Implementation of Decision-Making Methods in Determining the Object of Customs and Excise Audit: Study on DGCE Regional Office of West Java for Quarter IV 2023

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ABSTRACT: This research aims to select the best customs and excise audit objects using several criteria that have been determined in this research by implementing the decision-making method in the determination process so that the process will be optimal. In this study, researchers used the VFT method to determine the criteria for determining customs and excise audit objects. Next, the researcher will select several company objects that are feasible to be audited from several nominations given using the SMART method. As a result, 10 criteria were found and 5 companies with the highest value ranking were selected as audit objects from 21 nominated companies which were expected to provide optimal quality audit results.

KEYWORDS: Customs and Excise Audit, Determination of Customs and Excise Audit Object, Simple Multi Attribute Rating Technique, Value Focused Thinking

INTRODUCTION

CUSTOMS (Customs Agency) in any country is an organization whose existence is essential for a country. Every good that enter and exit the territory of a country must go through a goods inspection process known as a customs clearance process carried out by customs institutions. At the international level, there is a World Customs Organization known as the WCO (World Customs Organization) that was found in 1950 and has mission providing trade convenience, protection to the public, and also collecting revenue for the country. Indonesia through the Directorate General of Customs and Excise (DGCE) participates actively and contributes to every WCO activity in maintaining international trade flows.

Customs clearance is the process of managing and completing customs administration documents, tax fees, and other related matters for goods imported or exported as fulfilment of obligations in the customs sector. To support efficiency and effectiveness in the customs clearance process, DGCE implements a self-assessment system that allows service users, both individuals and export and import companies, to gain confidence to calculate and notify their own customs obligations. The potential for inaccurate notification by the company can occur either intentionally or unintentionally. In terms of mitigating this potential, a customs audit is carried out. Based on data of Integrated Analysis System – Dashboard of Targeting Objek Analisis as of August 2023, currently, there are around 144,259 export-import companies and 78,384 of them are active companies carrying out routine export and import processes. On the other hand, the national customs audit team only numbers 95 teams. This causes the audit coverage ratio to be very small at around 0.60%. The ideal condition for an ACR is 5%. One way to mitigate the risk of low ACR is to optimize the quality of audit results which can be done by also optimizing the process of determining audit objects.
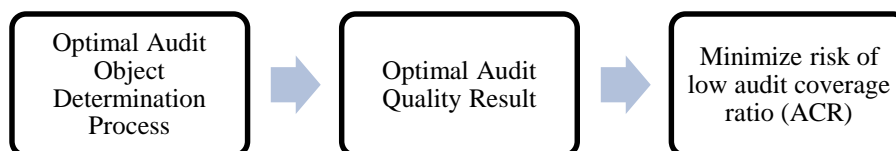

Figure 1. positive relationship between optimal audit objects determination process and minimizing the risk of low ACR

Current conditions, both the quality of audit results and also the process of determining audit objects are still not optimal. This is caused by several factors as a business issue which researchers illustrate in the figure below:

Figure 2. Big frame of business issues

The researcher will implement the decision-making method in the process of determining the customs audit object as a solution for business issues because by implementing the method, the determining process will be more optimal. In this study, the researcher will use VFT to define the criteria and SMART method to select the best alternative (customs audit object).

CONCEPTUAL FRAMEWORK

The conceptual framework will explain how the strategy will be implemented by the DGCE Regional Office of West Java (audit planning section) to improve the quality of customs and excise audits through optimizing the determination of audit objects.
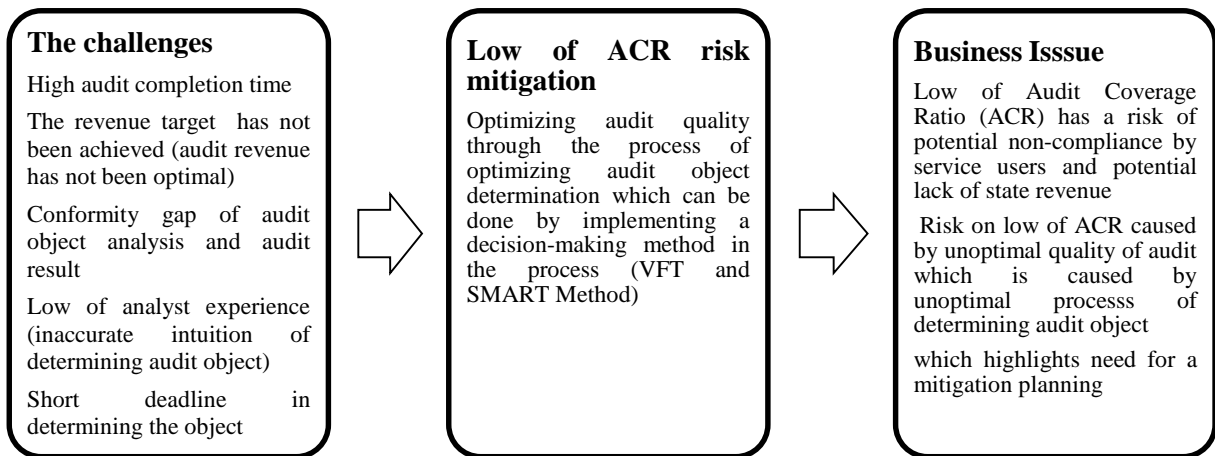

