



HOW DOES THE PUBLIC RESPOND TO THE IMPACT OF CARBON TAX IMPLEMENTATION PLANNING IN DKI JAKARTA?

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Abstract

Implementing a carbon tax is a policy to overcome the impact of carbon emissions on the decline in environmental quality. Implementing carbon tax policies can have complex impacts in various fields, such as economic, environmental, social, and political. This research analyzes the public's open response to the impact of carbon tax implementation. The research uses a qualitative and S-O-R method to analyze the public's response to the carbon tax. Data collection methods are carried out through interviews, observation, and documentation. The criteria for selecting sources (informants) in this research are people in DKI Jakarta who have an NPWP (Tax ID number), owners, and users of motorized vehicles, as well as academics in the field of taxation. Data analysis was done in data reduction, display, and conclusion. The analysis results in this research show that most people respond to implementing the carbon tax by agreeing with income redistribution as a reduction in rates for other types of taxes. In the environmental aspect, there is a positive response to implementing a carbon tax in reducing the impact of carbon emissions. Various responses highlighted the principles of justice regarding social inequality between social groups and the need to evaluate policy instruments in socio-political aspects. Public approval for implementing a carbon tax considering economic changes and environmental awareness still underlines the need for a fairer socio-political approach.

Keywords: Carbon tax, Carbon emission, Public response

INTRODUCTION

Climate change and sustainability issues often become communities' main agenda and focus worldwide. One of the issues regarding climate change is the quantity of carbon emissions, which continues to increase along with the massive frequency of human activities that release carbon dioxide gas (CO₂) into the earth's atmosphere. Based on data from the International Energy Agency, carbon dioxide emissions 2022 from energy combustion and global industrial activities will reach 36.8 gigatons or an increase of around 0.5% gigaton from global emissions in the same scope in 2022 (International Energy Agency, 2022). By looking at the level of global carbon emissions, which continues to increase in each calculation period, the urgency of implementing policies in various sectors that can overcome the consequences of carbon emissions in the form of extreme disasters such as climate change becomes important, especially policies in the economic sector. It cannot be denied that the economic activities of business and industrial actors contribute to releasing a large amount of carbon dioxide into the earth.

A carbon tax is one of the climate-energy policies in the regional economic sector. The carbon tax is one of the Carbon Economic Value (NEK) instruments imposed on purchasing goods containing carbon or activities that produce carbon emissions (Undang-Undang RI, 2021). The aim of implementing a carbon tax is not far from the Paris Agreement, namely supporting emission reduction targets in the medium and long term to create sustainable development (Badan Kebijakan Fiskal, 2021). Implementing a carbon tax in Indonesia will certainly impact various aspects of life, including economic, social, and political aspects and the environment, which can be studied based on positive and negative categories. If the carbon tax implementation in Indonesia follows the proper principles and mechanisms, positive



impacts, such as reducing emissions and potential state revenues from the carbon tax, can be realized.

Meanwhile, the imposition of a carbon tax will undoubtedly have a multiplier effect on the national economy, one of which is an increase in commodity and energy prices, which has the potential to give rise to a negative response from various levels of society, considering that even though carbon tax revenues are projected to be used to increase development funds and support for the community in the form of social assistance, the nature of taxes that do not receive direct compensation and the low level of awareness of the Indonesian people regarding environmental sustainability should be taken into account (Fitriya, 2022). Therefore, the public's response is significant because the public is the subject of tax and is the final source that accommodates the burden of costs due to the carbon tax. The public's perspective and opinion on the impact of implementing a carbon tax can determine how the policy will work. When the public supports and cooperatively participates, implementing the carbon tax in Indonesia can run smoothly according to its objectives, and vice versa. If the public does not respond vocally regarding the impact of implementing a carbon tax, there will be difficulties in the implementation procedure, and there will be no consideration for carbon tax policymakers to evaluate their planning. Therefore, the public's response to the impact of carbon tax policy in Indonesia must be considered and researched further.

