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Tax revenue optimization strategy in "shadow economics": Prospective approach

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ABSTRACT

Indonesia's low tax ratio is undetected or unrecorded community businesses or "shadow economics." This study aims to identify obstacles in optimizing tax revenue, analyze key factors, and compile potential policy paths for optimizing tax revenue in Indonesia with prospective analysis (MICMAC and MULTIPOL). The MICMAC analysis technique is used to analyze key factors in tax optimization, while the MULTIPOL analysis technique is used to compile potential policy paths based on scenarios. Identification of obstacles to optimizing tax revenue is reviewed based on three blocks, namely obstacles and challenges in the economic sector, obstacles and challenges coming from the tax authorities, and from taxpayers. The influencing variables of tax optimization are tax incentives, organizational structure and internal systems, integrity of tax officers, tax regulations and fiscal policies, and inflation. The results of the MULTIPOL analysis conducted in two scenarios, i.e., optimizing state tax focused on expanding the tax base, while local tax with strengthening tax extensification. In order to encourage optimization of the tax system, it can be obtained through a program to expand cooperation with related stakeholders/tax authorities, socialization and tax education to the public, and strengthening data analysis and systems for the validity of priority supervision targets.

Contribution/Originality: The prospective approach is suitable for use in research related to policy formulation because it considers things that may happen in the future. This study provides insight into tax policy research because it not only uses a retrospective approach but is also equipped with MICMAC and MULTIPOL as prospective analysis techniques.

1. INTRODUCTION

To realize good governance, the government must continue to work on increasing the accountability and transparency of financial management to achieve good governance. Regulations, institutions, financial information systems, and the enhancement of human resource quality are all governed by financial management (Sasongko & Parulian, 2010). As a foundation for robust long-term growth, economic growth is expected to be greater and of higher quality with a commitment to maintaining economic stability, supported by policy innovation.

Among ASEAN nations, Indonesia has the highest gross domestic product (GDP), yet it also has the lowest tax rate. By comparing the amount of tax received with GDP, the tax ratio itself serves as an indicator of how well a nation's citizens are paying their taxes. This ratio is a metric used to evaluate how effectively a nation's tax revenue is performing.

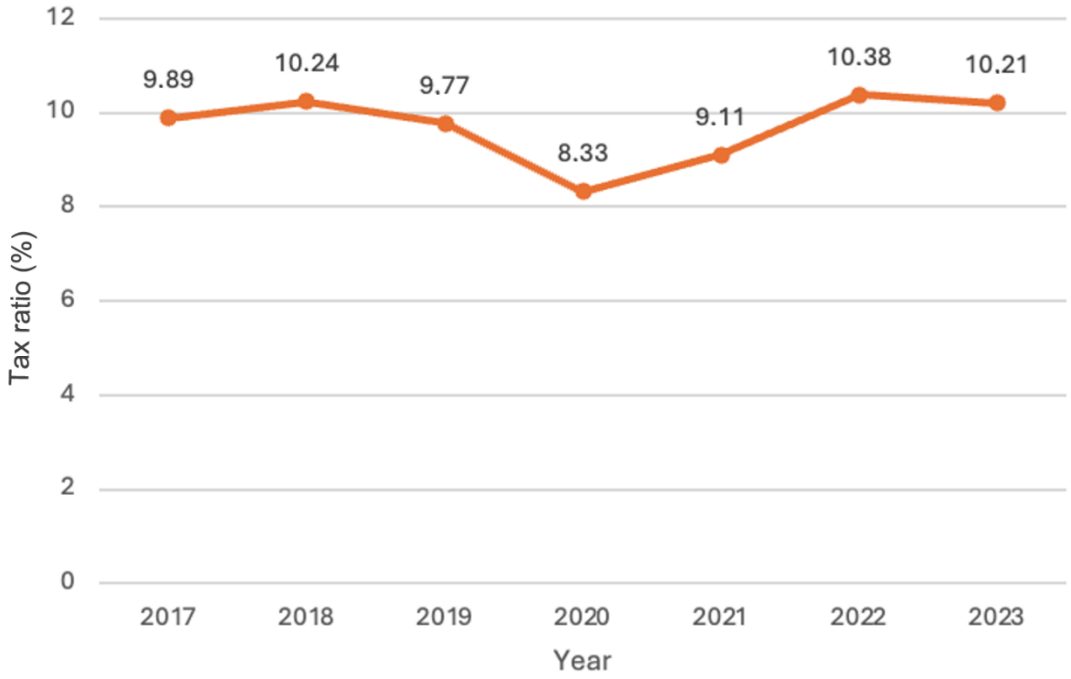

Figure 1. Trend of tax ratio of Indonesia, 2017-2023.
Source: Statistics of Indonesia & directorate general of taxes, 2024 (Processed).

Figure 1 illustrates that Indonesia's tax ratio has not experienced a significant increase during the period from 2017 to 2023. There are two ways to look at the tax ratio. The first is that it demonstrates the government's capacity to collect taxes. A nation with high tax revenues will be able to manage its government more effectively. Second, one way to think about the tax ratio is as a gauge of the tax burden. In addition to being seen as the total market value of goods and services produced by a country in one year, GDP can also be viewed as the total income of all individuals in an economy. Assuming ceteris paribus, the higher the tax ratio, the more of the community's income is allocated to tax revenue. According to the findings of an Asian Development Bank (2016) study, several factors contribute to Indonesia's low tax ratio, including unrecognized or unrecorded community efforts and so-called "economic disguise" that has not been or is not subject to taxes (in this case, the MSME sector). The achievement of financial governance through the strengthening of financial reform holistically requires the identification of tax revenue optimization and the efficacy of government spending.

The state budget and local budget contain formulations related to the direction of development and priority scales that will be implemented in programs and activities during a fiscal year. The determination of these priorities is taken within the framework of the interests of the implementation of government and increasing public welfare. Therefore, the budget must really be used for programs and activities that have benefits for the community. Optimal fiscal policy is needed to ensure that financial resources are used effectively and efficiently, supporting transparency, accountability, and public participation. Optimization of fiscal policy can be done through two approaches, namely from the revenue side and from the expenditure side (government spending). Government spending is able to increase economic growth even though operational spending is still greater than capital spending (Karlinda, Rheza, Damanik, Agustine, & Sianturi, 2015). Government spending is very important because of the effectiveness of government spending in driving economic development (Lahirushan & Gunasekara, 2015; Saad & Kalakech, 2009).

Optimizing revenue sources is essential to enhance the financial capacity of the center and regions. The receipt of regional funds from the center, used for regional government spending, will encourage economic growth and facilitate convergence between regions (Dekiawan, 2014). For this reason, the intensification and extensification of income subjects and objects are necessary. In the era of fiscal decentralization, regional financial management plays a crucial role in reducing the gap that exists between provinces and districts/cities.

Currently, there are more and more digital-based economic activities in Indonesia. Digital trading practices, on the one hand, have a positive impact on economic efficiency, but also cause an increase in the shadow economy. The current taxation system has not been able to fully capture these economic activities, so there is a risk of losing the tax base, especially VAT and Income Tax from digital economic actors. Therefore, the taxation system must also be adjusted to capture these economic activities.

Fiscal macro policies continue to be directed to respond to economic dynamics, face challenges, take advantage of opportunities, and support the achievement of development targets optimally. Fiscal management in the medium term is always encouraged to be effective in stimulating the economy and realizing an increase in welfare while maintaining fiscal sustainability in the medium to long term.

The results of the bibliometric analysis show that previous studies have not analyzed the interaction of financial constraints with the relationship between tax risk and tax compliance, including globalization risk in prospective tax studies (Boateng, Omane-Antwi, & Ndori Queku, 2022). This study aims to identify obstacles to optimizing tax revenue, analyze key factors determining tax revenue, and develop potential policy paths for optimizing tax revenue in Indonesia. In order for the results of this study to be adopted in the future, the approach used is a prospective approach.