Figure 3. Conceptual Framework of Research

RESEARCH DESIGN

Figure 4 shows a research design used to determine the customs audit object.
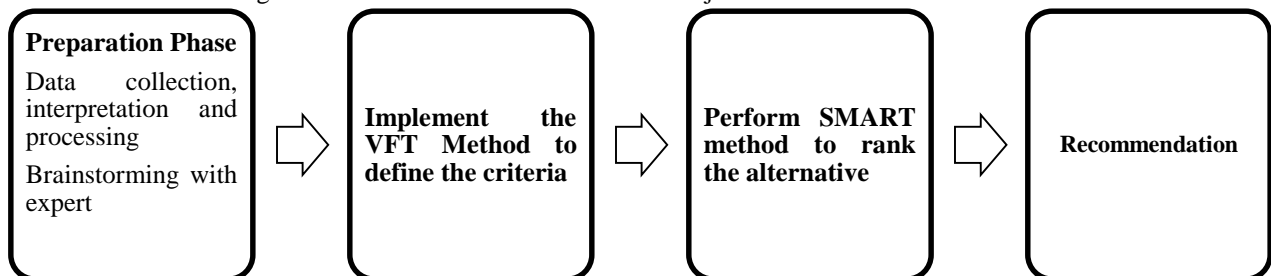

Figure 4. Research Design

A.   Data Collection Method

This study makes use of both types of data, both the use of primary data obtained from the process of interviewing experts and databases related to audit objects and various parameters taken from the DGCE database. This study is based on primary quantitative data processing techniques available in the organization.

Table 1. Data Table

No.	Data Type	Name of Data	Description
1	Primary Data	Interviews	conduct interviews with experts or practitioners in the office
2	Primary Data	DROA Data or Database Audit Object	is data that includes prospective audit objects in the form of company names, facilities owned, transaction volumes, audit history and so on
3	Primary Data	Audit Results Monitoring Data	is data that includes monitoring the number of audit bills, the value of audit results and the duration of the audit
4	Primary Data	LEHA 1 and 2 Data	is data that includes the quality index value of the audit results
5	Primary Data	LAOA Data	is data which is the result of analysis of audit objects by analysts

B.   Brainstorming with Expert

Collaboration with expert (Interview and Forum Group Discussion) to choose the best option among a number of alternate solutions generated during the brainstorming phase, criteria are needed that will determine the selection of alternatives. The process of selecting criteria and weighting criteria requires input from several experts who, with their capacity, can provide important input at this step. Collaboration is needed with these experts through an interview process and also a group discussion forum (FGD).

C.   Modelling Value-Focused Thinking (VFT)

There are several steps in VFT modeling which are called the VFT framework.
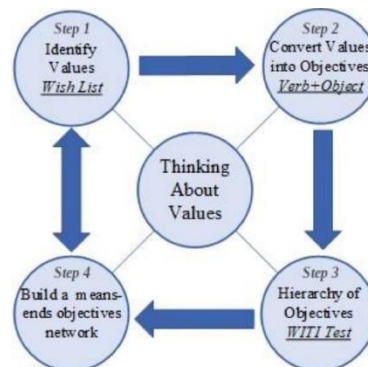
Figure 5. VFT Framework

