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Identify and evaluate tax morale indicators using DEMATEL-ANP

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Abstract

Generally, tax morale is defined as an umbrella capturing non-financial incentives for tax compliance and factors outside the standard and expected framework. Therefore, this paper prioritizes the factors affecting tax morale. This is mixed-method research. The mixed method is a procedure for collecting and analyzing quantitative and qualitative data in a study or a set of studies based on sequential and concurrent information. This paper first adopts the qualitative approach, followed by the quantitative approach. The Grounded theory approach is used to solve the research problem in the qualitative stage. This article adopted Strauss and Corbin's method and finally presented tax morale in six components, including causal, intervening, contextual, phenomenal, strategy and results of tax morale. This article prioritized the components identified from the Grounded Theory with two approaches, namely DEMATEL and ANP, and the sub-criteria were determined by 15 experts who had lived experience in taxation. The results showed that among the identified factors, the phenomenal category in the tax morale was the most significant, with a weight of 41%; followed by strategy and results, the causal category; and finally, the intervening and contextual categories are ranked next. The study results can be a guide for receiving taxes, and considering the identified components is a big step towards advancing tax goals and paving the path to achieving the taxation goals.

Keywords: tax, moral tax, dematel technique, ANP
2020 MSC: 91B64

1 Introduction

A modern and organized country advances and thrives when its citizens pay their taxes regardless of whether they are audited by the tax authorities. The term "tax morale" is often used as a correction for some sort of effect on tax compliance. Generally, tax morale is defined as an umbrella capturing non-financial incentives for tax compliance and factors outside the standard and expected framework. For example, people may have intrinsic motivations to pay taxes or feel guilty or ashamed about not complying. They may comply because of cross-incentives: the willingness to

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pay taxes on benefits that the government gives them or others, even if they do not pay taxes, so their financial returns will be higher. Individuals may be influenced by their peers' behavior, and also social recognition or ostracism by peers is possible. Cultural or social norms can affect the strength of these intrinsic motivations, reciprocal motivations, or sensitivity to peers. In our definition of tax morale, we also include deviation from the expected maximum desirable standard, such as loss aversion [10]. Usually, the question is whether paying taxes is a moral duty; and does it require tax morale. Given the amount of government waste and its total budget, citizens may think that their tax bill is unlikely to make a difference in the services the government provides. Even if they agree with how the government spends the money, they may conclude that there is no reason to participate. The most common argument on why taxes should be paid given by researchers is the tax morale, the idea that you should not take advantage of others. As philosophers like George Klosko have argued, people benefit from taxes paid by their fellow citizens.

2 Behavioral economics and the behavior of taxpayers

Tax compliance levels may be attributed to the individual's internal motivation to pay taxes. The behavioral economics literature has shown many cognitive and heuristic biases that affect decision-making uncertainty. Much of the literature is written by economists for economists. So far, the literature has focused on financial issues, for example, the 2007 financial crisis. However, the "push" towards broader areas of application is significant [25, 12, 2].This is the decision-making under the principles of uncertainty that affects the taxpayers' decision to avoid paying taxes or not. In the following, the types of behavioral biases that may help to better understand tax morale are examined. Thus, some of the most relevant and important behavioral models are introduced with a discussion of their implications for the tendency of individuals to avoid taxes (or not). Some of these theories require further discussion, based on relevance, as identified through previous literature or empirical evidence. Behavioral economics seeks to combine conventional cognitive and behavioral psychological theory with economics and finance to explain why people make irrational financial decisions. It can be classified into cognitive psychology (how people think), affective psychology (affective response related to appraisals), and a behavioral component (behavioral tendencies related to an attitude) [19]. Several biases from cognitive psychology and behavioral tendencies can affect decision-making. According to Hirshleifer [13] the four main categories of psychological factors are heuristic simplification, prospect theory, loss aversion, and tax evasion methods of prospect theory, which are presented in the continuation of prospect theory.

2.1 Perspective theory

Prospect theory is an alternative decision-making framework for maximizing expected utility. It is supported under uncertain conditions. Loss seems to affect human emotions more. This theory was popularized by the critical work of Kahneman and Tversky [16]. Olsen [17] points out that this theory emphasizes the cognitive limitations of human decision-makers. Based on the prospect theory hypothesis, Thaler and Johnson [27] found that when faced with time gambles, investors prefer to take risks rather than lose even if they win money on the initial gamble. Kahneman and Tversky [16] explained that this theory is based on the concept that people are loss averse because they are more concerned about losses than gains [15]. Investors' interpretation of this theory gives more importance to avoiding losses than making profits. Figure 1-3 shows the crucial foundation of the value function perspective theory by Kahneman and Tversky [16].