2. LITERATURE REVIEW

Fiscal policy is one of the government's economic policies to manage or direct the economy in a positive direction (Alesina & Ardagna, 2010). The state budget is a fiscal policy instrument in the context of development that presents government revenue and spending. Taxes are a component of revenue and a fiscal policy instrument, which is also the main source of state and regional revenue (Yoga & Dartini, 2021). Moreover, in a country with a decentralized system, which is accompanied by fiscal decentralization, the tax issue is not only at the central government level but also at the local government (local tax) (Bellofatto & Besfamille, 2021; Fajri, Pratama, & Kharisudin, 2023).

Each country has a different tax policy and is adjusted to the conditions and characteristics of each country or region (Bird & Zolt, 2008; OECD, 2022). The success of a country or region's tax achievements is often measured by its effectiveness, namely the comparison between tax targets and achievements (Trisnawati & Nuryanah, 2022). However, this method is considered very conventional (Caiumi, 2011; Garg, Mittal, & Garg, 2024), especially since tax targets often do not represent actual tax potential. Tax potential or tax capacity is the maximum amount of tax revenue a country or region could reasonably raise at a given point in time, conditional on its prevailing characteristics (Khwaja & Iyer, 2014; Langford & Ohlenburg, 2015). Another technique for measuring the success of tax revenue achievements is by analyzing the tax ratio. the tax ratio is the ratio between Gross Domestic Product (GDP) and tax revenue (Purnomolastu, 2021). However, the results of the analysis of Volkerink and de Haan (2000) stated that most tax ratios reported in the literature suffer from a number of flaws, and highlight measurement problems that are much broader than discussed in the literature. So, the use of various quantitative analysis techniques in analyzing taxes needs to be complemented with qualitative elements. This research uses a mixed-methods approach in analyzing tax revenue optimization strategies.

3. METHODS

The prospective approach is a research method that is oriented towards predicting the subject's future behavior. In the prospective design model, we integrate the strengths of historical and contextual research to connect the past

to the present (Galdon, Hall, & Ferrarello, 2021). This approach uses information obtained during the research, rather than relying on historical data as in the retrospective approach.

Data for input in MICMAC (Matrix of Cross Impact Multiplications Applied to a Classification) and MULTIPOL (Multi-Policy) analysis uses a matrix filled based on the results of a questionnaire distributed to 200 corporate taxpayers, 13 central tax authorities, and 31 tax authorities from local governments throughout Indonesia. The sampling approach is based on a regional strategy and has ensured the representation of each region and sector.

3.1. MICMAC Analysis Technique

MICMAC or Matrix of Cross Impact Multiplications Applied to a Classification, introduced by Godet (1994) as part of the "strategic foresight" which focuses on development scenario analyses, including sustainable development (Fauzi, 2019). The principal MICMAC technique is helpful for: (1) identifying the main variables that are influential (influence) and dependent (influenced) that are essential to a system; (2) mapping the relationships between variables and the relevance of these variables in explaining a system; (3) revealing the causal chain of a system (Ludovico de Almeida & Caldas de Moraes, 2013).

The variables in MICMAC are grouped into four quadrants based on the dependency and influence as in Figure 2.

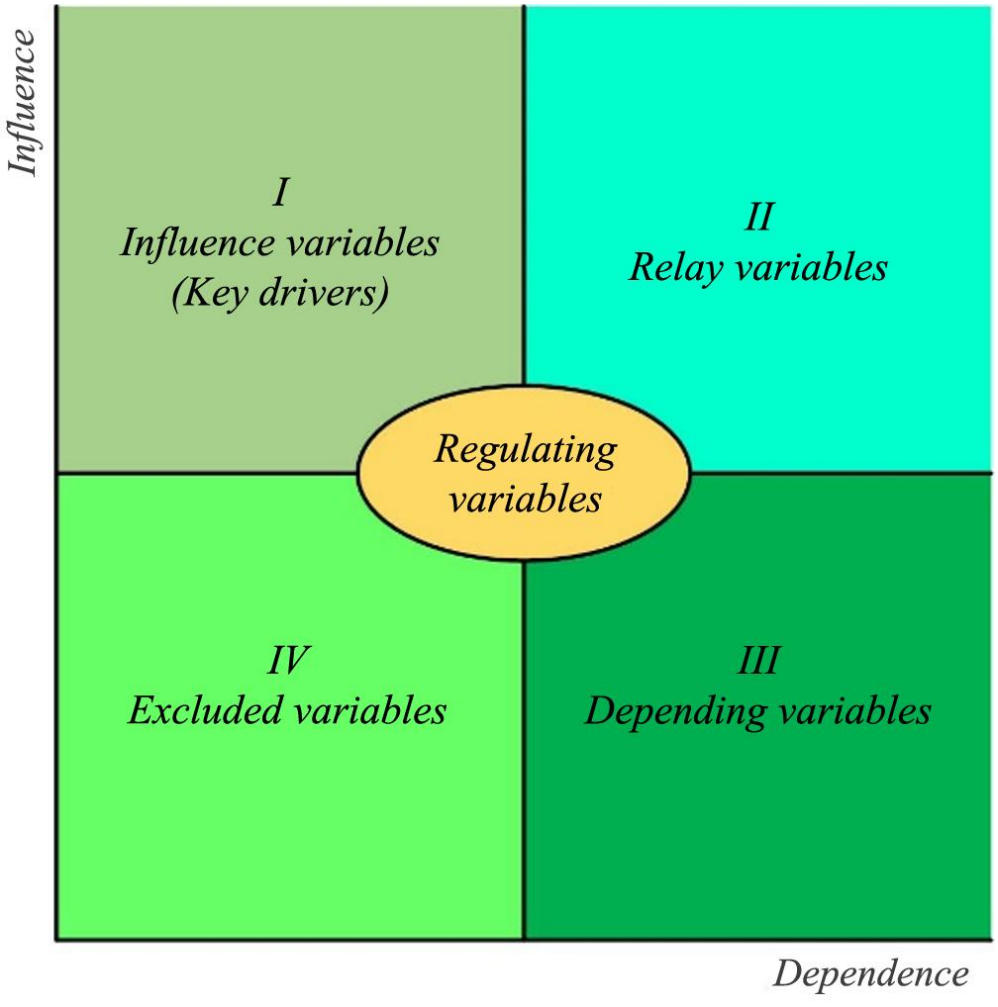

Figure 2. Variable mapping in MICMAC analysis.

Source: Fauzi (2019).

Quadrant I shows variables that have a high influence and low dependency, so it is also called key drivers. Quadrant II contains variables with high influence and dependence. Furthermore, quadrant III includes variables with high dependence, but their influence is weak. Quadrant IV tends to have a weak impact on the system because it

consists of variables with low influence and dependence (Fauzi, 2019). In addition, in the middle, there are regulating variables which tend to be easier to manage (Hu, Chiu, & Yen, 2009).

3.2. MULTIPOL Analysis Technique

MULTIPOL or Multi Policy is one of the prospective analysis techniques, "MULTI-criteria" and "POLicy" with an integrated participatory approach. The three main elements in the MULTIPOL analysis are scenario, policy (policy direction), and actions (Fauzi, 2019). Scenarios are structured developments that can be carried out in the future, where goals can be achieved. Policy, namely the strategy needed to support the scenario. Program activities/actions, also known as policy measures or ways to achieve goals, are potential interventions aimed at implementing policies.

Potential policy pathways that can be structured based on the three main elements through MULTIPOL analysis, as shown in Figure 3.