The final goal is to build a means-ends objectives network to define criteria that are tailored to the research goals. In this research, the large structure of the means-ends objective network is obtained as the following figure:
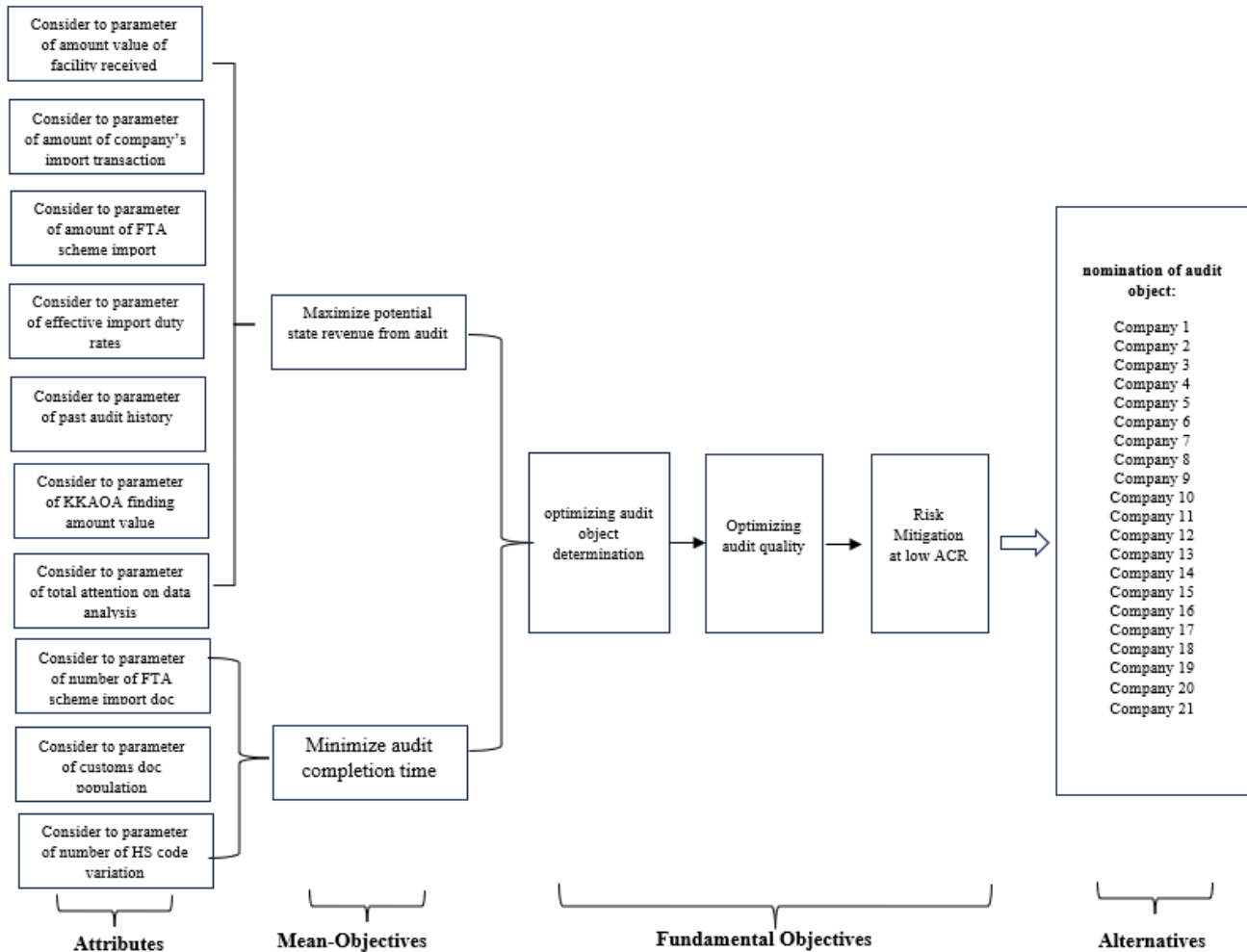
Figure 6. Hierarchy of Fundamental Objectives

Ultimately, the aim of this implementation is to obtain selected audit objects which are expected to provide optimal quality audit results. The quality of the audit results is described by researchers by the amount of state revenue generated from the audit and the length of time for completion. Therefore, the criteria set will refer to the quality parameters of audit results with the aim of maximizing the results of these parameters, namely maximizing potential state revenues (audit billing/fiscal findings) and Minimize audit completion time.

D. SMART Method

This research used SMART method to analysis process to determine the value and get the best ranking for each alternative that has been determined. At this stage, the author will carry out several analysis steps until the final ranking result is obtained for each alternative that has been analyzed. The following are several analysis steps that will be carried out.

Determining of alternative option

At this stage, the author will get a list of alternatives from the data that has been obtained