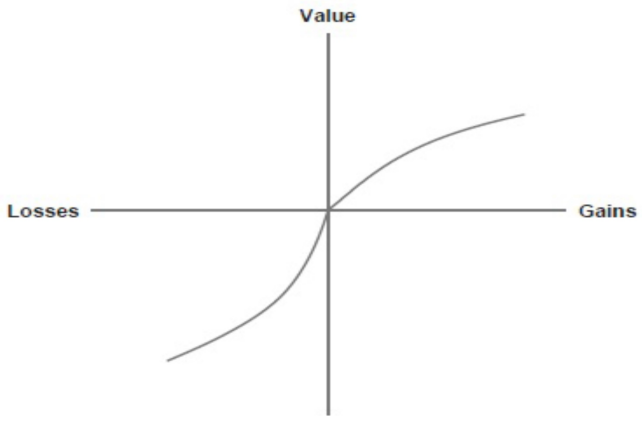

Figure 1: Kahneman and Tversky [16] prospect theory profitability curve

The above figure is a function of the hypothetical value of wealth based on a reference point that determines the subjective perception of people. The reference point the slope is upward (concave) for wealth levels above and the reference point the slope is downward (convex) for wealth levels below. Thus, a reference point is simply a person's point of comparison for any decision at any given point in time. For example, a person who expects to pay x amount of personal income tax may have reference point 'A'. The tax debt is more than originally expected. The person's reference point shifts from zero to the left of the reference point and feels a loss. However, the contrary is true that creates a feeling of happiness. The sense of loss is almost double. As the sentiment produced by the estimated profit using a perspective function is formulated algebraically as follows:

$$\pi(\rho) = \frac{\rho^{\gamma}}{\left[\rho^{\gamma} + (1-\rho)^{\gamma}\right]^{\gamma}} \tag{2.1}$$

Where (ρ) is the potential probability and γ is the value function with characteristics $\gamma(z) = z^{\alpha}$ For $z \geq 0, 0 < \alpha < 1$ (for gains) and $\gamma(z) = -\lambda(-z)^{\beta}$ for $z < 0, \lambda > 1, 0 < \beta < 1$ (for losses). Kahneman and Tversky's work shows that people's attitudes towards risk and its potential benefits differ from the risk of losing. Investors (decision makers) consider results as losses or gains from a subjective reference point in two ways: first, people are naturally risk-takers when faced with a certain profit, and second, people are inherently risk-takers when faced with a certain profit [16].To avoid a potential loss, a person prefers to gamble, which leads to an increased loss. More biases are related to this theory and include mental accounting, regret theory, and loss aversion. The Figure 2 shows the countries focused on the tax morale Study from 2016 to 2022. The graph is drawn with VOSviewer software.

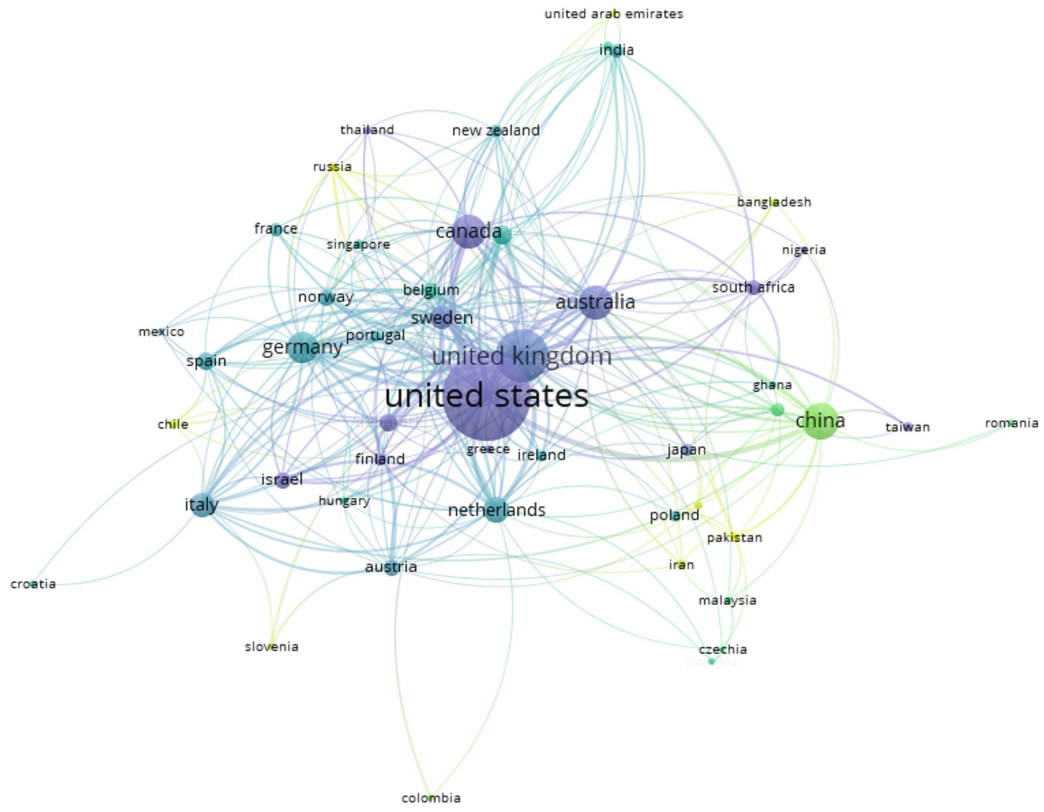

Figure 2: Countries focused on tax morale study (2016 to 2022)