Based on previous research mapping, Selvi et al. (2020) stated that the imposition of a carbon tax will affect the price of fossil fuels, which will also increase the cost of production. Furthermore, Tjoanto & Tambunan (2022) reviewed the factors of the political system and governance of government institutions, the influence of business and the economy, and the presence of public rejection as challenges for the government in implementing the carbon tax. With the same context, Maghfirani et al. (2022) found that economic distortions and the impact on low-income households are challenges to implementing a carbon tax in Indonesia. Pratama et al. (2022) projected the imposition of a carbon tax linked to the potential for state revenue and a reduction in the amount of carbon emissions in Indonesia. Meanwhile, it is still rare to find research that specifically discusses the public's response to the impacts and challenges of the plan to implement a carbon tax in Indonesia. The carbon tax, which has not been implemented in practice, could cause a lack of vocalism among the Indonesian people because the impact has not been felt directly and concretely.

Furthermore, Carattini et al. (2018) stated that public resistance is the obstacle to implementing a carbon tax. Povitkina et al. (2021) reviewed carbon taxes that are felt to be unfair by describing the perceptions of the people of the United States using an approach to the principles of justice. In addition, Baranzini & Carattini (2017) stated that policy design and effective communication regarding the impact of carbon taxes could increase public support and acceptability for implementing carbon taxes. Similar things were discussed in the research of Nowlin et al. (2020), which reviews public considerations that can determine carbon tax policy design options. Then, Ewald et al. (2022) examined the drivers and barriers of responses from the general public and fuel tax protest groups as indicators of understanding public resistance to the carbon tax in Sweden. Another relevant study by Muhammad et al. (2022) reviewed the response in the form of public acceptability with trust in the government as a determinant.

This research aims to analyze the public's open response to the impact of implementing the carbon tax in Indonesia. This research is different from previous studies because this research will specifically focus on the responses and opinions of people who are more open to planning and the impact of implementing carbon taxes in positive and negative dimensions, which are rarely discussed in previous research, especially in the research area, namely DKI Jakarta. DKI Jakarta is the capital and center of national economic activity. By being the center



of national economic activity, DKI Jakarta is also one of the areas with the highest level of transportation density in Indonesia, contributing to around 961 Kg of carbon emissions released from traffic jams in 2022 (Clinton & Pratomo, 2023). With this background, this research will focus on DKI Jakarta as the research area.

This research is expected to complement the literature on the attitudes and responses of the world public towards the implementation and impact of carbon taxes in various regions or countries. In addition, it is expected that this research can be used as a consideration and basis for the Ministry of Finance, the Directorate General of Taxes, and local governments in creating and determining various design options for Indonesia's carbon tax policy as well as for undertaking preventive efforts in responding to various public responses to the implementation of the carbon tax which is projected to be implemented in 2025.

LITERATURE REVIEW

Tax Concept

One of the largest revenue sources the state receives derives from taxes. Tax is a mandatory contribution to the state by individual or corporate taxpayers that is coercive in nature, regulated by law without receiving direct benefits, and is used for state needs for the greatest prosperity of the people (Wulantari & Putra, 2020). According to the Act on General Provisions and Tax Procedures (KUP), it is also stated that tax is a mandatory contribution to the state that is coercive for taxpayers to be then used for state needs in providing welfare for the people (Ilanoputri, 2020). According to Black's Law Dictionary, tax is any form of contribution imposed by the government on individuals to support the use and provision of state services, such as tolls, tribute, levies, tribute, customs duties, subsidies, aid, or supplies. Also, tax is a transfer of wealth from society to the state treasury to finance daily expenses, and the surplus is used for public savings as a source of public investment financing (Suandy, 2017). Furthermore, tax is a mandatory contribution, both in the form of money and goods, which is levied by the authorities based on applicable legal regulations to finance the production of goods and services to provide general welfare (Sihombing & Sibagariang, 2020). Thus, it can be concluded that tax is a mandatory contribution charged by the government to individuals or entities regulated in law for the state's needs in improving people's welfare without providing direct benefits to the payer.

Carbon Tax Concept

The carbon tax is imposed on consumption or production involving fossil producing carbon dioxide emissions or other greenhouse gases (Margono et al., 2022). Also, the carbon tax is an economic mechanism that incentivizes businesses and individuals to reduce greenhouse gas emissions by imposing taxes on activities and products that produce carbon emissions (Adyana, 2023). The carbon tax is levied on using fuels such as coal, oil, and gas and is an important aspect of environmental calculations (Wibisono & Soepriyanto, 2024). This fiscal contribution aims to internalize the external costs associated with the environmental impact of carbon emissions by imposing additional costs on individuals and business entities that cause this pollution. Thus, a carbon tax is one of the policy instruments used by the government to reduce carbon emissions and stimulate the transition to a low-carbon economy.