Pairing the alternatives and criteria

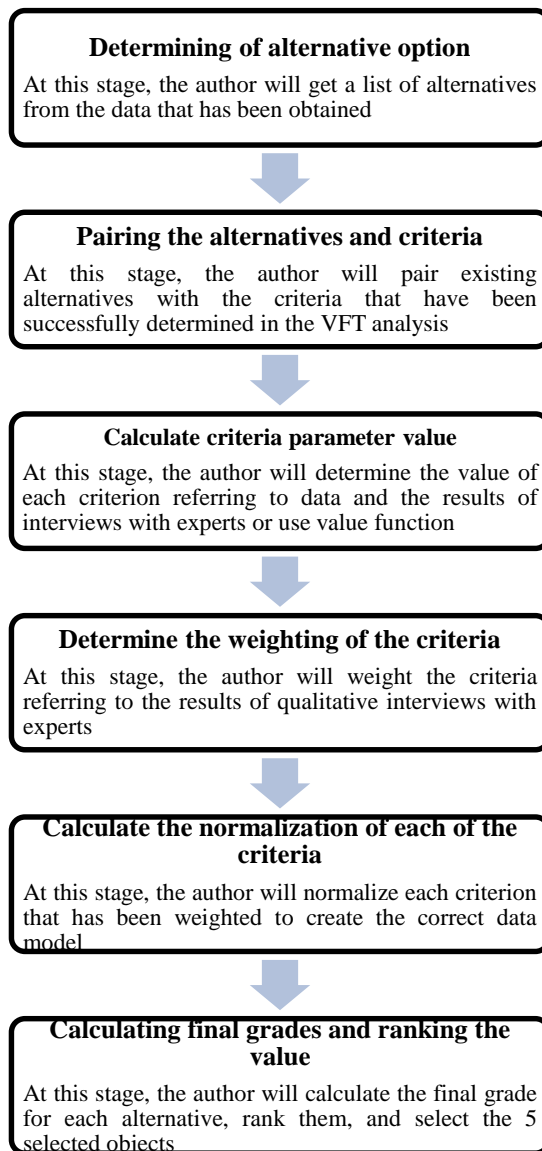At this stage, the author will pair existing alternatives with the criteria that have been successfully determined in the VFT analysis

Calculate criteria parameter value

At this stage, the author will determine the value of each criterion referring to data and the results of interviews with experts or use value function

Determine the weighting of the criteria

At this stage, the author will weight the criteria referring to the results of qualitative interviews with experts

Calculate the normalization of each of the criteria

At this stage, the author will normalize each criterion that has been weighted to create the correct data model

Calculating final grades and ranking the value

At this stage, the author will calculate the final grade for each alternative, rank them, and select the 5 selected objects

Figure 7. SMART method analysis steps

DISCUSSION AND RESULT

A. Determine the Alternative Option

Data on prospective audit objects (auditees) is taken based on actual company data at the audit directorate of the West Java regional customs office whose name is the prospective company.

Table 2. List of Alternatives

No.	Auditee Name	No.	Auditee Name	No.	Auditee Name	No.	Auditee Name
1	PT. A	7	PT. G	13	PT. M	19	PT. S
2	PT. B	8	PT. H	14	PT. N	20	PT. T
3	PT. C	9	PT. I	15	PT. O	21	PT. U
4	PT. D	10	PT. J	16	PT. P		
5	PT. E	11	PT. K	17	PT. Q		
6	PT. F	12	PT. L	18	PT. R		

B. Pairing The Alternative and Criteria

At this stage, alternative pairs will simply be displayed with previously determined criteria. This is intended to make it easier which alternatives have been given and the criteria that will influence them have previously been determined and also weighted. The following is a table of pairing results from existing alternatives and criteria.

Table 3. Alternatives and Criteria

No.	Auditee Name	Company facility type	Criteria									
			Number of HS code variation – C1	customs doc population – C2	Number of FTA document – C3	Amount value of facility received – C4 (In Million Rp)	Amount of company's import transaction – C5 (In Million Rp)	Amount of FTA scheme import – C6 (In Million Rp)	effective import duty rates – C7	past audit history – C8	KKAOA finding amount value – C9 (In Million Rp)	total attention on data analysis – C10
			Goal: Minimize audit completion time			Goal: Maximize potential state revenue from audit						
1	PT. A	Bonded Zone	1.366	15.384	233	123.260	17.427.422	9.322.399	3,40	V	5.323	4
2	PT. B	Non-Facility	456	3.134	8	-	3.956.294	286.004	20,45	V	5.158	3
3	PT. C	Non-Facility	162	512	48	-	1.940.635	1.521.264	1,23	V	594	3
4	PT. D	Bonded Zone	214	2.603	-	8.651	79.434	-	5,51	V	-	2
5	PT. E	Bonded Zone	435	6.103	-	71.630	585.053	-	6,13	V	-	1
6	PT. F	Non-Facility	426	3.990	170	-	21.143.295	17.735.970	13,21	V	1.892	4
7	PT. G	Non-Facility	59	184	22	-	1.786.591	1.768.354	0,78	-	995	6
8	PT. H	Non-Facility	244	1.691	14	-	3.637.173	314.959	8,15	V	2.767	3
9	PT. I	Non-Facility	589	2.572	91	-	2.246.298	1.811.054	3,16	V	5.685	4
10	PT. J	Non-Facility	23	212	6	-	446.292	376.206	0,82	-	457	3
11	PT. K	Non-Facility	243	900	9	-	393.409	242.520	3,24	V	2.520	5
12	PT. L	Non-Facility	139	1.638	211	-	4.478.100	4.175.245	0,39	V	242	4