3 Methodology

This article adopts a mixed method to investigate the factors affecting tax morale. The mixed method is a procedure for collecting and analyzing quantitative and qualitative data in a study or a set of studies based on sequential and concurrent information. In this article, the qualitative approach was first followed by the quantitative approach. The Grounded theory approach was used to solve the research problem in the qualitative stage, and finally, a model was

presented, including six components in causal, intervening, contextual, phenomenal, strategy, and results dimensions. This article adopted DEMATEL and ANP approaches to prioritize the components identified from the Grounded theory. In addition, the sub-criteria were determined by 15 experts who had lived experience in taxation. This article adopts the combination of ANP and DEMATEL methods to create and analyze the influential components of tax morale based on the Grounded theory approach. The combination of DEMATEL and ANP is not new; many works of literature have adopted a combination of both methods. DEMATEL is a method used to analyze causal relationships and can provide quantitative measures and consider related structural models. However, DEMATEL cannot determine the weight of individual criteria, in which case ANP would be useful. In cases where evaluation criteria are varied and complex, ANP can provide advantages in calculating criteria and relationships. Both methods support complex problems, but both DEMATEL and ANP can provide processing that is useful for identifying important features of recognized components [14]. The DEMATEL and ANP methods are used in the evaluation system to solve various problems, such as supplier performance evaluation, training material evaluation, information security evaluation, risk level identification, company performance evaluation, and network mapping [8, 21].

Normalization of the matrix of direct relationships is done by creating a network of effective components on tax morale using the DEMATEL process, by creating a matrix of direct relationships with criteria. The ANP process performs the initial steps of creating a pairwise comparison matrix between existing sub-criteria. The weight vector is calculated, the consistency is measured, and the consistency ratio value is compared following obtaining the pairwise comparison matrix. The next step is to create a supermatrix by inserting the vectors obtained from DEMATEL and matrix consistency. The results of this process obtain the weights of the evaluation criteria for the restricted supermatrix. The figure 3 presents the research process.

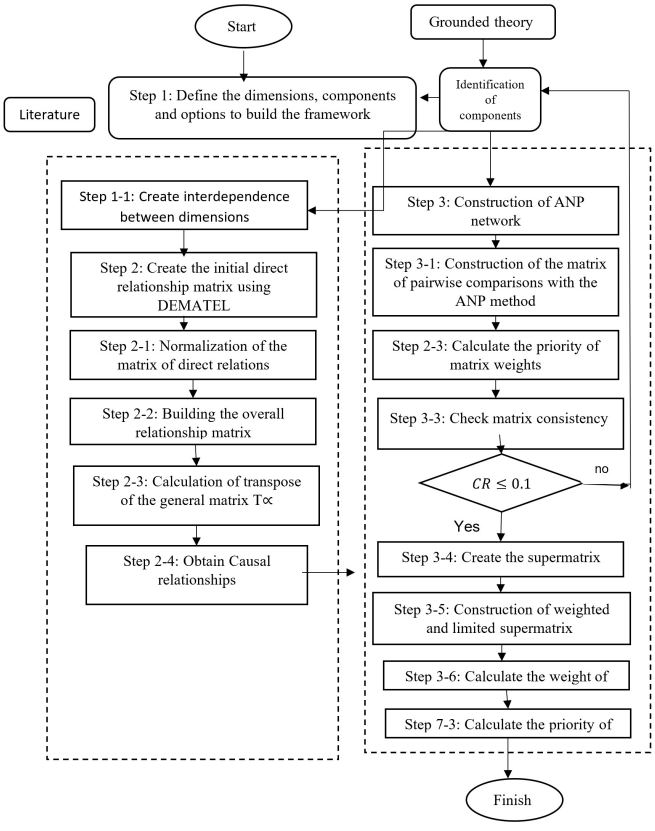

Figure 3: Research progress

3.1 DEMATEL method

In short, the procedural steps in the DEMATEL method are as follows:

1. The variables are described and the measurement scale is determined. The measurement scale value in this article uses an impact scale of $0.1, 2, 3$ or 4. The direct relation matrix $[a_{ij}]_{n\times n}$ is constructed. The value of

a_{ij} shows the effect of the criteria/cluster a_i on the criteria/cluster a_j and n respectively "no influence", "little influence", "moderate influence", "high influence" and "very high influence".