Implementing a carbon tax in Indonesia is an important step in reducing carbon emissions and has a significant positive impact on the environment in Indonesia. By adding a carbon fee to fuel prices, a carbon tax would encourage the use of renewable energy and environmentally friendly technologies. A carbon tax can also recycle revenue obtained by the state by reducing the cost of reducing emissions by replacing other distorting taxes. Reducing capital taxes could result in more significant savings in welfare costs. In other words, a carbon tax can increase state revenue (Kristanti & Saptono, 2023). In addition, revenue generated from carbon taxes can be allocated to developing green infrastructure, such as solar and wind power



plants, and forest restoration efforts. Thus, implementing a carbon tax not only helps protect Indonesia's environment from the impacts of climate change but also helps improve the quality of life of people and the sustainability of ecosystems throughout the country.

METHODS

This research uses a qualitative method approach. The S-O-R (Stimulus Organism Response) method was proposed by Hovland et al. (1953). Based on the method model, this research reviews the relationship between the stimulus from the implementation of the carbon tax and the organism as a public that experiences its impact, resulting in a positive response in the form of approval or a negative response in the form of rejection of the implementation of the carbon tax. Positive and negative impacts arising from economic, environmental, social, and political aspects can influence the public's response to implementing the carbon tax.

The data used in the research are the results of interviews with informants. The interview method was semi-structured to collect relevant information that was more openly related to the research topic. The interview process was carried out during December 2023 offline and online using Zoom meeting media. The criteria for selecting sources (informants) in this research are 1) People in DKI Jakarta who have an NPWP, 2) Motor vehicle owners and users, and 3) Academics in the field of taxation. The selection of informants according to these three criteria is intended so that this research can see public responses that include points of view based on the diverse backgrounds of individuals affected by carbon tax policies and have a deep understanding of the related economic, environmental, social, and political aspects. The informants in this research consisted of nine people, five of whom were individuals, two drivers, an employee of the Directorate General of Taxes, and a tax lecturer. This research employs the data analysis technique Miles & Huberman (1994), which divides the data processing process into three activities, namely reducing data resulting from interviews, presenting data in the form of narratives, and drawing conclusions in the form of public responses to the impact of implementing the carbon tax in DKI Jakarta. The themes of the interview items used were (1) the potential redistribution of carbon tax revenues for economic growth purposes, (2) the potential for increased financial burdens and increases in commodity prices, (3) the potential for a carbon tax as an instrument for mitigating damage and preserving the environment, (4) the potential for conflicts of interest between various levels of society due to a carbon tax, and (5) the potential for the success of carbon tax regulations under their objectives.

RESULTS AND DISCUSSIONS

Public Response to the Impact of Carbon Tax Implementation on Economic Aspects

Implementing a carbon tax impacts economic aspects that can be categorized as positive and negative. On this basis, topics related to the potential concept of carbon tax revenue redistribution aimed at economic growth were drawn as an interview agenda. The data reduction results from interviews conducted with informants regarding this topic showed various views regarding the topic raised. For individual groups of people, five out of five agree regarding the positive impact of implementing a carbon tax in the form of redistributing income to reduce other types of taxes, but this concept must consider many specific conditions. Furthermore, income tax is determined as an example of a type of tax whose rate is reduced from the redistribution of carbon tax revenues. With this case as an example, several informants expressed their concern because they are not subject to income tax, so the benefits of the redistribution of carbon tax income do not reach every individual in the public, plus the public will bear the economic burden resulting from the implementation of the carbon tax.

Furthermore, one of the informants who agreed with the concept of income redistribution limited his agreement to comparing the carbon tax rate and the value of reducing



rates for other types of taxes. The informant hopes that the carbon tax rate will not be too high so that the impact of lowering rates for other types of tax will be fair. Apart from that, one of the informants also stated that taking the same case as an example of reducing the income tax rate, there is no relevance between carbon and income tax. The informant stated that the reduced tax type must be relevant to the carbon tax, for example, vehicle tax, considering that vehicles are emission-producing objects.