13	PT. M	Non-Facility	267	115	-	-	3.323.996	-	0,05	-	98	-
14	PT. N	Non-Facility	19	106	26	-	937.517	937.271	0,82	-	-	2
15	PT. O	Non-Facility	268	538	2	-	489.736	73.210	5,06	V	189	2
16	PT. Q	KITE	243	7.983	344	86	3.117.787	831.158	0,96	V	70	5
17	PT. R	Temporary Import	46	43	5	15	2.153.963	10.262	0,09	V	295	2
18	PT. S	Non-Facility	10	837	62	-	1.541.224	1.478.644	0,02	-	58	3
19	PT. T	BKPM	96	510	5	51.904	2.055.237	96.101	1,05	V	5.208	2
20	PT. U	Bonded Zone	201	6.828	-	89.586	803.369	-	9,62	V	-	-
21	PT. V	Bonded Zone	351	7.032	-	190.976	1.756.303	-	9,14	V	-	1

C. Calculate Criteria Parameter Value

This study used 10 criteria as mentioned above. The first step to do is to measure how well the alternatives perform in each criteria using value function and/or direct rating method. Focus group discussions use a method called bisection and it is possible to divide them into 5 value points, namely the minimum (0), the 25th percentile, the 50th percentile, the 75th percentile and the 100th percentile. There are the results:
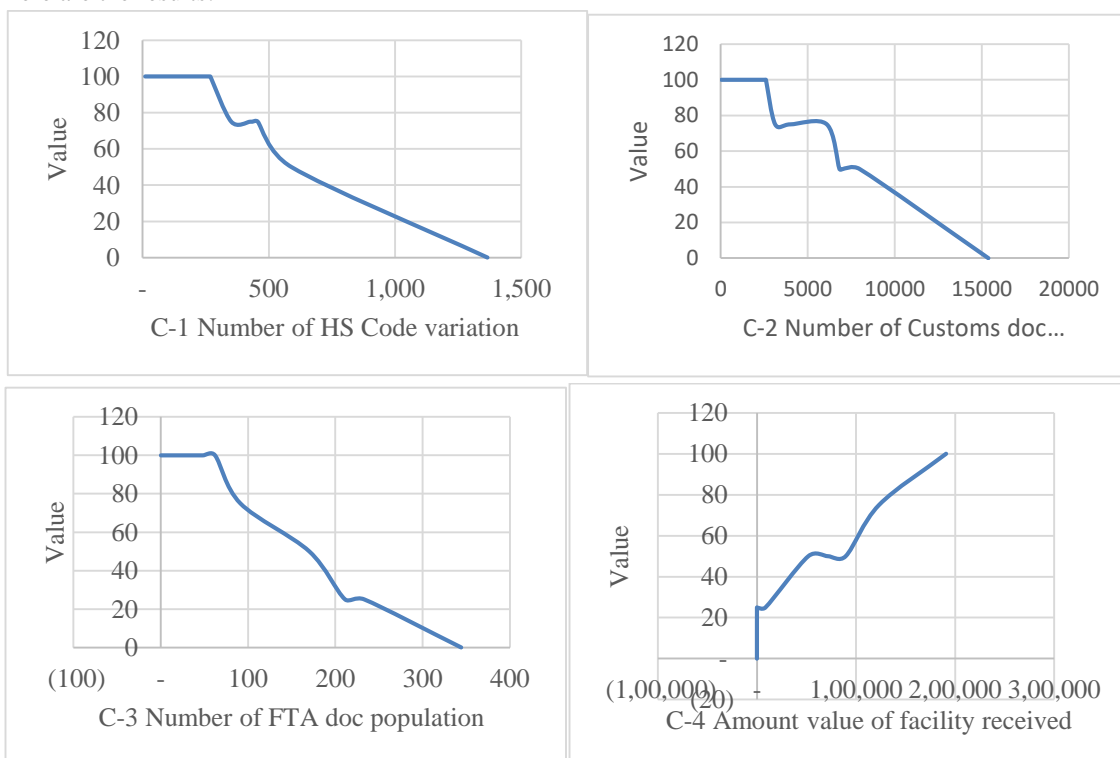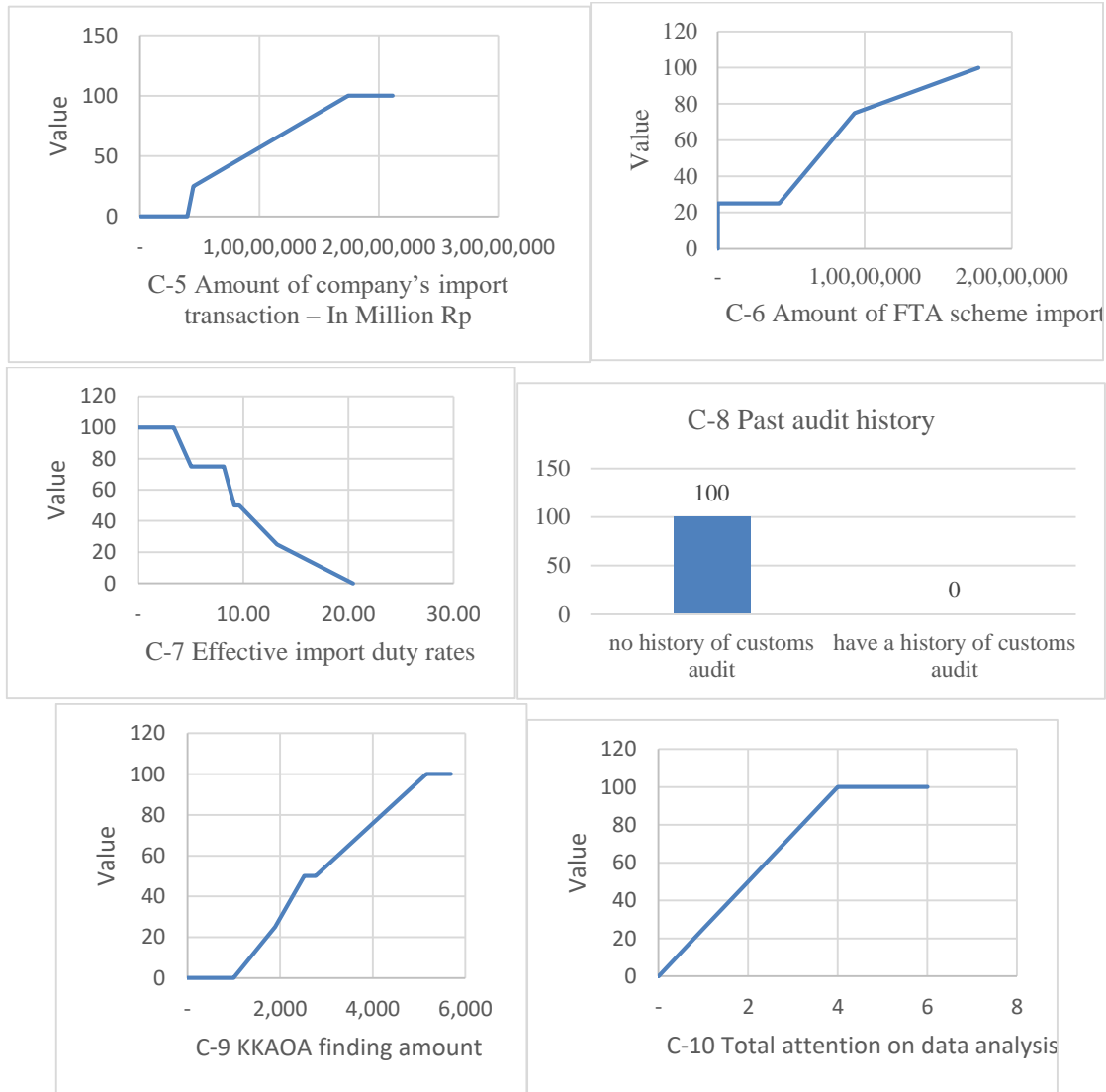
Figure 8. Value function of Criteria

