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Abstract

This paper examines the challenges faced by Indonesian businesses during the COVID-19 pandemic and assesses the efficacy of tax incentives in addressing these unprecedented issues. The research objectives include identifying the heterogeneity of obstacles, evaluating the role of tax incentives, and proposing evidence-based policy recommendations. In accordance with OECD (2012) and drawing on a representative sample of over 7,500 businesses across 34 provinces in Indonesia, this study employs a scale-based perception survey to investigate the efficacy of tax incentives. The findings uncover a diverse range of impediments, with reduced product demand emerging as the most pressing concern. Results suggest that larger businesses with a higher number of permanent employees tend to benefit more from tax incentives, underscoring the need for targeted incentives. Following Dunn (2018), our user-survey analysis reveals high interest in tax incentives across market share categories and revenue groups, indicating their perceived utility transcends these segments. Tax incentives exhibit a positive association with business performance during the pandemic, bolstering resilience and liquidity. The larger businesses demonstrated greater resilience during the pandemic. Nevertheless, businesses with mixed or international primary market shares do not produce statistically significant results, necessitating further exploration. Based on the findings, we propose the following policy recommendations: Implement tailored tax incentives catering to various business types, taking into account their industry and size; develop effective communication strategies to elucidate the benefits of these tax incentives; employ behavioural methodologies to design policies targeting specific business groups and enhance their participation levels; and conduct additional research to ascertain factors influencing resilience and barriers to tax incentives utilisation. By adopting these policy recommendations, policymakers can devise more targeted tax incentives supporting business resilience and economic recovery in Indonesia while addressing the dynamic impacts and risks faced by businesses amidst crises.

Keywords: COVID-19 crisis; tax incentives; cash adequacy; business performance; business resilience

JEL Classification: H25, H32, H53, M15.

1. INTRODUCTION

Extensive research has shown that the COVID-19 pandemic has had detrimental effects on businesses globally, impacting both the demand and supply sides. The demand side has been impacted by virus containment measures, including lockdowns and travel restrictions, as well as changes in consumer preferences. As a result, there has been a reduction in demand for goods and services provided by businesses that are deemed non-essential and require in-person physical interaction. These businesses include those in the accommodation, restaurant, entertainment, transportation, and tourism industries (Băhnăreanu, 2020; Chetty et al., 2020; Desai & Looze, 2020; ILO, 2020; Rio-Chanona et al., 2020; World Bank, 2020; Xiaojing, 2021; Das et al., 2022; Patil et al., 2022; UNCTAD, 2022a). In supply side, businesses experienced challenges such as constraints in the supply of raw and supporting materials (Băhnăreanu, 2020; Desai & Looze, 2020; ILO, 2020; World Bank, 2020; Paul & Chowdhury, 2021; Paul et al., 2021; Lopes et al., 2022; Raj et al., 2022; Hummel et al., 2023), higher production cost (ILO, 2020; Qin et al., 2020; UNCTAD, 2022a), constraints in product distribution (Paul et al., 2021; Lopes et al., 2022; Raj et al., 2022; UNCTAD, 2022b) and suboptimal business capacity (Ferreira dos Santos et al., 2020; Paul & Chowdhury, 2021; Raj et al., 2022). Both those demand and supply shocks have resulted in reduced operating revenue (Băhnăreanu, 2020; Chetty et al., 2020; Desai & Looze, 2020; ILO, 2020; Qin et al., 2020; World Bank, 2020; Engidaw, 2022) hence cash adequacy was compromised (ILO, 2020; Qin et al., 2020; World Bank, 2020). Meanwhile, business performance was also hindered due to the crisis (Fairlie, 2020; Fu & Shen, 2020; Shen et al., 2020).

To cushion the impacts of the shocks on businesses, governments around the world have enacted various measures, including fiscal support, with tax incentives playing a vital role within the support (OECD, 2021; World Bank, 2022). Since January 2020, global fiscal support dedicated to tackling the impacts of the COVID-19 pandemic had reached more than USD 17.6 trillion as of September 2021, with budgets for additional spending and foregone revenues accounting for USD 10.8 trillion—nearly two-thirds of that allocated support (IMF, 2021a).

Adopting a perception survey approach (OECD, 2012), we focused our attention on the role that tax incentives play in supporting business cash adequacy during the pandemic crisis and how their utilisation as well as the maintained cash adequacy level help to keep business performance from plummeting. In doing so, we employ four criteria (Dunn, 2018): responsiveness, appropriateness, effectiveness, and adequacy. We take this approach for two reasons. Firstly, supporting business cash-flow is a core goal of tax incentives in the early phase of the pandemic crisis (OECD, 2020a; World Bank, 2022). Assuring sufficient liquidity for businesses was the main goal of the short-term measures put in place in OECD and G20 nations (OECD, 2020a).

