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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INTRODUCTION

❖ 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 (Harrison and Holloway, 2007).

❖ Ethiopian customs commission applied customs risk management philosophy to facilitate and control the import and export trade flow.

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❖ For Customs, the most prominent risks are non-compliant or illegitimate trade transactions undermining government revenue and dangerous goods threatening society.

❖ 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.

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❖ The four types of Ethiopian customs risk management selectivity are;

1. Rule- based selectivity

2. List based selectivity

3. Random selectivity

4. Manual selectivity system

❖ Therefore, analysing effectiveness of import trade risk selectivity system in detecting fraud is important.

Statement of the problem

❖ Modern customs practices and operations need to fully reflect the principles of risk management (World Bank, 2005).

❖ According to (WCO, 2012), Detection rates are a good indicator to evaluate the performance of the selectivity systems.

❖ Measuring the performance of each selectivity provides to target effectively those fraud maker importers.

❖ Previously the performance of risk selectivies were not measured in organized way and this way this study has done.

1.3 Research question

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?

Objectives of the research

- To examine how more strongly a selection method is associated with detection than another selection method.

- To determine which selection method is most effective in Ethiopian customs commission risk management selectivity system.
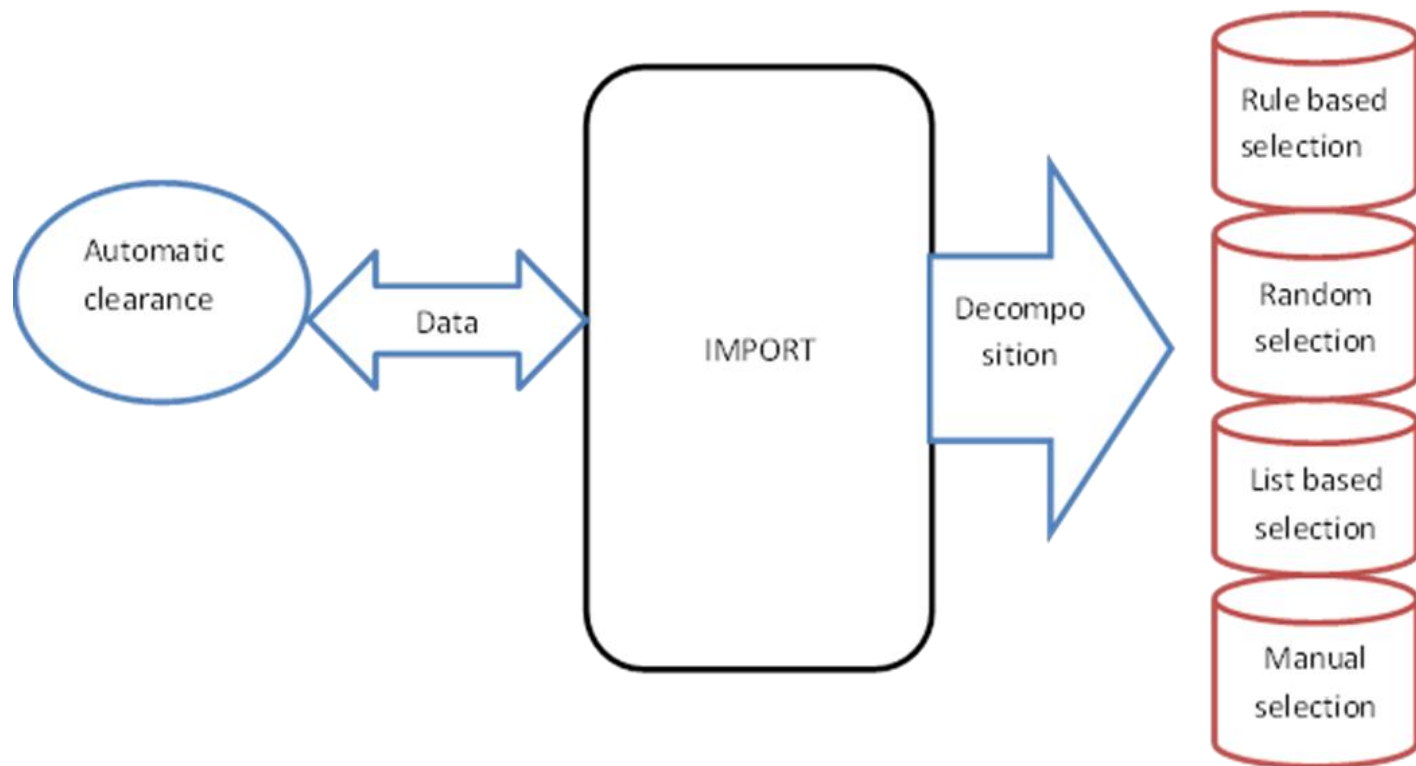
Customs frauds

- In Ethiopian customs commission the most frequently committed customs risk are the following.