Next summarize the results:

Table 4. Value of each attribute

No	Name	Company type	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
1	PT. A	Bonded Zone	0	0	25	75	100	75	100	100	100	100
2	PT. B	Non facilities	75	75	100	-	0	25	0	100	100	75
3	PT. C	Non facilities	100	100	100	-	0	25	100	100	25	75
4	PT. D	Bonded Zone	100	100	100	25	0	0	75	100	0	50

5	PT. E	Bonded Zone	75	75	100	50	0	0	75	100	0	25
6	PT. F	Non facilities	75	75	50	-	100	100	25	100	50	100
7	PT. G	Non facilities	100	100	100	-	0	25	100	0	25	100
8	PT. H	Non facilities	100	100	100	-	0	25	75	100	50	75
9	PT. I	Non facilities	50	100	75	-	0	25	100	100	100	100
10	PT. J	Non facilities	100	100	100	-	0	25	100	0	25	75
11	PT. K	Non facilities	100	100	100	-	0	25	100	100	50	100
12	PT. L	Non facilities	100	100	25	-	25	25	100	100	25	100
13	PT. M	Non facilities	100	100	100	-	0	0	100	0	25	0
14	PT. N	Non facilities	100	100	100	-	0	25	100	0	0	50
15	PT. O	Non facilities	100	100	100	-	0	25	75	100	25	50
16	PT. P	KITE	100	50	0	25	0	25	100	100	25	100
17	PT. Q	*Impor Sementara*	100	100	100	25	0	25	100	100	25	50
18	PT. R	Non facilities	100	100	100	-	0	25	100	0	25	75
19	PT. S	BKPM	100	100	100	50	0	25	100	100	100	50
20	PT. T	Bonded Zone	100	50	100	50	0	0	50	100	0	0
21	PT. U	Bonded Zone	75	50	100	100	0	0	50	100	0	25