Meanwhile, one of the informants with a driver background expressed his disagreement with redistributing carbon tax revenue because the informant felt that the policy of levying carbon tax on the public was unfair. Informants stated that the carbon tax should only be imposed on companies or industrial sectors because they are large contributors to carbon emissions. Meanwhile, other informants with the same background had the same responses and views as individual groups of society. Furthermore, the informant, an employee of the Directorate General of Taxes, responded that he disagreed with the concept of the potential positive impact of the related carbon tax. The informant stated that the concept of carbon tax revenue for expenditure related to environmental emissions issues was more appropriate because it was under the objectives of the carbon tax as stated in Act Number 7 of 2021 concerning Harmonization of Tax Regulations. Other informants with a tax academic background also believe that the carbon tax revenue allocation should be used for environmental conservation efforts and controlling natural damage.

By explaining these results, it can be concluded that the average individual group of people agrees with the concept of redistribution of carbon tax income as a deduction from other types of taxes, but with the caveat that conditions related to the subject of the tax, tax rates and the relevance of the carbon tax in the kind of tax being taken into account must be taken into account reduced so that the goal of economic growth can reach every individual in society. Meanwhile, informants with a background in taxation knowledge responded that they disagreed with the concept of income redistribution as a reduction in rates for other types of taxes and stated that the increase in state revenue from the carbon tax was used for efforts to reduce carbon emissions to be in line with the objectives of the carbon tax, namely environmental preservation for a sustainable civilization. These responses and opinions are in line with Carattini et al. (2018), which stated that focus groups in Denmark, France, Germany, Ireland, and the UK prefer the carbon tax revenue policy design option to support emissions reduction efforts rather than redistributing income to reduce other taxes (revenue-neutral forms). Meanwhile, egalitarian types whose criteria in this study are similar to individual groups of society are more interested in the carbon tax revenue redistribution concept.

One of the negative impacts of implementing a carbon tax on the economy is the potential for increasing economic burden and commodity prices, considering that many industrial sectors and companies release emissions in their business processes. Regarding this topic, the results of interview data reduction show that every informant agrees with the narrative that implementing a carbon tax will potentially increase the economic or financial burden on society. Informants from tax academics and the Directorate General of Taxes employees stated that the public would be the final source of the burden resulting from the carbon tax implementation scheme. In interviews, informants mostly responded to the negative impact of implementing the carbon tax with countermeasures such as reducing consumption of necessities because the carbon tax would increase commodity prices. Supply chain or distribution network costs can soar, considering that fuel, which plays an essential role in the distribution network, can become the object of a carbon tax. According to the informants, another effort to overcome the increase in economic burden is by switching to public and environmentally friendly transportation, in the same context that fuel will be the object of a carbon tax. Meanwhile, one of the community informants felt that this carbon tax would not increase the economic burden



on the public because the tariff was relatively low, namely IDR 30/kg CO₂ equivalent. The informants stated that with relatively low tariffs compared to other countries, the positive impact on environmental sustainability could be considered a mutual benefit.

Furthermore, the tax academic informant stated that imposing a carbon tax on society could make people apathetic towards the environment. People may feel they are contributing and act arbitrarily in the environmental realm. For this reason, it is necessary to create policies that accompany the implementation of the carbon tax to maintain the morale of people already burdened by this tax. The Informant from the Directorate General of Taxes also expressed their personal opinion that implementing the carbon tax needs to be followed by other regulations, such as reducing other tax rates so that people's purchasing power and economic turnover are maintained. Therefore, it can be concluded that each informant in this interview responded to the negative impact of implementing the carbon tax with countermeasures and other policy proposals that accompanied its implementation. Barus & Wijaya (2022) also stated the same thing, that reducing other types of tax rates is one of the policies that could accompany the policy of implementing a carbon tax in the future.