$$a_{ij} = \frac{1}{D} \sum_{k=1}^{D} X_{ij}^{K} \tag{3.1}$$

2. Normalized matrix of direct relations which can be calculated by the following relation:

$$\max(\max_{1 \le i \le n} \sum_{j}^{n} = 1_{ij}^{a}, \max_{1 \le i \le n} \sum_{j}^{n} = 1_{ij}^{a}) \tag{3.2}$$

$M = \frac{A}{\mu}$ is a normalized factor. The normalization of the direct relationship matrix is indicated by X, which is obtained by multiplying the matrix of direct relationships A and M in the following equation [21].

$$X = M \times A \tag{3.3}$$

3. After obtaining the results of the normalized matrix of direct relations, then the following relation can be used to obtain the total matrix [22]

$$T = M + M^2 + M^3 + \ldots + M^{\infty} \tag{3.4}$$

$$T = M(1 - M)^{-1} \tag{3.5}$$

Which in the above relation 1 is unit matrix.
The number of rows and columns can be obtained following the process of calculating the total matrix of relations T. The sum of the row values is denoted by D, which is explained in equation (3.6).

$$D = \left[\sum_{j}^{n} = t_{c_{ij}} \right]_{n \times 1} \quad , \ (j = 1, 2, \ldots n) \tag{3.6}$$

Column values are also denoted by R, which is explained in equation (3.7).

$$R = \left[\sum_{j}^{n} = t_{c_{ij}} \right]_{1 \times n} \quad , \ (j = 1, 2, \ldots n) \tag{3.7}$$

Causal-visual diagram is shown by calculating $(D + R)$ and $(D - R)$ values. The value of $(D + R)$ is placed on the x-axis, indicating the importance of the criteria. While the $(D - R)$ value is set on the y-axis and is called the relationship. The activity value of relationship factors in a causal group is determined. If the relationship value of the criterion is positive, it belongs to the cause group, and if it is not positive, then it belongs to the effect group.

4. Building the general matrix of relationships by equations (3.8)

$$T_D^a = \begin{bmatrix} t_{11}^D & \ldots & t_{1j}^D & \ldots & t_{1n}^D \\ \vdots & & \vdots & & \vdots \\ t_{i1}^D & \ldots & t_{ij}^D & \ldots & t_{in}^D \\ \vdots & & \vdots & & \vdots \\ t_{n1}^D & \ldots & t_{nj}^D & \ldots & t_{nn}^D \end{bmatrix} \tag{3.8}$$

T_D^a is a general relationship matrix for criteria, the degree of influence of criteria i on criteria j.

5. All row values are calculated in relation to the total matrix by equation (3.9):

$$T_D^a = \begin{bmatrix} t_{11}^D & \ldots & t_{1j}^D & \ldots & t_{1n}^D \\ \vdots & & \vdots & & \vdots \\ t_{i1}^D & \ldots & t_{ij}^D & \ldots & t_{in}^D \\ \vdots & & \vdots & & \vdots \\ t_{n1}^D & \ldots & t_{nj}^D & \ldots & t_{nn}^D \end{bmatrix} d_i = \sum_{j}^{n} t_{ij}^D \tag{3.9}$$

6. The normalization of the general relationship matrix is done by the following matrix:

$$T_D^a = \begin{bmatrix} \frac{t_{11}^D}{d_1} & \cdots & \frac{t_{1j}^D}{d_1} & \cdots & \frac{t_{1n}^D}{d_1} \\ \vdots & & \vdots & & \vdots \\ \frac{t_{i1}^D}{d_1} & \cdots & \frac{t_{ij}^D}{d_1} & \cdots & \frac{t_{in}^D}{d_1} \\ \vdots & & \vdots & & \vdots \\ \frac{t_{n1}^D}{d_1} & \cdots & \frac{t_{nj}^D}{d_1} & \cdots & \frac{t_{nn}^D}{d_1} \end{bmatrix} \tag{3.10}$$

7. Matrix transpose. The results of the transpose matrix will be the input supermatrix of the ANP method.

3.2 ANP method

Analytical Network Process (ANP) is an improvement of Analytical Hierarchy Process, both methods were developed by Dr. Saaty. The development of ANP is aimed at correcting the weaknesses of AHP in the form of the ability to match the interrelationships between criteria or alternatives. Therefore, ANP consists of control hierarchy, clusters, elements, mutual relations between elements, and mutual relations between clusters [35]. ANP is generally used to reduce the combination of the prioritization ratio of the individual ratio scale by reflecting the relative measurement of the influence of the elements related to the control criteria [21]. The calculation steps of the ANP method are as follows.