D. *Determine the weighting of the criteria*

The researcher asked the group discussion member to rank the best to least preferred level of criteria and calculate the normalized weight. Forum Group Discussion using a scale of 1 to 100 that takes the idea of urgency into consideration, establish how the criteria are weighted for each predefined criterion. The result could see in the table below:

Table 5. Weight of criteria

No.	Criteria (C)	Name of Criteria	Weight (Wj)
1	C-5	amount of company's import transaction	100
2	C-4	amount value of facility received	90
3	C-6	amount of FTA scheme imports	80

4	C-8	past audit history	70
5	C-9	KKAOA finding amount value	60
6	C-10	total attention on data analysis	50
7	C-7	effective import duty rates	40
8	C-2	customs doc population	30
9	C-1	number of HS code variation	20
10	C-3	number of FTA document	10
Total			550

E.   Determine the Weighting of the Criteria

Using the formula $(Wj/\sum Wj)$. The result could see in the table below:

Table 6. Weight of the normalization criteria

No	Criteria	Weight (Wj)	Normalization (Wj / Sum Wj)
1	C-1	20	0,036
2	C-2	30	0,055
3	C-3	10	0,018
4	C-4	90	0,164
5	C-5	100	0,182
6	C-6	80	0,145
7	C-7	40	0,073
8	C-8	70	0,127
9	C-9	60	0,109
10	C-10	50	0,091

F.   Calculating Final Grades or Aggregate of Weighted Value and Ranking the Value

The value those has been obtained from the normalization of the raw data criteria should shifted by the weight of the normalized criterion value and then will get the final grades or score. the formula is criterion value or utility value x weight of normalization. The results are:

Table 7. Final Grade Resume and Ranking

No.	Alternative / Auditee	Type of Company	Total Grade
1.	PT. A	Bonded Zone	81,83
2.	PT. F	Non facilities	69,5
3.	PT. S	BKPM	58,18
4.	PT. I	Non facilities	52,28
5.	PT. L	Non facilities	49,55
6.	PT. K	Non facilities	49,08
7.	PT. P	KITE	45,9
8.	PT. Q	*Impor Sementara*	45,9
9.	PT. H	Non facilities	44,98
10.	PT. C	Non facilities	44,08
11.	PT. B	Non facilities	42,68
12.	PT. U	Bonded Zone	42,28

13.	PT. O	Non facilities	39,98
14	PT. D	Bonded Zone	37,73
15.	PT. E	Bonded Zone	37,28
16.	PT. G	Non facilities	33,65
17.	PT. T	Bonded Zone	32,7
18.	PT. J	Non facilities	31,38
19.	PT. R	Non facilities	31,38
20.	PT. N	Non facilities	26,38
21.	PT. M	Non facilities	20,93

G. Make a Decision and Perform Sensitivity Analysis

Sensitivity analysis is a method to observe the stability of solutions when the level of importance for particular attributes is changed, a gauge to measure the robustness of solutions, study of the effect of input perturbation toward the output (Novani, 2021b). The sensitivity analysis is made by changing the weight of the same criteria to become 0 (zero), then adding the value to another criteria.

Table 8. Value minimizing audit completion time = 0

No	Criteria	Weight (Wj)	Goal Value	Normalization (Wj / Sum Wj)
1	C-1	0	minimizing audit completion time	0
2	C-2	0	minimizing audit completion time	0
3	C-3	0	minimizing audit completion time	0
4	C-4	90	maximize potential state revenue from audit	0,184
5	C-5	100	maximize potential state revenue from audit	0,204
6	C-6	80	maximize potential state revenue from audit	0,163
7	C-7	40	maximize potential state revenue from audit	0,082
8	C-8	70	maximize potential state revenue from audit	0,143
9	C-9	60	maximize potential state revenue from audit	0,122
10	C-10	50	maximize potential state revenue from audit	0,102
		490		

Table 9. Value maximize potential state revenue from audit = 0

No	Criteria	Weight (Wj)	Goal Value	Normalization (Wj / Sum Wj)
1	C-1	20	minimizing audit completion time	0,333
2	C-2	30	minimizing audit completion time	0,500
3	C-3	10	minimizing audit completion time	0,166