Public Response to the Impact of Carbon Tax Implementation on Environmental Aspects

Implementing a carbon tax impacts the environment in ways that can be categorized as positive and negative. On this basis, topics related to mitigating environmental damage due to emissions produced to create sustainable human civilization, which positively impacts environmental aspects, were drawn as part of the interview agenda. Based on the interviews conducted with informants regarding this topic, the results showed slight differences between the informants in providing responses or views related to the topic. All informants from individual community groups expressed their agreement regarding the positive impact of implementing a carbon tax as mitigating environmental damage due to carbon emissions to create a sustainable human civilization. However, the government must be serious about monitoring and realizing this carbon tax. Apart from that, there were concerns from informants regarding the continued policy of implementing a carbon tax, which requires people to buy electric vehicles due to price factors and high maintenance costs. The health aspect was also expressed as an important reason for supporting a carbon tax, considering the potential for improving air quality through reducing carbon emissions, which directly impacts health. In addition, carbon tax revenues allocated for environmental protection efforts and as an incentive to switch to environmentally friendly fuels were important points highlighted by one of the informants. Meanwhile, the two informants with driver backgrounds also expressed their agreement that the existence of a carbon tax could reduce carbon emissions.

Furthermore, the informant, an employee of the Directorate General of Taxes, also provided responses showing support for implementing a carbon tax to deal with environmental problems effectively by using two approaches to controlling carbon emissions: the carbon tax concept and carbon trading. Thus, apart from looking at the impact of implementing a carbon tax on environmental aspects, informants also assessed how important it is that policy tools that are diverse and integrated can handle the complex issue of carbon pollution. Meanwhile, the informant, who has a background as a tax academic, stated that he disagreed that the carbon tax could significantly reduce carbon emissions. The informant also emphasized the importance of a comprehensive approach, full support from the government, and public awareness to achieve optimal results. Understanding that the success of carbon tax policies in mitigating carbon pollution depends not just on an established policy framework but also on the public's level of awareness and active involvement is important in designing and implementing sustainable environmental solutions.

Thus, the interview results show that the carbon tax has received approval from most informants as an effort to mitigate carbon emissions. This is based on the impact of



environmental, climate, and health factors. Considering that various community activities contribute to producing carbon emissions, such as particulates from motorized vehicles used for daily transportation. Therefore, the effectiveness of a carbon tax to overcome this environmental issue requires synergy between the active participation of the government, industrial sector, and society to create a healthy environment, maintain the sustainability of natural resources, and shape a sustainable human civilization for the future. The research results in the form of approval of a carbon tax as an effort to mitigate carbon emissions are in line with Marron et al. (2015), which shows that carbon taxes have been proven to be able to reduce carbon emissions by 1.5% - 6% in countries such as Denmark and Sweden. In addition, implementing a carbon tax in Finland reduced carbon emissions in the transportation sector in the first year by 10% and increased to 20% after five years of implementing the carbon tax (Elbaum, 2021).

Public Response to the Impact of Carbon Tax Implementation on Socio-Political Aspects

By implementing a carbon tax, consequences can arise involving socio-political aspects that can be analyzed positively and negatively. Combining social and political aspects can open up a comprehensive discussion regarding how carbon taxes are not only an economic instrument but also an instrument to achieve broader social and political goals. The interviews conducted with informants regarding this topic showed differences of opinion or various views regarding the topic raised. With the differences of opinion, several conclusions can be drawn regarding the implementation of carbon tax in the social and political context of Indonesia. For individual groups of people, seven out of nine people agree with the regulation and implementation of a carbon tax, but some of them show caution by stating that they will continue to monitor whether this implementation provides benefits or vice versa. This reflects a positive attitude accompanied by a desire to see the concrete impact of this policy in the long term. There are also individual members of society who express their readiness to follow government regulations, but with the hope that the government will re-evaluate the need to implement a carbon tax in Indonesia. This attitude reflects the public's desire to involve themselves in decision-making and underlines the importance of continuously evaluating implemented policies.

Meanwhile, drivers agree with implementing the carbon tax, but they expect it will be implemented in stages or with a trial period. This shows concern and the need to understand the full impact of these policies in the context of their employment and the economy as a whole. Opinions from the informant from the Directorate General of Taxes and Tax Academic showed support for implementing a carbon tax but emphasized the need for broader and firmer policies. They highlighted that revenue from carbon taxes should be allocated to environmental conservation efforts and controlling natural damage.