1. A network hierarchy of decisions is created between decision-making agents. This initial stage is the selection of desired goals or objectives, criteria that refer to alternative criteria and choices. Its purpose will be to identify the most important priorities in decision-making [21].
2. Creating a pairwise comparison matrix with the aim of determining the value of relative importance based on the questionnaire using the scale created by Saaty, i.e. 1, 2, 3, 4, 5, 6, 7, 8 and 9 [35]. The pairwise comparison matrix is shown in equation (3.11)

$$A = \begin{bmatrix} 1 & a_{12} & \cdots & a_{1n} \\ \frac{1}{a_{12}} & 1 & \cdots & a_{2n} \\ \vdots & \vdots & & \vdots \\ \frac{1}{a_{1n}} & \frac{1}{a_{2n}} & \cdots & 1 \end{bmatrix} = \begin{bmatrix} \frac{w_1}{w_1} & \frac{w_1}{w_2} & \cdots & \frac{w_1}{w_n} \\ \frac{w_2}{w_1} & \frac{w_2}{w_2} & \cdots & \frac{w_2}{w_n} \\ \vdots & \vdots & & \vdots \\ \frac{w_n}{w_1} & \frac{w_n}{w_2} & \cdots & \frac{w_n}{w_n} \end{bmatrix} \tag{3.11}$$

   (a) Calculate the weight of the elements. The value of the priority vector w, which is called the eigenvector, is calculated using equations (3.11).

$$AW = a_{\max} W \tag{3.12}$$

   A = Pairwise comparison matrix
   W = Eigenvector (priority weight of the matrix used in supermatrix preparation)
   $a_{\max}$ = Maximum eigenvalue

   (b) Calculation of consistency index using equations (3.12).

$$CI = \frac{a_{\max} - n}{n - 1} \tag{3.13}$$

   CI = Consistency index
   $a_{\max}$ = Maximum eigenvalue
   n = Number of components

   By comparing the consistency index and the randomness index (RI), a criterion for determining the consistency level of a matrix called consistency ratio (CR). Calculate the consistency ratio (CR) with equations (3.14).

$$CR = \frac{CI}{IR} \tag{3.14}$$

CR : Consistency ratio
CI : Consistency index
IR : Randomized consistency index

The randomness index is a matrix value determined by Dr. Saaty to measure the consistency of the results obtained. If the pairwise comparison matrix with a CR value of 0.10, the in consistency of the decision makers' opinions can be accepted, otherwise the evaluation of data decisions should be modified. If $CR = 0$, it is said to be consistent, and if $CR \leq 0.1$, it is said to be completely consistent [22].

4 Formation of super matrix

Super matrix is a matrix of priority vectors that results from pairwise comparisons between clusters, criteria and alternatives. The supermatrix includes three stages:

- The unweighted super matrix is obtained based on the comparison between clusters, criteria and alternatives by placing the eigenvectors in the matrix related to the entry of a matrix.
- The weighted super matrix is obtained by multiplying all the elements in the unweighted super matrix with the value of the matrix transpose T_D^a in the appropriate DEMATEL method.
- Restricted supermatrix, by multiplying the weighted supermatrix by the supermatrix until the values of all rows are obtained.

5 Research findings

In the quantitative analysis part of this article, the priority of the components obtained from the meta synthesis approach is evaluated with two methods, namely DEMATEL and ANP. Four networks are presented For causal, intervening, contextual, phenomenal, strategy and results. DEMATEL analyzes related to the causal dimension of tax morale as Table 1.

Table 1: Scores of pairwise comparisons of tax morale dimension

	Trust	Transparency	The principle of justice	Demographies	Expectations
Trust	0	3	3	2	1
Transparency	3	0	3	1	2
The principle of justice	2	3	0	2	2
Demographies	2	2	2	0	1
Expectations	2	2	3	2	0

Step 1: Formation of the y matrix
Step 2: Formation of the y-1 matrix
Step 3: Calculate the inverse of the y-1 matrix
Step 4: Formation of the product t matrix

$$T = Y(1 - Y)^{-1} \tag{5.1}$$

Step 5: Evaluate the sum of rows and columns
Step 6: Defining the threshold value (average of the components in the T matrix)

$$thershold = \alpha = 4.11 \tag{5.2}$$

and the table of Causal values is obtained as Table 2.

Drawing the causal diagram of tax morale

DEMATEL related to intervening and contextual dimension are reported in Table 3

Table 2: Scores of pairwise comparisons of tax morale dimension

	C	R	$C+R$	$C-R$	
Trust	21.31244	21.4898	42.80224	−0.17736	effect
Transparency	21.6451	23.64242	45.28752	−1.99732	effect
The principle of justice	21.30971	25.01706	46.32677	−3.70734	effect
Demographies	17.25731	17.04426	34.30158	0.213053	cause
Expectations	21.27947	15.6105	36.88997	5.668974	cause