4	C-4	0	maximize potential state revenue from audit	0
5	C-5	0	maximize potential state revenue from audit	0
6	C-6	0	maximize potential state revenue from audit	0
7	C-7	0	maximize potential state revenue from audit	0
8	C-8	0	maximize potential state revenue from audit	0
9	C-9	0	maximize potential state revenue from audit	0
10	C-10	0	maximize potential state revenue from audit	0
		60		

Next, display the comparison results in the form of a comparison graph:
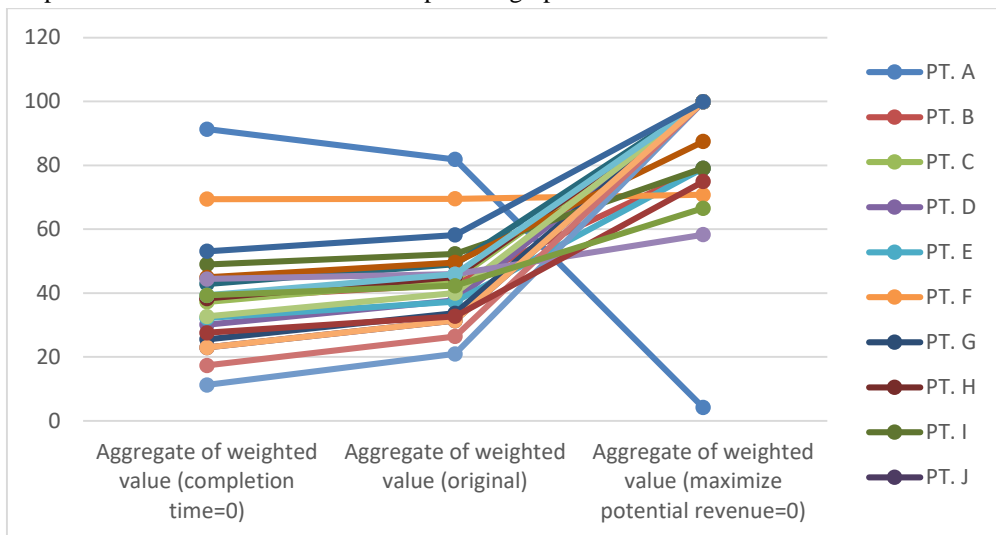
Figure 9. SMART Sensitivity Analysis

Based on the SMART Sensitivity Analysis graph, it can be concluded that 5 audit objects were selected as the most attractive (concluded in the table below). This is also with the consideration that the greater benefit obtained is the potential for state revenue from an optimal audit perspective. Of the 5 selected objects, it can also be seen that 4 of them (PT. F, I, L and S) have graphs that tend to be good and rising, although the object PT. A has a graph that tends to go down (because the goal of minimizing audit completion time is small), but the goal of maximizing potential state revenue is the most outstanding among other objects.

CONCLUSION

This study offers a brief procedure for applying VFT and SMART method to a multi-criteria decision-making process; the outcomes of the decision-making process based on the previously described example are merely a small example; and the SMART method can be expanded upon by integrating it with other techniques or by adding particular functionality. In this research, the function of the decision-making method is to determine criteria and select the best audit object by ranking each existing alternative.

Based on the interview process, group discussion forum with reference to the Value Focused Thinking (VFT) method, 10 criteria have been found that lead to the goal of maximizing the potential for state revenue from the audit side and minimizing the audit completion time as follows:

Table 10. Criteria of Research

No.	Criteria (C)	Name of Criteria	Goal
1	C-1	number of HS code variation	minimizing audit completion time
2	C-2	customs doc population	minimizing audit completion time
3	C-3	number of FTA document	minimizing audit completion time
4	C-4	amount value of facility received	maximize potential state revenue from audit
5	C-5	amount of company's import transaction	maximize potential state revenue from audit
6	C-6	amount of FTA scheme imports	maximize potential state revenue from audit
7	C-7	effective import duty rates	maximize potential state revenue from audit
8	C-8	past audit history	maximize potential state revenue from audit
9	C-9	KKAOA finding amount value	maximize potential state revenue from audit
10	C-10	total attention on data analysis	maximize potential state revenue from audit

Based on the SMART method and using criteria obtained through the VFT process, 5 audit objects were found to be selected as the most attractive (referring to final grade and sensitivity analysis) as follows:

Table 11. Five Selected audit objects for the 4th quarter of 2023

No.	Alternative / Auditee	Type of Company	Aggregate of weighted value (completion time=0)	Aggregate of weighted value (original)	Aggregate of weighted value (maximize potential revenue=0)
1	PT. A	Bonded Zone	91,32	81,83	4,15
2.	PT. F	Non facilities	69,39	69,5	70,775
3.	PT. I	Non facilities	48,97	52,28	79,1
4.	PT. L	Non facilities	44,89	49,55	87,45
5.	PT. S	BKPM	53,05	58,18	99,9

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