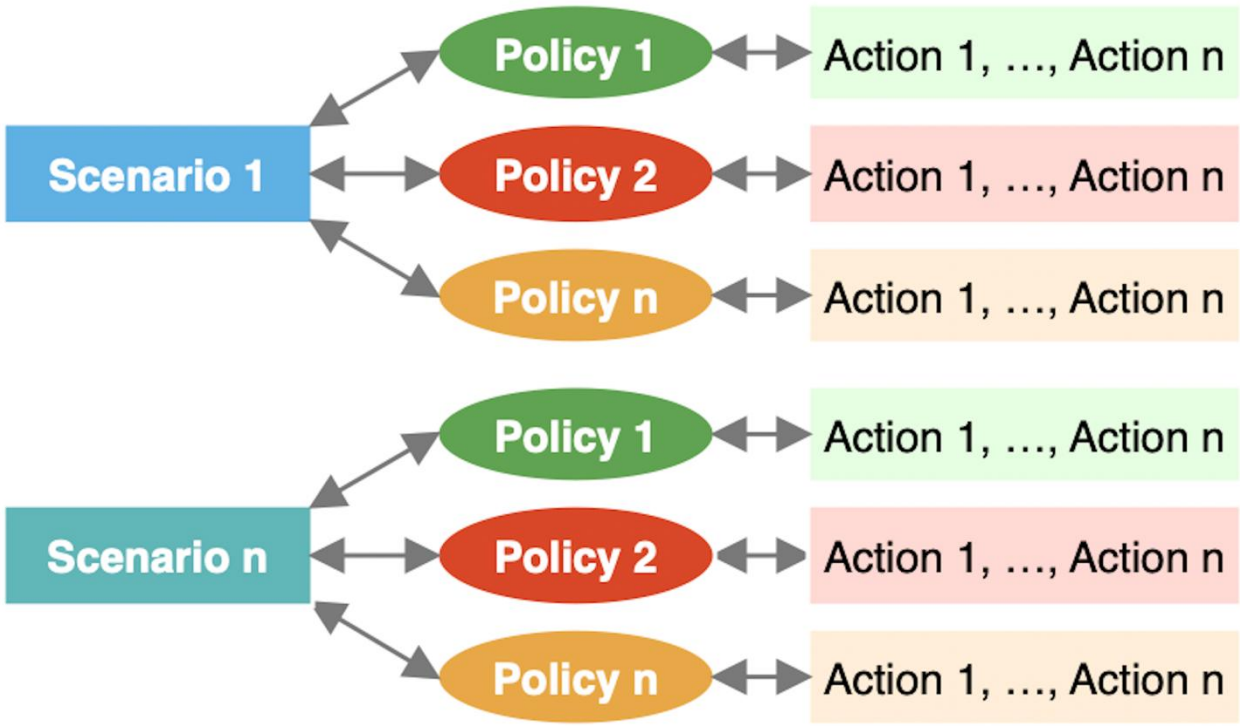

Figure 3. Potential policy path (Policy hierarchy).

Source: Fauzi (2019).

Next, we can explain the steps in the MULTIPOL analysis, which consists of five stages. The first and second stages/blocks are determining scenarios, actions, policies, criteria, and weights, where this stage uses a participatory approach. MULTIPOL uses different weights for the three main elements. This is what distinguishes MULTIPOL from other multi-criteria approaches. The next stage (The third to the fifth block) is the MULTIPOL device block, where the software will determine the hierarchy of Actions.

4. RESULTS AND DISCUSSION

4.1. Obstacles to Optimizing Tax Revenue

In realizing the optimization of tax revenue, there are various obstacles that must be overcome. Before formulating a strategy or policy for optimizing tax revenue, it is necessary to identify the obstacles in optimizing tax revenue in Indonesia, both for central and regional taxes. Moreover, optimizing regional tax revenue has a dual

impact; in addition to supporting the budget and development at the local level, increasing regional fiscal capacity also contributes to the overall national budget.

The identification of obstacles to optimizing tax revenue is reviewed based on three blocks, namely obstacles and challenges in the economic sector, obstacles and challenges arising from the tax authorities, and those from taxpayers.

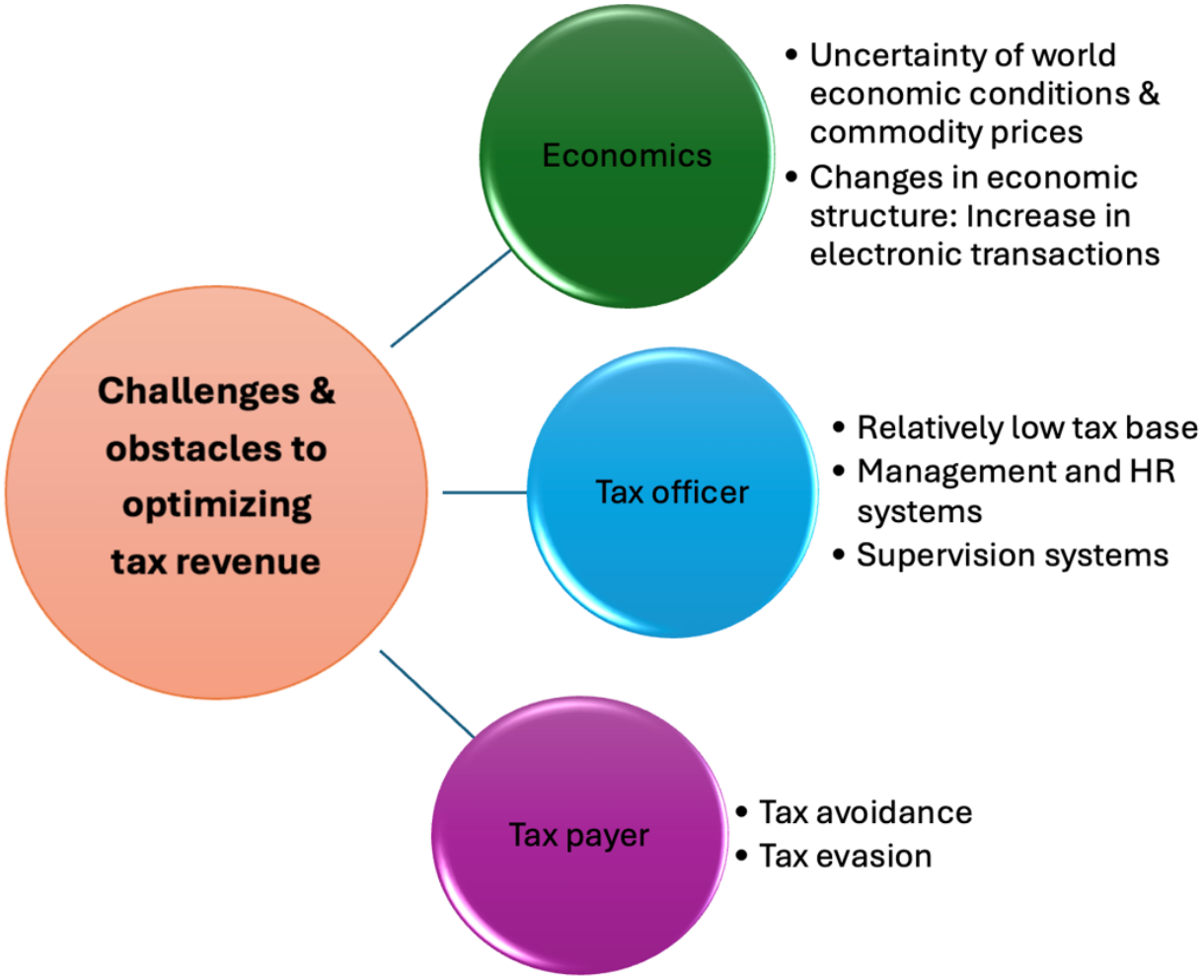

Figure 4. Mapping challenges and obstacles in optimizing tax revenue.

As the mapping presented in Figure 4 shows, economic conditions are also one of the main challenges. More specifically, the challenges of the economic block include the uncertainty of economic conditions and world commodity prices, especially those that impact tax revenues, particularly Corporate Income Tax. The main focus that needs to be monitored is the price fluctuations of sectors that are very sensitive to commodity prices, such as the mining and processing industries, as well as sectors that are not directly affected by commodity prices.

Changes in the economic structure, including economic activities in the digital era, provide opportunities as well as challenges for tax revenue, especially related to electronic transactions. Electronic commerce, or e-commerce, is growing rapidly and presents challenges in tax collection. Online transactions are often difficult to track, and businesses that operate digitally can take advantage of differences in tax regulations between countries to avoid tax obligations.