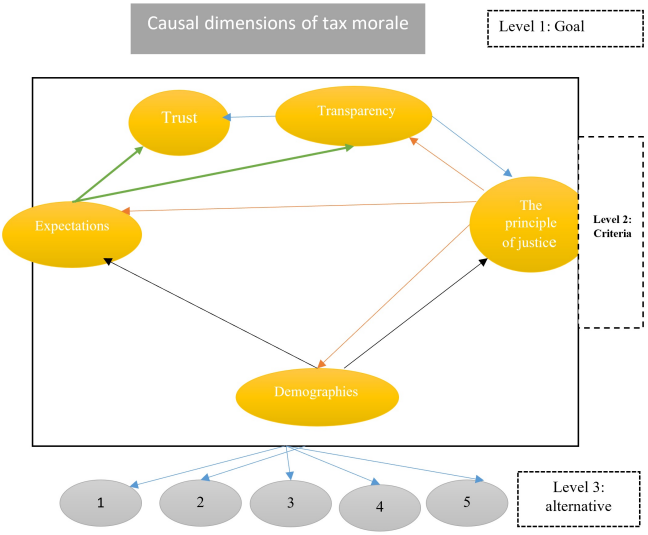

Figure 4: Causal diagram of tax morale

Table 3: Scores of pairwise comparisons of intervening and contextual dimension

	Absence of tax justice	Agility	Complexity of tax laws	Expansion of tax incentives	Notifications	Social situation
Absence of tax justice	2	3	3	3	2	2
Agility	0	3	3	3	2	0
Complexity of tax laws	2	0	3	3	3	2
Expansion of tax incentives	3	2	0	0	2	3
Notifications	2	3	2	0	0	2
Social situation	2	2	1	0	0	2

Table 4: Causal values of intervening and contextual dimension

	C	R	$C+R$	$C-R$	
Absence of tax justice	0.17511	0.658144	0.83326	−0.48303	effect
Agility	0.17511	0.65814	0.83326	-0.48303	effect
Complexity of tax laws	0.175116	0.65814	0.83326	−0.4830	effect
Expansion of tax incentives	0.175116	−0.34185	−0.16673	0.51693	cause
Notifications	0.175116	−0.34185	−0.1667	0.516969	cause
Social situation	0.175116	−0.341853	−0.16673	0.51696	cause

After performing the above 5 steps, the threshold value of this dimension is calculated as follows:

$$thershold = \alpha = 0.042028.$$

Drawing a causal diagram of intervening and contextual dimensions

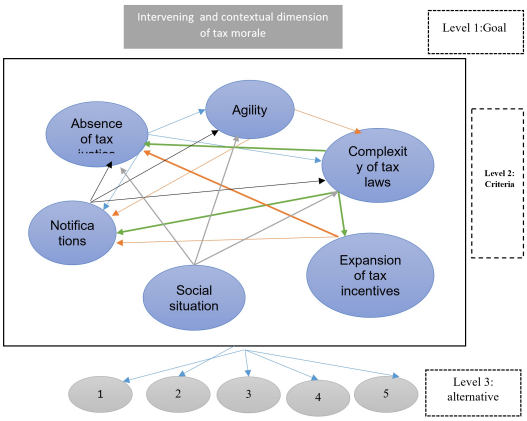

Figure 5: Causal diagram of the intervening and contextual dimension of tax morale

DEMATEL related to phenomenal dimension

Table 5: Phenomenal dimension pairwise comparison scores

	Tax morale	Cyberspace	Democracy	Advertising
Tax morale	0	2	3	2
Cyberspace	3	0	2	2
Democracy	3	3	0	2
Advertising	4	3	3	0

After performing the above 5 steps, the threshold value of this dimension is calculated as follows:

$$thershold = \alpha = 0.057571$$

The average of the components in the matrix T

Table 6: Phenomenal dimension pairwise comparison scores

c	r	c+r	c-r	
0.230284	0.309148	0.539432	−0.07886	effect
0.230284	0.309148	0.539432	−0.07886	effect
0.230284	−0.69085	−0.46057	0.921136	cause
0.230284	−0.68454	−0.45426	0.914826	cause

Draw causal diagram of phenomenal dimension

DEMATEL related to strategy and results dimensions of tax morale

After performing the above 5 steps, the threshold value of this dimension is calculated as follows:

$$thershold = \alpha = 0.038235$$

The average of the components in the matrix T

Drawing causal diagram of strategy and results of tax morale

The values of the criteria matrix are calculated by the Tad matrix to integrate the DEMATEL method in ANP. The normalized transpose of the Tad matrix is used to calculate the value of the supermatrix in ANP. The general model is as follows: which includes four main criteria (causal dimension, intervening and contextual dimension, phenomenal dimension, and strategy and results dimension of tax morale) and their components along with answer options are presented in the alternative section.