From the results, it can be concluded that the interview regarding the description of the implementation of the carbon tax in Indonesia received support from the informant, but with the caveat that there was a desire to involve the public in evaluating the policy and ensuring that its impact was indeed in line with environmental preservation goals. Apart from that, understanding the gradual requirements and the existence of a trial period are also important factors in supporting the acceptance of this policy, especially from drivers. It is similar to research by Pamungkas & Haptari (2022), where in this research, the carbon tax must be able to consider which parties could be affected by price increases as a form of price signal for implementing the carbon tax. The study also stated that the carbon tax implemented in Indonesia will be imposed using a cap and tax scheme and integrated with a cap and trade scheme, where entities with emissions higher than the specified cap will get additional options.

Based on the results of the interview reduction, there were differences of opinion or various views related to the topic raised. The variety of responses was due to the diversity of



backgrounds and knowledge possessed by the informants. Thus, several conclusions can be drawn regarding the implementation of carbon tax in the social and political context of Indonesia. For individual groups, three out of five agree with the question that the imposition of a carbon tax will increase social inequality. They all stated in unison that imposing this carbon tax on all levels of society would only put additional pressure on the lower middle class. They argue that in this situation, middle and upper-class society will not feel too much pressure from the imposition of this carbon tax. The imposition of taxes on society without being balanced by the redistribution of tax income would only increase the social gap between people with high incomes and those with low incomes. The increase in energy prices due to imposing a carbon tax also affects low-income communities. After all, the majority of them spend their income only on energy. However, five individual informants from the community believed that the topic of the question could not be justified. This is because they consider the tax calculation fair based on the law. Act No. 7 2021 explains that the lowest tariff is IDR 30, which is still very low for the public.

Furthermore, looking at the views of two informants with backgrounds as drivers, their responses to this question were unclear, so we cannot conclude their views on the topic. Furthermore, the informant, an employee of the Directorate General of Taxes, expressed his opinion that this carbon tax cannot be directly imposed on the public. The imposition of this new tax will cause immediate rejection from the public. Public rejection of this policy is due to a lack of public confidence in the government's ability to manage tax revenues. Thus, the government finally implemented trials in certain sectors, namely the coal-fired power plant sector. Meanwhile, another informant with a background as a tax academic expressed his opinion that social inequality was a "trade-off" or something that would happen along with other events. Implementing this carbon tax will have impacts and consequences that must be borne.

From the interview results related to this question, it can be concluded that many informants considered that imposing a carbon tax would only increase social inequality and create resistance to this policy. It is in line with research conducted by Zhang and Baranzini (in Salim & Sidiq, 2022) regarding the implementation of the carbon tax in the UK, showing the results that the carbon tax in the UK places more of a burden on the lower middle class compared to the lower middle class which, in the end, will cause greater economic inequality. Public rejection of the carbon tax policy due to a lack of public trust is in line with Tjoanto & Tambunan (2022), with research that hundreds of entrepreneurs rejected implementing this carbon tax in Indonesia.

CONCLUSIONS

This research concludes that, on average, the research objects representing the people of DKI Jakarta agreed on the potential impact of implementing the carbon tax in Indonesia. These impacts include economic, social, and political aspects, as well as the positive and negative environment. Due to diverse backgrounds and knowledge, the public responds to the impacts of implementing the carbon tax in various ways. The public response consists of ways to overcome the impact of the carbon tax in the negative dimension, as well as supportive responses and proposals for policy improvements to the effects of the carbon tax in the positive dimension.

This research has several limitations, namely the lack of informants interviewed and the fact that the informants do not cover all areas affected by carbon tax, one of which is informants with a background in emitting companies. Future research is expected to reach more research objects from various backgrounds so that the validity of the research findings becomes stronger. In addition, it is hoped that data processing in research methods can be processed with



appropriate applications to produce better and more accurate analysis and research results. For example, in research using the same qualitative method, the coding process with the Nvivo application is recommended to make the data processing results more systematic. This research can be used as a consideration for the relevant governments, especially the Directorate General of Taxes, the Ministry of Finance, and the DKI Jakarta Provincial government, in preparing a carbon tax policy design whose mechanism not only achieves the goal of environmental sustainability but also produces benefits that reach all conditions of society, especially related to tax the subjects, tax objects, relevance of tax objects, and other policies that need to follow the carbon tax policy are under the findings of this research.

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