Secondly, preserving business performance constitutes a subsequent-phase objective of COVID-19 tax incentives (OECD, 2020a). Furthermore, business performance represents a crucial area that a country must maintain to minimise the lingering effects of the crisis and bolster economic recovery once the crisis is under control (IMF, 2021b). In addition, the aim of post-pandemic tax policy should encompass the recovery of the national budget, which had been utilised to finance government anti-COVID measures (OECD, 2020a). Maintaining the performance of businesses would be a reasonable and significant contribution towards achieving this long-term goal. Consequently, it is essential to ascertain whether a positive association exists between the utilisation of COVID-19 tax incentives and the performance level of businesses benefitting from them.

There exists a paucity of empirical research examining the efficacy of tax incentives in mitigating the financial liquidity and operational performance challenges faced by businesses due to the COVID-19 pandemic. Prior research has primarily concentrated on the impact of fiscal stimulus on businesses during the pandemic, with less emphasis on the role of tax incentives. This research attempts to fill the gap by assessing the efficacy of tax incentives during the pandemic crisis in Indonesia based on survey evidence. To the best of our knowledge, this research is one of the first attempts to use a large set of survey data acquired from a nationwide survey covering all provinces and business sectors to investigate challenges faced by businesses during the pandemic crisis and how they perceived the efficacy of tax incentives they had used in supporting cash adequacy and performance level. Adopting perception survey, the present

study examines tax incentives which include four types: (i) wages tax (Article 21 Income Tax) borne by the government, (ii) exemption of income tax on imports (Article 22 Income Tax), (iii) reduction of income tax monthly instalment (Article 25 Income Tax), and (iv) accelerated value added tax (VAT) refund.[1]

This paper contributes to three domains. Firstly, it offers insights into diverse business obstacles encountered during the pandemic, as observed across various regions, scales of operation, and sectors. A correspondence analysis, grounded in survey data, is utilized to gain a more profound comprehension of the relationship between business impediments and heterogeneous aspects. Secondly, this investigation evaluates the perceived efficacy and renewed interest in each of the four tax incentives under study, as observed across different regions, scales of operation, workforce size, and primary market segments. Thirdly, this research presents empirical evidence on the correlation between the utilisation of tax incentives, liquidity adequacy, and business performance by implementing multiple regression analysis and analysis of variance (ANOVA) on the survey data.

This study reveals that the decline in product demand constitutes the most significant obstacle encountered by businesses, with the issue of diminished operational capacity due to the implementation of health protocols varying among sectors, particularly impacting the accommodation and food service industries. Our findings indicate that the majority of businesses perceive all four tax incentives examined in this study as 'highly beneficial' or 'beneficial,' and concurrently express their interest in re-participating in the same tax incentive programmes in the future. However, the perceived efficacy of tax incentives is contingent upon the size and nature of the business. Lastly, this study shows that the utilisation of tax incentives exhibits a positive correlation with business performance and liquidity during the pandemic. Businesses utilising tax incentives experienced enhanced performance and augmented liquidity. Nonetheless, businesses with mixed or international primary market shares do not display statistically significant results, necessitating additional research to explore factors influencing their resilience and potential impediments to tax incentive utilisation. From a policy standpoint, these findings provide essential insights for policymakers to refine the design of tax incentives during times of crisis and dwindling fiscal space.

The remainder of this paper is arranged as follows. Section 2 presents the literature review. Section 3 outlines the data and empirical strategy. Section 4 delivers the results and discussions. Section 5 concludes the paper and offers policy recommendations.

2. LITERATURE REVIEW

2.1. Business hindrances amidst the COVID-19 pandemic

Several studies reveal that the degree of challenges faced by businesses during the COVID-19 pandemic varies depending on the heterogeneity in sector, scale, and location (Chetty et al., 2020; ILO, 2020; Rio-Chanona et al., 2020; Shen et al., 2020; Engidaw, 2022; World Bank, 2022). Regarding the business sector, for example, the entertainment, restaurant, and tourism industries experienced huge shocks in both supply and demand sides amidst the crisis (Rio-Chanona et al., 2020). In terms of business scale, small and medium-sized enterprises (SMEs) experienced significant adverse effects from the pandemic (UNDP, 2020; Clampit et al., 2021).[2] Prior research also show that small businesses tend to have lower resilience and higher exposure to economic shocks than larger firms (Kolasa et al., 2010; Kennickell et al., 2017). Furthermore, Shen et al. (2020) suggest that the negative impact of the COVID-19 pandemic on the income and performance of companies in China with a smaller investment scale or turnover was getting worse, relative to companies with a larger investment scale or turnover. With respect to business location, Chetty et al. (2020) find that the income of small businesses in more advanced regions of the United States was

[1] These incentives were initially enacted by the Indonesian Minister of Finance Regulation (MoF Reg.) Number 23 of 2020 and amended several times. Their main objective, among others, is to support cash liquidity of businesses during the pandemic crisis.