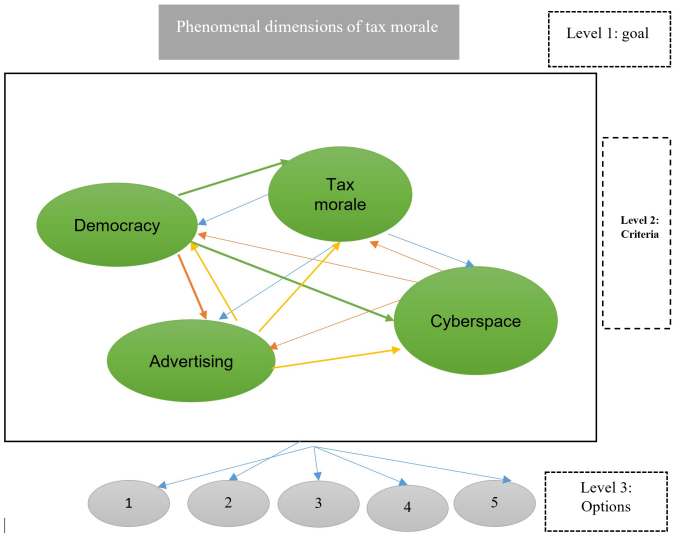

Figure 6: Phenomenal dimension causal diagram

Table 7: Scores of pairwise comparisons of strategy and results dimensions and tax morale

	Acculturation	Establishing tax justice	Improving economic indicators	Improving social indicators	Fight against money laundering
Acculturation	0	3	2	2	4
Establishing tax justice	2	0	3	3	4
Improving economic indicators	2	2	0	3	2
Improving social indicators	2	3	3	0	2
Fight against money laundering	2	2	2	2	0

Table 8: Causal values of the phenomenal dimension

c	r	c+r	c-r
0.1911	−0.779	−0.588	0.9705
0.1911	−0.102	0.2941	0.0882
0.1911	0.544	0.7352	−0.352
−0.1911	0.544	0.7352	−0.352
0.1911	0.544	0.7352	−0.352

Considering that the consistency rate is less than 0.1, then the opinion of experts is reliable and the ANP approach can be used to prioritize them. One of the pairwise comparisons performed in the software is shown in Figure 8.

The weight of the criteria

and the corresponding weight of the sub-criteria

The value of the consistency ratio in the criteria and sub-criteria matrices (CR) is less than 0.10, so the matrix is consistent. So that the opinions of experts are acceptable for processing with the ANP method. The final stage of ANP is the formation of the supermatrix. The unweighted supermatrix is calculated and due to the limitation, only the limited supermatrix is shown in Table 9.

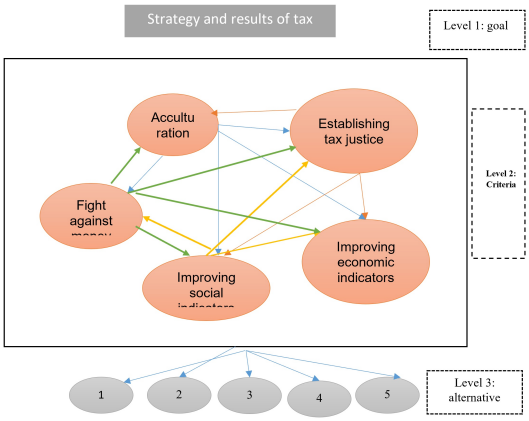

Figure 7: Causal diagram of strategy and results dimension

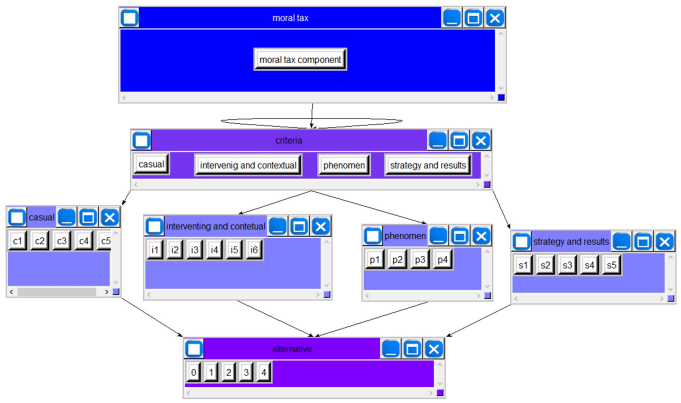

Figure 8: Network structure in Super Decision software

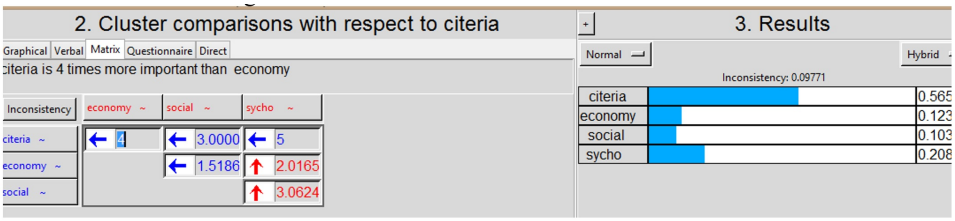

Figure 9: Image of weighting criteria components in Super Decision software

Table 9: Weight related to sub-criteria

Consistency rate = 0.05		
Component	Normalized	Ideal
Causal	0.23	0.56
Intervening and contextual	0.07	0.17
Phenomenal	0.41	1
Strategy and results	0.28	0.68

