of the list base risk selectivity for a long period of time without being change or update, it may lead importers to abuse customs rules and regulation to commit fraud and there might be compliance importers that require change in risk level.

#### D. Rule based selection

In Ethiopian customs commission, in import risk selectivity process, rule base selectivity method plays important role and covers the lion share of all other methods. This method of selectivity is conducted by analysing importers profile and goods risk level using historical data. The rule based selectivity is purely objective method of risk analysing process as it is conducted for selected risk criteria by customs commission that can be measured. The profile analyses are conducted centrally at the head quarter for all importers and goods and configure to ECMS automatically to apply for all customs branch operational level.



Source: [5]

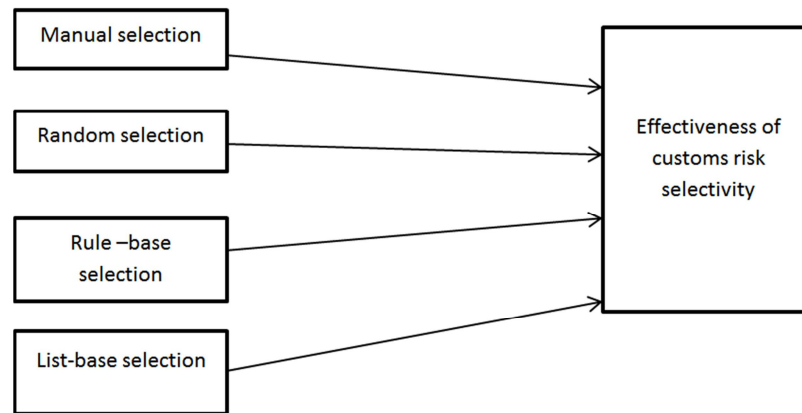
**Figure 2.** Ethiopian customs commission risk selectivity system for import clearance.

Having this in mind, the role and importance of risk management practice in customs operation process to improve revenue collection, detect customs fraud and minimizing of goods released time in this paper the researcher tries to analyse the effectiveness of Ethiopian customs commission risk management selectivity practice in customs operation process by chronological evidenced based data analysis.

## 2.6. Conceptual Frame Work

Having reviewed literatures the conceptual framework for the effectiveness of customs risk selectivity process in Ethiopian customs commission was developed. The

framework includes the four types of customs risk selection method which determines the effectiveness import clearance risk selectivity. These are manual selection, random selection, rule base selection and list-base selection.



Source; Modified from [5] & [15]

**Figure 3.** Conceptual frame work of the study.

## 3. Methodology of the Study

The study focuses the effectiveness of customs risk management import selectivity process the case of Ethiopian customs commission. In this chapter the underlying principle of research design and methodology, the population of the study area, sampling design and sample size, data collection techniques and method of data analysis explained.

### 3.1. Research Approach and Data Type

Based on the nature of the problem and the data to be analysed, quantitative research approaches were employed with both descriptive and explanatory research design adopted. The data type is secondary data which is found at electronic customs management system [5]. Thus the research is conducted on three years' time serial analysis on big data at macroeconomic level.

### 3.2. Methods of Data Analysis

The quantitative data were summarized and analysed by using descriptive statistics and inferential statistics like correlation analysis. Then the data were described using tables for more clarification and the researcher used scientific statistical data analysis software SPSS v25&MS excel, 2010 version.

## 4. Presentation and Data Analysis

### *Efficiency and Effectiveness of Risk Selectivity System*

Here, in this analysis the researcher tries to measure the efficiency and effectiveness of each risk selectivity method in contextual to customs language. Thereby, the researcher tries to identify which selection criterion is most effective and efficient.

### 4.1. Efficiency of Risk Selectivity System

According to [15], study indication, selection efficiency which takes into accounts the effectiveness of detection and the costs derived by selection simultaneously. This can be expressed in a ratio of the detection rate to the selection rate. This implies that when there are the same levels of selection method and detection rate, a selection method with lower cost is preferred and is efficient.