In theory, there are two policy options to optimize tax revenue, namely expanding the tax base or increasing tax rates. However, the second option certainly cannot be the government's choice amidst various post-pandemic tax breaks. Therefore, the challenge of expanding the tax base is an absolute consequence that must be carried out. In addition to the challenges of the tax base, the tax authorities also face challenges in carrying out supervision as well

as management and human resources. With the opportunity to utilize technological advances for tax avoidance, the tax authorities are required to be able to carry out more effective preventive and supervisory efforts.

Another challenge related to the optimization of tax revenue is classical, namely the low level of taxpayer compliance, which is reflected in the existence of tax avoidance and tax evasion. Tax avoidance and tax evasion are tax management activities carried out by taxpayers. Tax avoidance is an activity carried out by taxpayers to reduce the tax burden by exploiting loopholes in tax provisions. Because it is carried out by exploiting loopholes in regulations, tax avoidance schemes are usually still considered legal but tend to be in the gray zone. Therefore, this tax avoidance activity can cause disputes between taxpayers and the tax authorities. An example of a tax avoidance scheme is transfer pricing or exploiting a tax haven country. Unlike tax avoidance, tax evasion is an effort to reduce the tax burden carried out in a way that violates the provisions of tax regulations. Tax evasion can be classified as an illegal activity because it is contrary to the provisions of applicable laws and regulations. Some very aggressive tax evasion activities can even be classified as criminal acts. Examples of tax evasion activities include manipulating financial reports, falsifying documents, committing fraud, and so on. Through the previous explanation, it can be concluded that tax avoidance and tax evasion are activities to reduce the tax burden, but all three have different approaches in their implementation.

4.2. Factors Related to Tax Revenue Optimization (MICMAC Analysis)

4.2.1. Results Of Identification of Factors Related to Optimizing Tax Revenue

Based on the results of data collection and literature review, a recapitulation of the main factors related to the optimization of tax revenues, both central and regional taxes, can be compiled based on the views of taxpayers. In general, these factors can be categorized into internal/company factors, taxation-related factors (including services), and external factors (environment).

The results of this identification are input into the MICMAC analysis to map each tax optimization factor, especially from the taxpayer's point of view.

Table 1. Factors related to optimizing tax revenue.

No	Factor	Code	Description	Reference
1.	Understanding and knowledge of taxation	Tax_knowledge	Understanding of tax obligations and regulations, including those related to education.	Valensky (2018) and Mansyuri, Mauzu, and Yuliana (2022)
2.	Company financial condition	Financ_con	Company conditions, especially financial conditions, which are the company profile (Taxpayer)	Blazek (2021)
3.	Organizational structure and internal systems	Org&intern	The company's internal commitment to taxes as well as the internal mechanisms for planning, paying, and evaluating corporate taxes.	Yost (2023) and Valensky (2018)
4.	Corporate ethics and culture	Org_culture	Companies that realize that tax optimization has an impact on company value.	Assidi, Aliani, and Omri (2016) and Valensky (2018)
5.	Access to tax services	Tax_serv	Availability of access to tax services, especially for taxpayers.	Rajeswari, Sari, Ratnadi, and Widanaputra (2024) and Mansyuri et al. (2022)
6.	Ease of payment system	Tax_payment	A simple and easy tax payment system for taxpayers.	Mansyuri et al. (2022) and Rajeswari et al. (2024)
7.	Integrity of tax officers	Tax_intgrt	Integrity (Including competence) of tax officers in providing services and carrying out their duties.	Usman (2019)Usman (2019) and Valensky (2018)
8.	Tax penalties	Tax_sanctn	Tax sanctions are a guarantee that tax provisions are complied with, or can be said to prevent violations of tax norms.	Sandra and Anwar (2021)
9.	Tax incentives	Tax_incntv	Facilities provided in the field of taxation to certain taxpayers in the form of reduced tax rates with the aim	Afandi, Siregar, Harahap, and Cahyani (2023) and Akbar (2020)

No	Factor	Code	Description	Reference
			of reducing the amount of tax burden still to be paid.	
10.	Tax regulations and fiscal policy	Tax_reglt	Legal provisions governing general provisions and tax procedures	Feller and Schanz (2017) and Valensky (2018)
11.	Inflation	Inflation	The increase in the prices of goods and services during a certain period.	Groves (1959)
12.	Economic stability	Eco_stable	Economic conditions that will affect the business climate.	Hong and Smart (2010)

Source: Input of MULTIPOL analysis (Processed).

Factors related to optimizing tax revenue based on the taxpayer's point of view are then input into the MICMAC analysis to be able to map and categorize various causal factors, as well as review based on a prospective approach regarding its position in the future.

4.3. Evaluation of Factors Related to Optimizing Tax Revenue

In MICMAC, factors are grouped into four quadrants as explained in Chapter III, Method. Factors are grouped into quadrants based on dependency and influence categories. The results of the MICMAC analysis show a map of each factor as in Table 1 in the direct influence/dependence map (Figure 2).

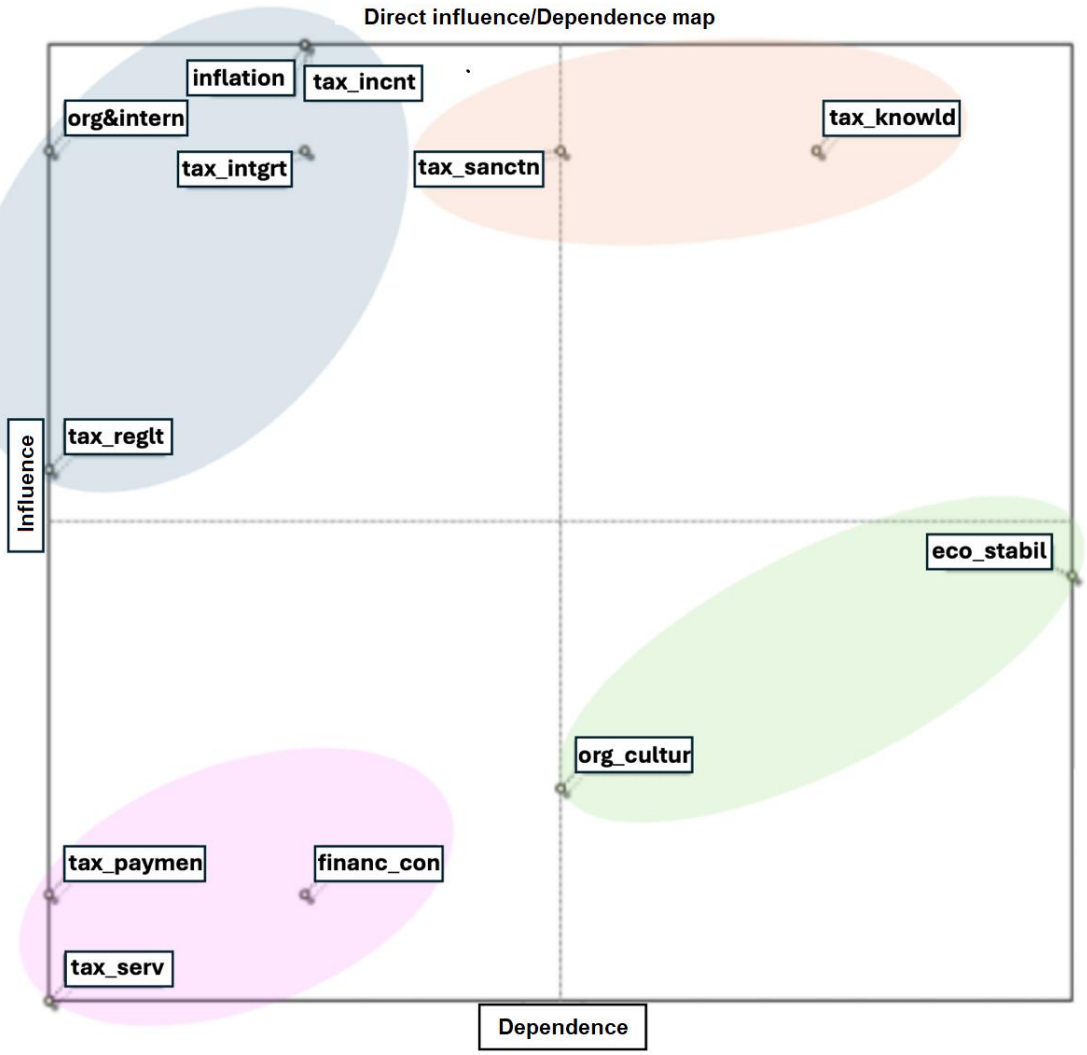

Figure 4. Direct influence/Dependence map of tax optimization factors.
Source: Output of MICMAC analysis.