6 Discussion and conclusion

This article identified the network of factors affecting tax morale. In this article, the effective factors were classified in the form of four dimensions: the causal dimension, the intervening and contextual dimension, the phenomenal

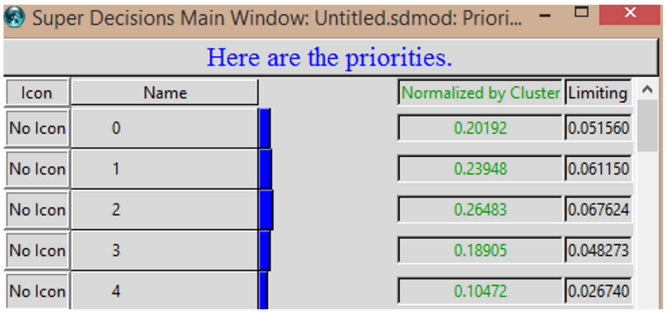

Figure 10: Alternatives priorities

Table 10: The weights of the restricted supermatrix criteria

	Normalized weight	Limited weight	Percentage of weights	Rank
0	0.20	0.051	20%	11
1	0.2	0.061	24%	8
2	0.26	0.067	26%	7
3	0.18	0.048	18%	12.5
4	0.10	0.026	10%	22
c1	0.32	0.041	32%	3.5
c2	0.16	0.020	16%	15
c3	0.22	0.027	22%	10
c4	0.13	0.017	14%	17
c5	0.14	0.018	15%	16
i1	0.23	0.719	23%	9
i2	0.32	1.0	32%	3.5
i3	0.18	0.55	18%	12.5
i4	0.11	0.36	12%	20
i5	0.10	0.33	11%	21
i6	0.03	0.09	3%	24
p1	0.42	1.0	42%	1
p2	0.27	0.63	27%	6
p3	0.13	0.31	13%	18
p4	0.17	0.40	17%	14
s1	0.38	1.0	38%	2
s2	0.281	0.72	28%	5
s3	0.127	0.32	13%	18.5
s4	0.127	0.32	13%	18.5

dimension, and the strategy and results dimension of tax morale. The DEMATEL method was used to identify causal relationships between indicators. Then ANP method was used for weighting and network drawing. The results showed that among the identified factors, the phenomenal category with a weight of 41% ranked as the most significant in the tax morale, followed by strategy and results, causal, and finally intervening and contextual dimensions. Based on the supermatrix ranks, the 1st and 2nd ranks of the criteria are related to tax morale and acculturation. Tax systems play a very sensitive and key role to resolve economic problems, and developing and generating wealth. Tax can be useful if it follows the three principles of efficiency, economy, and fairness, otherwise not only can it not achieve its goals, but it can also have adverse effects on the economy, which requires the institutionalization of tax culture. It includes tax compliance, tax morale, tax loyalty, and tax satisfaction in society, respectively. Tax culture can mean people's beliefs about taxes and the need to pay them [3].

Diego [26] showed that demographic characteristics play a big role in tax morale. For example, Kastlunger et al. [18] concluded that men are less tax compliant and are also more likely to act strategically when paying their taxes. Smith [23] investigated the relationship between the level of education and the perception of detection probability and stated that taxpayers with higher education show a lower threat perception of sanctions. Also, Kasipillai et al. [32] found statistical evidence indicating a positive relationship between education level and tax compliance. Kasipillai et al. showed the role of economic education in creating a positive attitude of taxpayers toward tax laws and authorities.

According to Hashimzade et al. [11] the main issue in tax morale is the possibility of hiding income in different jobs.

An income tax deducted directly from employees' wages prevents any opportunity for evasion, while the self-employed have the opportunity to underreport and hide their income. The new sociology of ethics and moral psychology shows that two types of moral attitudes, moral compulsions, and moral alignment, affect tax compliance [20]. Konstantinos Fotiadis & Prodromos Chatzoglou [5] showed that the trust of Greek citizens in tax resistance is a factor that mainly affects tax morale, and the trust of citizens in tax authorities and the institution of democracy is closely followed. Also, Alasfour et al. [1], Gerstenbluth et al. [7], Turgler [29], Williams and Krasniqi [33], Williams and Martinez [34] showed that direct democracy leads to higher tax morale. Feld and Frey [4], Frey and Torgler [6], F Martins, A. and Gomes [9], Sa et al. [24], Torgler [28], Torgler and Schneider [30], Torgler et al. [31], Williams and Krancicki. [33, 2] also showed that more widespread corruption is associated with lower tax morale. This study tried to determine the priority of the identified components with two approaches, DEMATEL and ANP. One of the limitations of this study is the lack of a comprehensive model of the tax morale pattern of Iran. For future research, the VIKOR method can be used instead of ANP in the third stage (establishment of ANP to rank projects) and compare the results with the results presented in this paper.

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