Thus the researcher measures efficiency of selectivity method in two ways. Firstly, it can be measure by dividing the detection rate to the selection rate for each selectivity method [15] which indicates the selectivity of each method to deploy with in minimum cost. Secondly, the researcher tries to look to measure efficiency of selectivity method through ability of each selection method to raise revenue of additional payment from captured and targeted fraud declarations.

**Table 2.** Efficiency of selectivity method.

Risk selection method	Detection rate	selection rate	rate of additional revenue collected from detected fraud	ratio of detection rate to selection rate	ratio of additional revenue collected to selection rate
List based	13.26	25.43	5.82	0.52	0.23
Random selection	27.69	3.01	0.73	9.20	0.24
Manual selection	63.42	7.55	6.46	8.40	0.86
Rule based selection	44.47	64.01	24.77	0.69	0.39

According to the above table from the perspective of detection to selection ratio, random selection selectivity



method has the highest rate of efficiency followed by manual selection among of other methods while list based selectivity has lowest rate of efficiency. From the perspective of rate of additional revenue collected to selected rate of ratio, manual selection is most efficient method of selectivity followed by rule based selection method and list base has the lowest rate of efficiency accordingly. In this case a method is said to be efficient when it achieves its objective within minimum or no cost, in other words a selectivity method with minimum selectivity rate combined with high detection rate and high rate of additional payment rate is efficient to be preferable. Thus manual selection method is best efficient both in detection rate and total additional payment rate comparing to other methods.

However, list base selection has minimum rate of both in detection and additional payment rate. The risk management directorate has to revise the list base selectivity method.

#### 4.2. Effectiveness of Selection Method

The Selection does not guarantee for effective detection. According to [15], study develops a relative risk formulation to examine how more strongly a selection method is associated than another selection method and determine which selection method is most effective. The relative risk doesn't show how well the selection method targets but it can indicate which selection method is more accurate. The relative risk refers to the ratio of probabilities in which an event occurs in two different groups [1]. Accordingly, the relative risk is calculated by dividing the detection rate of the required relative selection method. For instance, the relative risk of the manual selection to the random selection is calculated by dividing the detection rate of the manual selection by the detection rate of the random selection.

**Table 3.** Relative risks for the selection methods of the import selectivity system.

	2019	2020	2021
Manual selection to Rule base selection	1.29	1.50	1.48
Rule base selection to Random selection	1.04	2.28	2.04
Manual selection to List base selection	4.37	5.18	4.79
Random selection to List base selection	3.25	1.51	1.58

According to the above table, the detection probability by the manual selection (MNS) is about four to five times higher than that of the list base selection (LBS) ( $MNS > LBS$ ). The rule-based selection (RBS)'s detection probability is about two times higher that of the random selection ( $RBS > RDS$ ). The manual selection is about more than one times better than the rule-based selection in detection probability ( $MNS > RBS$ ). The random selection is about more than one to three times better than the list-based selection in detection probability ( $MNS > LBS$ ).

According to the relative risks result, the manual selection is the most effective among the other methods ( $MNS > RBS > RDS > LBS$ ). List-based selection has the lowest detection performance. The result indicates that officers at the operational level can detect customs fraud more better than rule based selection and other methods, this might be due to different reason one may be officers can effectively select fraud declarations using their experience and knowledge at the operational level more than other selectivity method. Based on

relative risk result, in order to increase revenue collection, the Ethiopian customs commission has to increase manual selection rate while the customs commission aims to facilitate import trade shall increase list base selection rate.

**Table 4.** Correlation coefficient between selection rate and detection rate.

	Detection rate	selection rate
Detection rate	1	0.01
selection rate	0.01	1

According to the above table, the correlation coefficient for the overall selection rate to detection rate shows that there is rare relationship between selection and detection ( $r = 0.01$ ); which means that a change in the overall selection rate is not likely to lead to a change in its detection rate. According to [3], the result of spearman rank correlation coefficient interprets as the following guidelines: Small  $r = .10$  to  $.29$  medium  $r = .30$  to  $.49$  large  $r = .50$  to  $1.0$ .