Based on Figure 4, the position of each factor/variable on the direct influence/dependence map is visible. More clearly, the qualification of the position of each variable/factor is presented in Table 2.

Table 2. Variable/Factor typology based on direct influence/Dependence map tax optimization factors.

Influence/ Determinants variables (Quadrant I)	Relay variables (Quadrant II)	Depending on variables (Quadrant III)	Exclude variables (Quadrant IV)
Tax incentives (Tax_incentive) Organizational structure and internal systems (Org&intern) Tax officer integrity (Tax_intgrt) Tax regulations and fiscal policy (Tax_reglt) Inflation	Understanding and knowledge of taxation (Tax_knowledge) Tax sanctions (Tax_sanctn)	Corporate ethics and culture (Org_culture) Economic stability (Eco_stabil)	Company financial condition (financ_con) Access to tax services (Tax_serv) Ease of payment system (Tax_payment)

Source: Output of MICMAC analysis (Processed).

Based on the results of the grouping, it is known that there are five (5) factors that are influential variables, namely tax incentives, organizational structure and internal systems, integrity of tax officers, tax regulations and fiscal policies, and inflation. Therefore, from the taxpayer's point of view, these five factors are the drivers or prime movers in the system being discussed. Meanwhile, the factors of understanding and knowledge of taxation and tax sanctions are relay variables, which means that this factor is very sensitive because whatever happens in this factor will have an impact on the system as a whole considering its high influence and dependence. Furthermore, the factors of ethics and corporate culture and economic stability are factors that have dependence and tend to be affected. The results of the analysis also found that the company's financial condition, access to tax services, and ease of payment systems are factors that have a relatively small influence on the system being evaluated.

Tax incentives are said to be able to improve the tax base in developing countries (Jun, 2017). While tax administration (including the organization of tax authority) is still very influential in tax optimization efforts (Alink & van Kommer, 2016). Likewise, tax policy and fiscal consolidation simultaneously have a significant effect on tax, especially corporate income tax (Nendi, Fahlevi, & Setiadi, 2019).

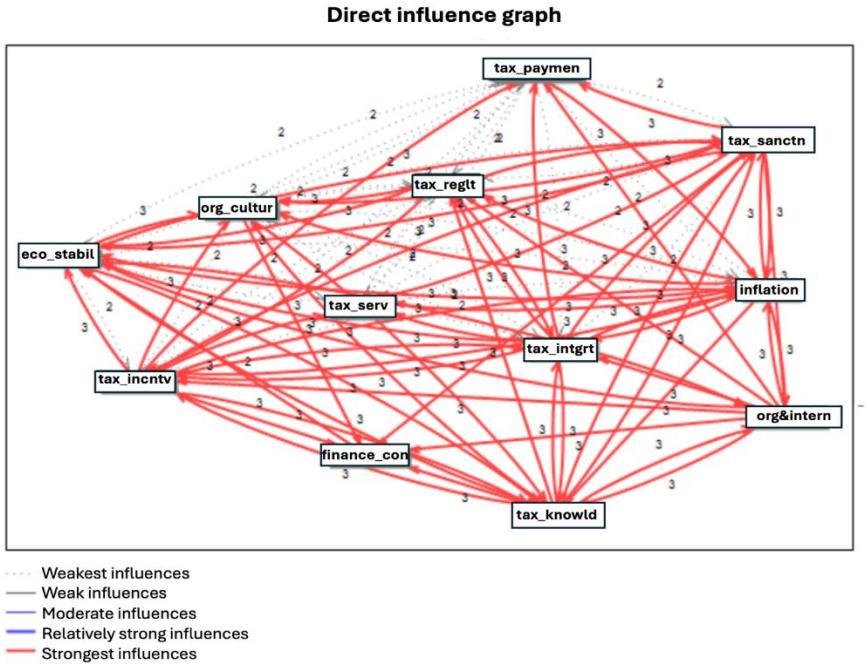

Figure 5. Direct influence graph of tax optimization factors.

Source: Output of MICMAC analysis.

MICMAC also presents information on the strength of each influence between variables. Figure 5 presents the influence between factors, where: 1) the red line indicates a very strong influence; 2) the thick blue line indicates a relatively strong influence; 3) the thin blue line indicates a moderate influence; 4) the black line indicates a weak influence; and 5) the dotted line indicates a very weak influence.

Figure 5 shows that among the factors analyzed, the dominant one has a strong influence, which is indicated by the number of red lines. However, what is interesting is that the ease of the payment system factor tends to have a weak influence on other factors. This factor is indeed largely determined by the design of government policies and is not significantly influenced by other factors. Taxpayers have considered that the ease of paying taxes is not something that needs to be prioritized at this time, given that the payment technology developed from banking services, as well as computerized financial systems, have facilitated tax payments.

The influence of various factors is crucial for determining decisions or policies for stakeholders. Additionally, obtaining information about the stability of the system, which is an influential factor, necessitates re-identification based on indirect influence. Figure 6 presents a map of the indirect influence/dependence map.