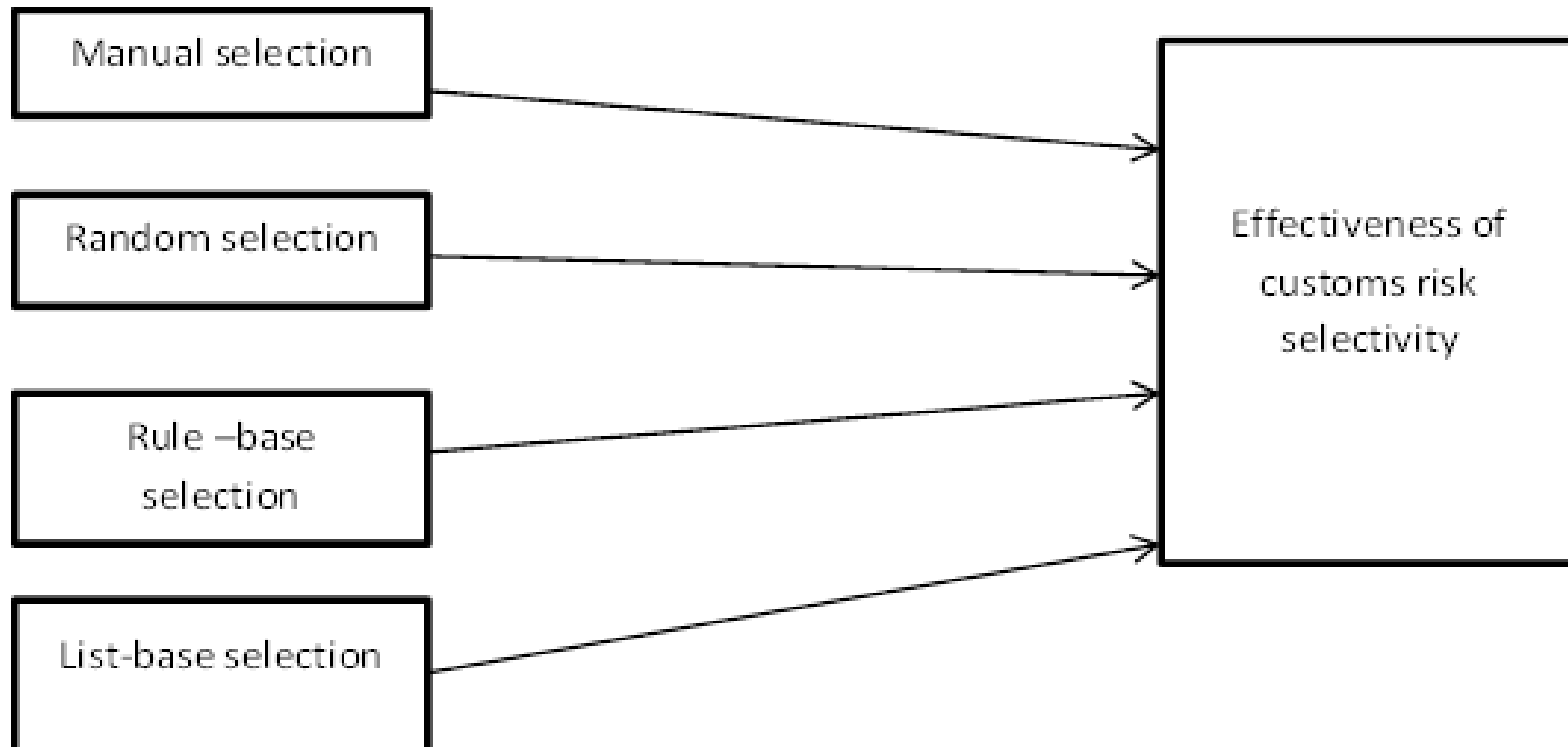| NO	TYPES OF CUSTOMS FRAUD COMMITTED	THE PROBABILITY OF OCCURRENCE IN %	THE CONSEQUENCE OF THE FRAUD IN %
1	Under valuation	76.44	76.33
2	Miss classification	4.64	11.75
3	Miss description	2.56	4.34
4	Country of origin difference	0.06	0.02
5	Customs procedure code error	0.61	0.4

Risk selectivity system in Ethiopian customs commission

Ethiopian customs import clearance risk selectivity process.

Conceptual frame work of the study

Efficiency of risk selectivity system

- According to (WCO,2012) study indication, selection efficiency which takes into account 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.

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selection rate	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

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❖ manual selection method is best efficient followed by Rule based selection thirdly random selection and lastly list based selection.

❖ Thus :MAN>RB>RAN>LB based on efficiency.

Effectiveness of selection method

- According to (WCO, 2012:12) 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.

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	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

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- accordingly, relative risks result, the manual selection is the most effective among the other methods (MNS > RBS > RDS>LBS).

Correlation coefficient of variables

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

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- Accordingly, rule base selectivity has strong correlation coefficient with detection rate(-0.98).

- While list bas selectivity has weak correlation coefficient with detection rate (0.25).

- Random selection has also strong correlation coefficient with detection rate (0.94).

- While manual selection has also strong correlation coefficient with detection rate (-0.81).

Conclusion

- All selectivity methods are significantly correlated to detection rate,

- Rule base selectivity method has the strongest correlation with detection rate .

- 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.

THANK YOU!!!