**Table 5.** Correlation coefficient between each selection rate and detection rate.

	manual selection	random selection	list base	rule base
detection	-0.81	0.94	0.25	-0.98

According to the above table the correlation analysis on each selection method, however, shows somewhat different pictures than correlating as whole. The manual selection has a stronger relationship between the selection and detection rates ( $r = -0.81$ ). The direction of correlation coefficient is negative indicate that an increase in the selection rate of the manual selection tends to lead to a decrease in its detection and increase costs on traders, increase goods release time.

Based on to the above table, the random selection has a stronger relationship between the selection and detection rate

( $r = 0.94$ ). The direction of the correlation coefficient is positive which indicates that, an increase in the selection rate of the random selection tends to lead to an increase in its detection. The list base selection has a weak relationship between the selection and detection rates ( $r = 0.25$ ). The direction of correlation coefficient is positive e indicates that an increase in the selection rate of the list base selection tends to lead to increase in its detection.

According to the above table rule base selection has the strongest coefficient correlation between selection and

detection rates (-0.98). The direction of correlation coefficient is negative indicate that an increase in the selection rate of the rule base selection tends to lead to a

decrease in its detection and increase costs on traders, increase goods release time.

**Table 6.** Correlation coefficient between each selection rate and additional payment rate.

	manual selection	random selection	list base	rule base
Additional payment	0.74	-0.97	-0.14	0.99

According to the above table, the manual selection has a stronger relationship between the selection and additional payment rates ( $r = 0.74$ ). The direction of correlation coefficient is positive indicate that an increase in the selection rate of the manual selection tends to lead to increase the collection of additional payment from fraud declaration.

Based on to the above table, the random selection has a stronger relationship between the selection and additional payment rate ( $r = -0.97$ ). The direction of the correlation coefficient is negative which indicates that, an increase in the selection rate of the random selection tends to lead to a decrease in its additional payment from fraud declaration. The list base selection has weak relationship between the selection and additional payment rates ( $r = -0.14$ ). The direction of correlation coefficient is negative indicates that an increase in the selection rate of the list base selection tends to lead to decrease in its additional payment from fraud declaration.

According to the above table rule base selection has the strongest coefficient correlation between selection and additional payment rates ( $r=0.99$ ). The direction of correlation coefficient is positive indicate that an increase in the selection rate of the rule base selection tends to lead to an increase in its additional payment from fraud declaration.

## 5. Conclusion

According to the finding of the study shows that all selectivity methods are significantly correlated to detection rate, in relation to this rule base selectivity method has the strongest correlation with detection rate while list base has weakest correlation with detection rate. Manual selection method is found to be the most efficient and effective method of selectivity in Ethiopian customs commission risk management process. The finding of study shows that list base selection is inefficient and ineffective comparing to the other method of selectivity.

## 6. Recommendation

Based on the findings discussed above, the researcher forwarded the following recommendations.

- 1) Accordingly the manual selection method is the most efficient and effective method of selectivity. Thus the customs compliance and risk management directorate has to continue the existing working process and procedure regarding on manual selection method. Increasing manual selection rate directly leads to decreases the rate of detection and increase costs on

traders, increase goods release time, there for customs risk management directorate should monitor closely and strengthened the current manual selection working process as it is.

- 2) The lion share of import selectivity of declaration is performed by rule base selection. Thus the compliance and risk management directorate has to work more to improve efficiency and effectiveness of rule base selection through automatic risk profile analysis of importers and goods and revising the current selectivity criteria.
- 3) The researcher found that random selection method is only applied on authorized economic operators and customs special privilege users. therefore, The compliance and risk management directorate and ECMS project management have to work together to increase the application of random selection in all import type through configuring and creating rules on ECMS system that can help to apply random selection in all imports. The researcher found that random selection method selection is only applied on authorized economic operators and customs special privilege users.
- 4) List base selection has the weakest correlation with detection as well as inefficient and ineffective method of selectivity among others. Thus the compliance and risk management directorate has to critically revise its policy and working procedure on list base risk selectivity process, it might be through removing some criteria or completely down decrease the selection rate of list base selection. The researcher wants even to recommend that this method of selection should be removed from selectivity process from Ethiopian customs risk management except for those who are legally entitled not to be examined, as (WCO, 2012) study also doesn't recognized such type selectivity method.

## Conflicts of Interest

I declare that there is no conflict of interest.

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