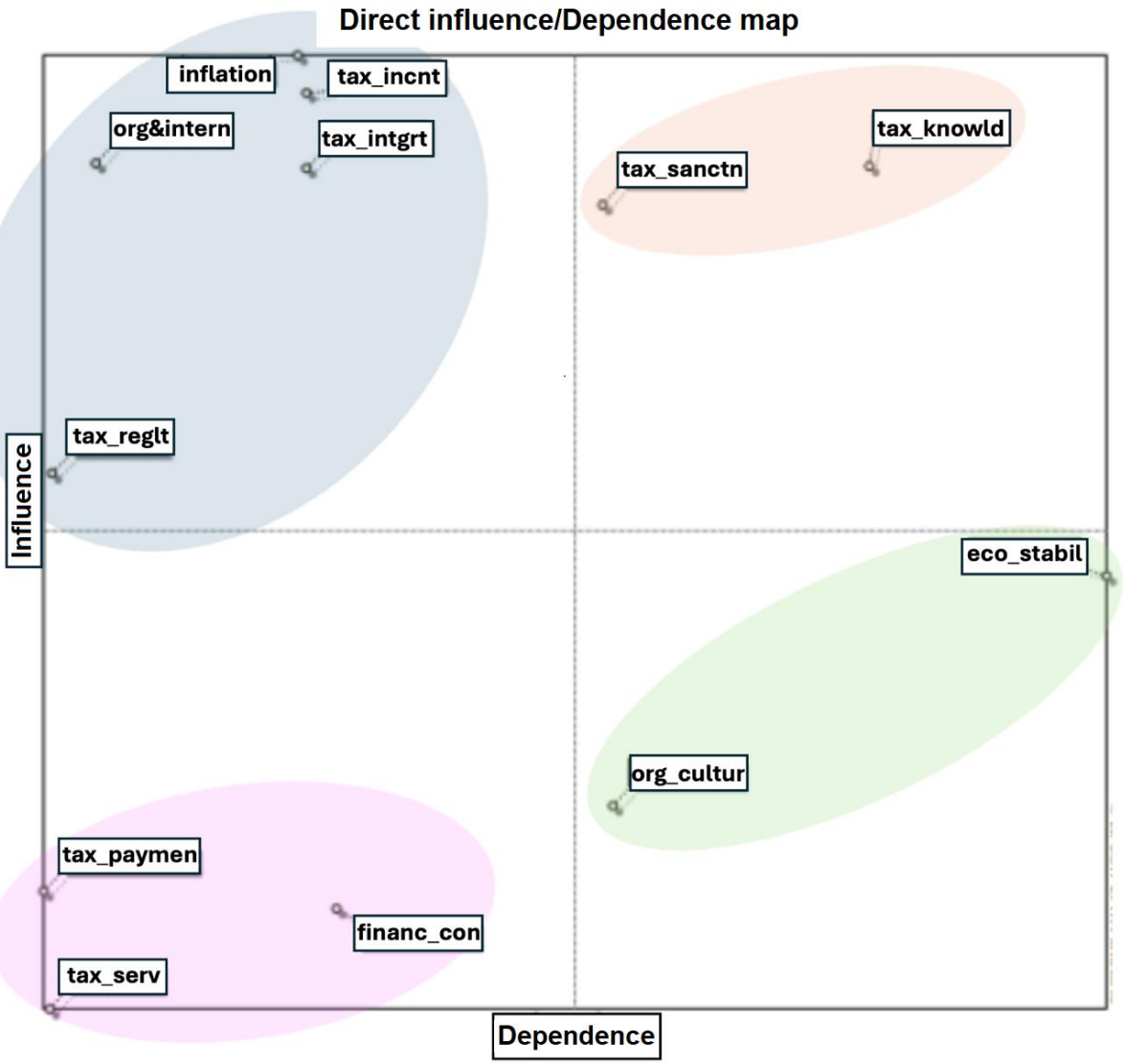

Figure 6. Indirect influence/Dependence map of tax optimization factors.

Source: Output of MICMAC analysis.

When Figure 6 is compared with the previous Figure 4, it can be seen that there is no change in the position of the variable from the direct effect classification. This means that the factors classified in the direct effect are stable (Ariyani, Prasetya, & Gilang, 2019).

For more clarity in mapping these factors, Figure 7 presents changes in factor rankings based on influence and dependency. These changes illustrate the position of factor rankings in the initial conditions (matrix of direct influence - MDI) and after iteration with the matrix of indirect influence (MDII).

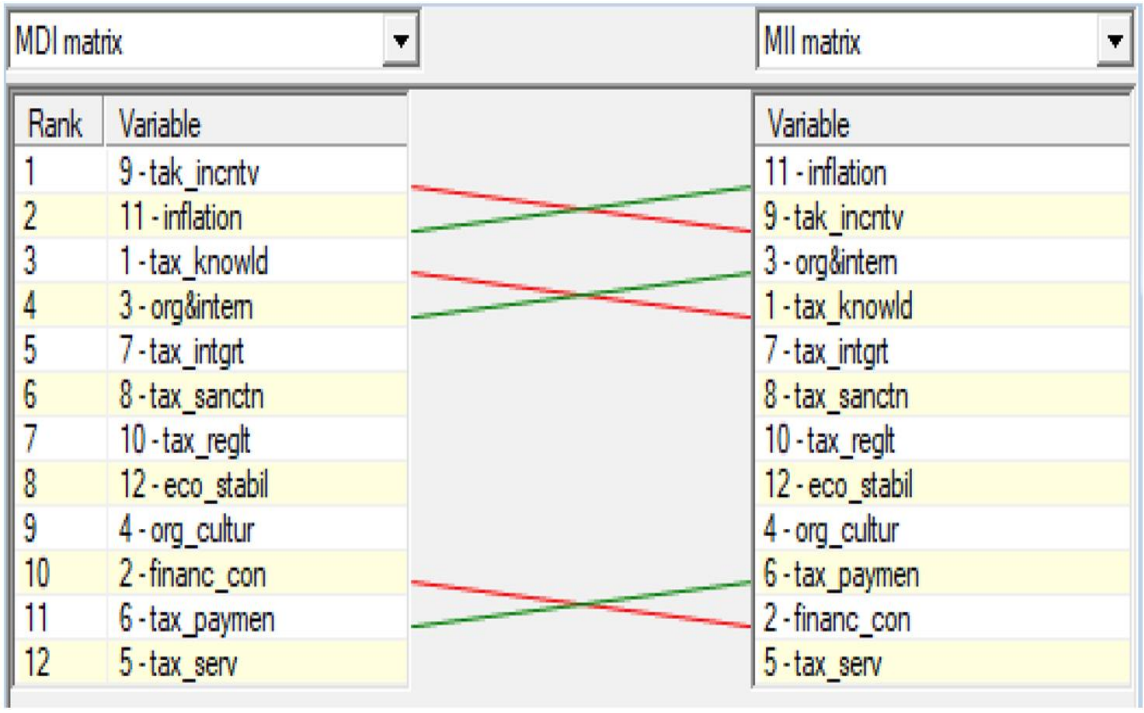

Figure 7. Variable ranking based on influence.

Source: Output of MICMAC analysis.

From Figure 7, it can be seen that there is a shift in the order of several factors. For example, tax incentives, which were previously ranked first as the most influential factor, are now ranked second after iteration. Tax incentives remain a popular policy during periods of economic contraction (such as the Covid-19 pandemic), but in the future, they need to be implemented with consideration for effectiveness and efficiency (Simanjuntak & Nuryanah, 2022). This change is also often interpreted as a shift in orientation for the future, where currently tax incentives are the most influential factor, while in the future, the inflation factor is considered very important.

4.4. Potential Path Policy for Optimizing Tax Revenue

As previously explained, in preparing recommendations related to optimizing tax revenue, a prospective approach will be used so that it not only captures current conditions but is also relevant to future prospects. In preparing potential policy paths using MULTIPOL analysis, several inputs are determined at the initial stage, such as criteria, scenarios, policies, and programs/activities (actions) which are prepared based on the results of literature reviews, analysis of challenges and constraints on tax optimization, and information from respondents.

Table 3 presents the criteria for tax optimization, where the criteria in question are the objectives to be achieved.

Table 3. Identification of criteria in compilation potential path policy of tax optimization.

No	Criteria	Code	Weight	Definition
1	Minimizing the tax gap	Min.gap	4	Minimize the difference between the amount of tax that theoretically must be paid to the state/Region and the amount of tax actually paid.
2	The tax base is getting wider	Imp.tax.base	6	The imposition of taxes, which are usually based on income, property, assets, consumption, transactions, or other increasingly broad economic activities.
3	Improving taxpayer compliance	Compliance	5	Increasing taxpayer awareness and behavior to fulfill all tax obligations and exercise their tax rights.
4	Increasing tax revenue	Tax.revenue	5	Increasing state/Regional revenues from taxes.

Source: Input of MULTIPOL analysis.

The MULTIPOL analysis stage begins with identifying policies and actions (programs) related to optimizing tax revenue. Table 4 presents the identification of potential policies for optimizing tax revenue.

Table 4. Identification policy in preparing potential path policy for optimizing tax revenue.

No.	Policy	Code	Weight	Definition
1	Synchronization and strengthening of regulations	Sync.reg	4	Harmonization of various laws and regulations related to taxes, both central and regional.
2	Expansion of the tax base	Tax.base	6	Expansion of taxation, which is usually based on income, property, assets, consumption, transactions, or other economic activities.
3	Optimizing tax potential	Potential	5	Optimizing tax payments according to the taxpayer's ability, as well as the government's ability to collect taxes from the public.
4	Reform of tax services	Service	3	Reforms for the better are the way tax officers help manage or prepare all the requirements needed by taxpayers.
5	Optimization of tax extensification	Extensive	3	Optimizing the increase in the number of registered taxpayers and expanding tax objects in tax administration.
6	Strengthening of targeted supervision	Monitor	5	Strengthening of devices and implementation of data research activities to follow up in order to explore tax potential, and monitoring compliance with tax obligations.

Source: Input of MULTIPOL analysis.

Furthermore, in its implementation, various programs and activities related to employment need to be carried out, as described in Table 5.

Table 5. Program identification/Actions in preparing a potential path policy for optimizing tax revenue.

No.	Action	Code
1	Tax data update	Data
2	Technological improvements in tax management systems	Techno
3	Tax socialization and education of the public	Educate
4	Synergy between central and regional governments in terms of regulation	Synergy
5	Simplification of tax administration	Admin
6	Strengthening data analysis and systems for the validity of priority supervision targets	Valid.mon
7	Targeted and measurable fiscal incentives	Incentive
8	Expansion of cooperation with relevant stakeholders/Tax authorities	Cooperate
9	Improvement of a risk management system	Risk

Source: Input of MULTIPOL analysis (Processed).

Considering that MULTIPOL is a scenario-based path policy preparation analysis technique, in this study, two scenarios are distinguished for the types of central and regional taxes, as shown in Table 6.

Table 6. Identification of scenarios in drafting a potential path policy for optimizing tax revenue.

No	Scenario	Code	Weight	Definition
1	Central tax optimization	State	6	Optimization of taxes set and collected by the central government.
2	Optimization of regional taxes	Local	5	Optimization of taxes set and collected by local governments.

Source: Input of MULTIPOL analysis (Processed).

The identification of the criteria, policies, and actions then becomes the basic input in the MULTIPOL application for compiling policy paths based on the two scenarios, namely government intervention, HR intervention, and investment optimization.

Table 7 presents the results of the MULTIPOL analysis based on the scores for each policy and the average scores, as well as the standard deviations obtained.

Table 7. Evaluation based on actions and policies for optimizing tax revenue.

Action	Policy						Mean	Std. dev	Position
	Sync.reg	Tax.base	Potential	Service	Extensive	Monitor			
Data	10.9	12	11.6	10.4	11.4	9.6	11.1	0.9	2
Techno	11.7	11.8	12.1	11.6	12.2	11.4	11.8	0.3	5
Educate	14.5	13.9	14.3	14.9	14.4	15.3	14.5	0.5	8
Cooperate	15.1	15.1	15.6	14.9	15.9	14.9	15.2	0.3	9
Admin	13.6	13.2	13.8	13.7	14	13.8	13.6	0.3	6
Valid.mon	14.2	13.8	14.1	14.3	14.2	14.7	14.2	0.3	7
Incentive	11.5	10.6	11.3	12	11.6	12.5	11.5	0.7	4
Synergy	11.3	11.4	12.1	11	12.4	10.9	11.5	0.5	3
Risk	10.5	10.8	11.1	10	11.1	10	10.6	0.4	1

Source: Input of MULTIPOL analysis (Processed).

The average score measures the overall performance of each action against the policy (or program against the policy), while the standard deviation value indicates the sensitivity of each action to the policy (Stratigea, Kavoura, & Koutsou, 2013). In general, the best performance is indicated by a high average value and a low standard deviation. In MULTIPOL, the higher the position number, the better the performance of the action. However, it is possible that actions with relatively high standard deviations also have a relatively good position, as long as they are supported by high scores for certain policies. As presented in Table 7, the highest scores were obtained in the program of expanding cooperation with stakeholders/related tax authorities, socialization and education of taxes to the public, and strengthening data analysis and systems for the validity of priority supervision targets.

Every policy certainly requires a program/action as a form of implementation. Figure 8 presents a profile map that connects the scores for each program (actions) with the policy.

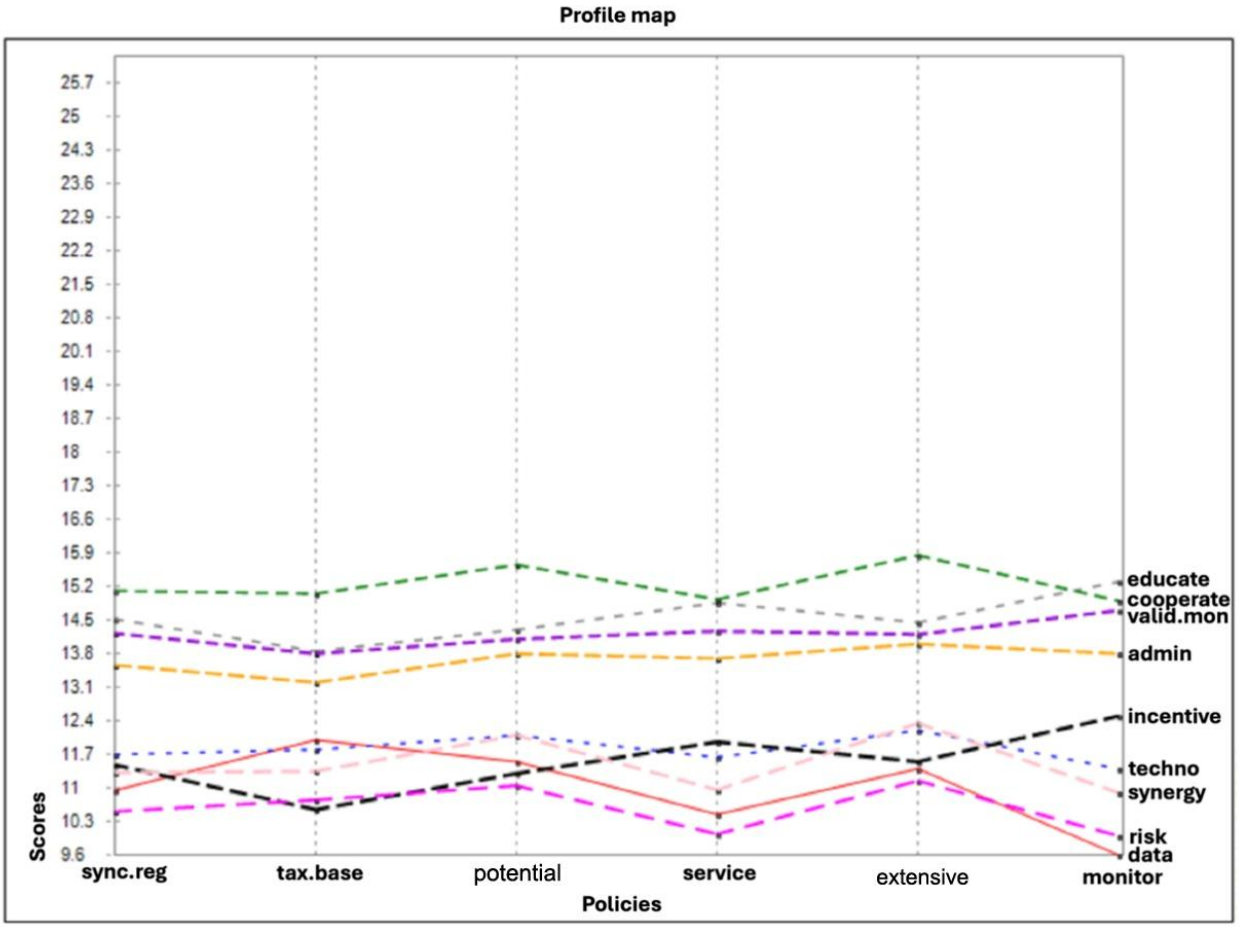

Figure 8. The relationship between policy and action for optimizing tax revenue.

Source: Output of MULTIPOL analysis.

Figure 8 shows that the program of expanding cooperation with stakeholders and tax authorities, as well as the program of socialization and tax education for the public, are priority actions in various policies for tax optimization. This is followed by a program to strengthen data analysis and systems for the validity of priority supervision targets.

As previously stated, MULTIPOL is a strategy formulation technique with a multi-scenario and criteria approach.

Table 8. Score of policy on tax revenue optimization scenario.

Policy	Scenario		Mean	Std. dev	Position
	State	Local			
Sync.reg	24.9	25.3	25.1	0.2	2
Tax.base	26.5	25	25.8	0.8	4
Potential	25.5	26.5	25.9	0.5	5
Service	25.1	25.7	25.4	0.3	3
Extensive	25.1	27	26	0.9	6
Monitor	23	25	23.9	1	1

Source: Output of MULTIPOL analysis.

More details of the mapping of each policy in the scenario are presented in Figure 9. In accordance with Table 8 and Figure 9, the results of the analysis show that in the central tax revenue optimization scenario, the policies that are prioritized include expanding the tax base, optimizing tax potential, and synchronizing and strengthening regulations. Meanwhile, in the regional tax revenue optimization scenario, the policies that can be prioritized include strengthening tax extensification, optimizing tax potential, and reforming tax services.

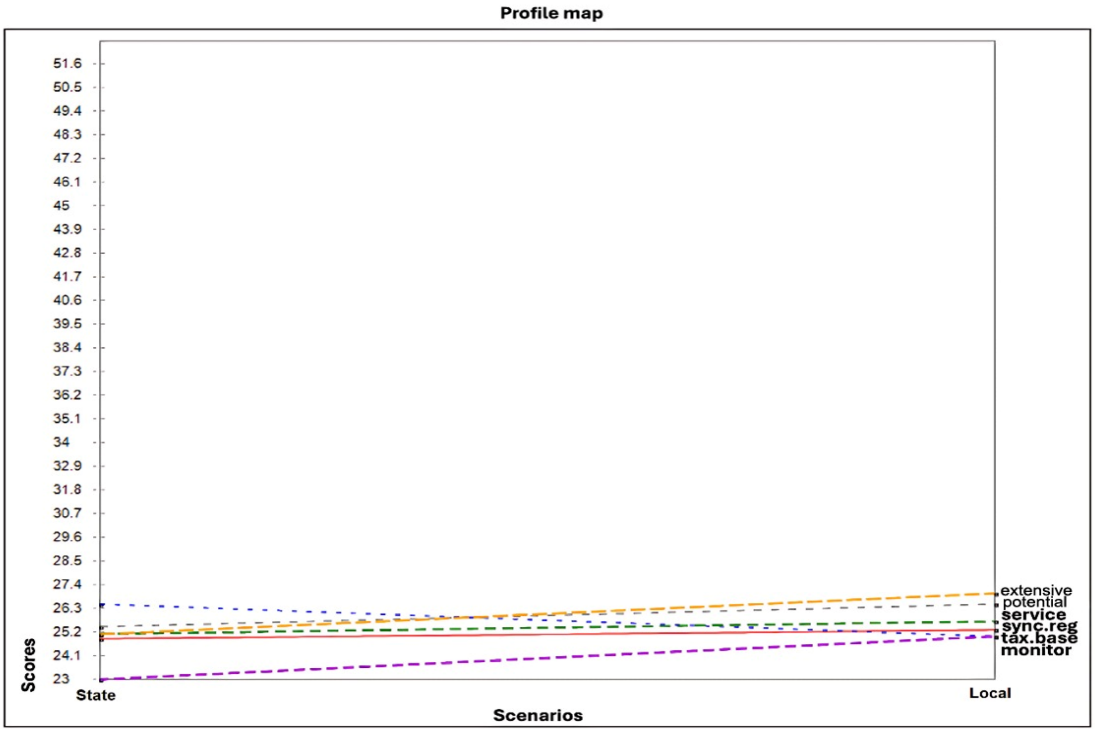

Figure 9. Relevance of tax revenue optimization scenario and policy.

The overall results of the MULTIPOL analysis can be presented in the form of potential policy paths.

Scenario	Policy	Code of action
Optimization of central tax revenues	Expansion of the tax base	Cooperate, educate, valid.mon, admin, data, techno, synergy, risk, incentive
	Optimizing tax potential	Cooperate, educate, valid.mon, admin, synergy, techno, data, incentive, risk
	Strengthening tax extensification	Cooperate, educate, valid.mon, admin, synergy, techno, incentive, data, risk
	Reform of tax services	Cooperate, educate, valid.mon, admin, incentive, techno, synergy, data, risk
	Synchronization and strengthening of regulations	Cooperate, educate, valid.mon, admin, techno, incentive, synergy, data, risk
	Strengthening the supervision strategy	Educate, cooperate, valid.mon, admin, techno, incentive, synergy, data, risk
Optimization of regional tax revenue	Strengthening tax extensification	Cooperate, educate, valid.mon, admin, synergy, techno, incentive, data, risk
	Optimizing tax potential	Cooperate, educate, valid.mon, admin, synergy, techno, data, incentive, risk
	Reform of tax services	Cooperate, educate, valid.mon, admin, incentive, techno, synergy, data, risk
	Synchronization and strengthening of regulations	Cooperate, educate, valid.mon, admin, techno, incentive, synergy, data, risk
	Strengthening the supervision strategy	Educate, cooperate, valid.mon, admin, techno, incentive, synergy, data, risk
	Expansion of the tax base	Cooperate, educate, valid.mon, admin, data, techno, synergy, risk, incentive

Figure 10. Potential policy path for optimizing tax revenue.

Source: Output of MULTIPOL analysis (Processed).

Tax optimization strategies to prevent the "shadow economy" are categorized into two scenarios, namely central tax optimization (state tax) and regional tax optimization (Kurniawan, Akbar, & Sinurat, 2024), as shown in Figure 10. State tax optimization is supported by several main policies, including tax base expansion, tax potential optimization, and tax service reform. This is in accordance with the results of previous research conducted in Kenya, where tax base expansion was shown to have a significant impact on the organizational performance of the Kenya Revenue Authority (Vita & Muathe, 2023). Bartels and Jenderny (2015) also found that Germany's tax base expansion perspective represents an economic practice that enhances fairness and equity in tax systems.

Meanwhile, local or regional tax revenue optimization is carried out with policies to strengthen tax extensification, optimize tax potential, and reform tax services. The forms of reform carried out include increasing the efficiency of tax administration and reducing tax collection costs (Kurniawan et al., 2024). In addition, the use of information technology in taxation is also an important form of reform that must be carried out (Vita & Muathe, 2023).

When viewed based on action, there are several actions that are superior in almost all policies, namely the expansion of cooperation with relevant stakeholders/tax authorities, tax socialization and education for the public, and strengthening data analysis and systems for the validity of priority supervision targets. Cooperation between levels of government (central-local) in terms of tax has been implemented in several countries with a decentralized system, such as Tanzania. The results of Fjeldstad, Ali, and Katera (2019) show that in the interrelations of tax between central and local government in Tanzania, there are two main obstacles, namely institutional trust issues and administrative constraints. Taxpayer education has been proven in several previous studies to have a significant impact on tax payments, including for corporations or SMEs as taxpayers (Kikuvi, 2020; Vita & Muathe, 2023).

5. FINAL CONSIDERATIONS

There are five factors that are influential variables, namely tax incentives, organizational structure and internal systems, the integrity of tax officers, tax regulations and fiscal policies, and inflation. Based on the taxpayer's point of view, these five factors are the drivers or prime movers in the system being discussed. Meanwhile, the factors of understanding and knowledge of taxation and tax sanctions are relay variables, which means that this factor is very sensitive because whatever happens in this factor will have an impact on the system as a whole considering its high influence and dependence. The results of this study have provided practical implications that tax optimization can be improved by increasing tax knowledge as an important factor. In addition, the implementation of tax sanctions is also important to be implemented consistently. The results of the study have been able to fill the research gap on obstacles in tax optimization in the global era, where globalization is also mentioned as a threat to tax optimization.

In order to encourage the optimization of the tax system, it can be achieved through a program to expand cooperation with related stakeholders/tax authorities, socialization, and tax education for the public, as well as strengthening data analysis and systems for the validity of priority supervision targets. The program to expand cooperation with stakeholders/tax authorities and the program to socialize and educate the public about tax are priority actions in various policies for tax optimization. This is followed by a program to strengthen data analysis and systems for the validity of priority supervision targets. The results of the analysis show that in the scenario of optimizing central tax revenues, the policies that are prioritized include expanding the tax base, optimizing tax potential, and synchronizing and strengthening regulations. Meanwhile, in the scenario of optimizing regional tax revenues, the policies that can be prioritized are strengthening tax extensification, optimizing tax potential, and reforming tax services. More specifically, further research needs to highlight tax optimization as a result of global activities, such as international trade, asset transfers, and activities involving foreigners. This is essential to minimize the shadow economy due to globalization.

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Institutional Review Board Statement: The Ethical Committee of the Financial and Development Supervisory Board (BPKP), Indonesia, has granted approval for this study on 13 December 2024 (Ref. No. PE.06.04/BAST-239/RJ.1/2024).
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Data Availability Statement: The corresponding author can provide the supporting data of this study upon a reasonable request.
Competing Interests: The authors declare that they have no competing interests.
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