[2] Note that the terms SME (and MSME) are defined differently, and there is no international consensus. In Indonesian context, Government Regulation Number 7 of 2021 regarding Ease, Protection, and Empowerment of Cooperatives and Micro, Small, and Medium Enterprises classifies businesses with annual turnover between IDR 2 billion and 15 billion as 'small' businesses, and businesses with annual turnover between IDR 15 billion and 50 billion as 'medium' businesses. As of 29 April 2023, IDR 1 billion equals roughly USD 68,149.

affected more by the COVID-19 pandemic relative to that faced by small businesses in more underdeveloped regions. This occurs because high-income consumers, who incidentally live in more developed areas, have significantly reduced their spending rates relative to those with less income (Chetty et al., 2020).

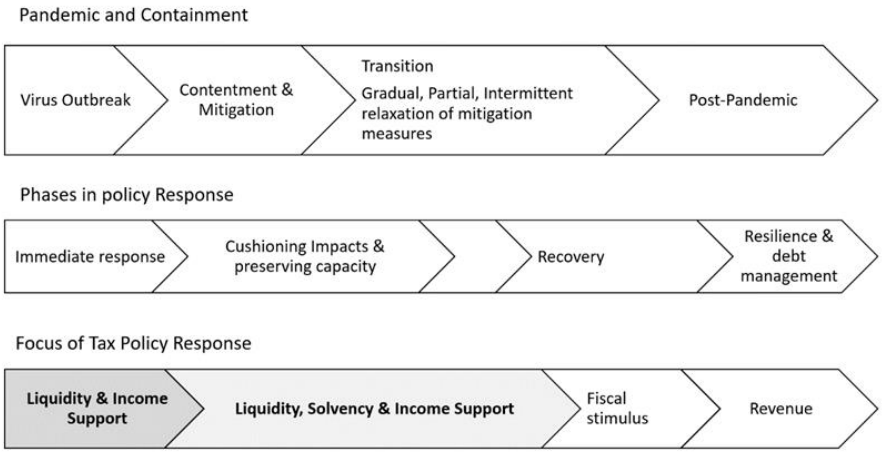
Meanwhile, a survey-based study focusing on the Indonesian context show that SMEs therein experienced significant impediments due to the crisis, which prevented more than half of their employees from working (UNIDO, 2020). This caused a reduction in business operations due to the interruption of value chains and logistics. The shortage of cash flow was the main operational problem reported by SMEs, which was related to the inability to process and complete consumer orders (UNIDO, 2020). Furthermore, SMEs encountered challenges in fulfilling their contractual commitments with other businesses. The survey revealed that 81% of respondents expected a year-on-year revenue loss of more than 50%, resulting in severe liquidity shortages and possible staff cuts (UNIDO, 2020).

Another survey-based research conducted in Indonesia finds that more than 45% of micro, small, and medium enterprises (MSMEs) encountered challenges in obtaining raw materials (UNDP, 2020). The pandemic also reduced the demand for their products, as reported by nine out of ten MSMEs. Furthermore, most of the MSMEs encountered challenges in distributing their products due to the pandemic (UNDP, 2020). In terms of revenue for MSMEs during the pandemic, around two-thirds of the MSMEs suffered a drop in revenue, while more than 80% observed lower profit margins during this crisis and around 53% noticed a decrease in asset value (UNDP, 2020). ADB (2021) also finds that after reopening their business activities in 2021, MSMEs witnessed a sustained decrease in demand and revenue. MSMEs coped with the severe cash crisis but encountered a rise in working capital shortfalls in 3 to 6 months (ADB, 2021).

2.2. Tax incentives roles amidst the COVID-19 pandemic

The roles of tax policies in reducing the impacts of the pandemic tend to change from one phase to the next over the course of the pandemic as illustrated in Figure 1. In the first phase of the COVID-19 pandemic, marked by restrictions on societal activities and acute disruptions to both the economy and health aspects, tax incentives were provided to provide additional cash flow to businesses and households to prevent a total economic collapse (Collier et al., 2020; Devereux et al., 2020; OECD, 2020a). This was because the fiscal policies taken during the early stages of the crisis were aimed at absorbing the short-term negative impacts of the crisis (Alberola et al., 2021). The postponement of tax payments has surfaced as the principal tax measure for reinforcing business cash flow throughout OECD and G20 nations. A 75% majority of countries within the OECD and G20 have introduced tax payment deferrals (OECD, 2020a).

FIGURE-1: Policy stages during and after the COVID-19 outbreak



Source: OECD (2020a, p. 10)

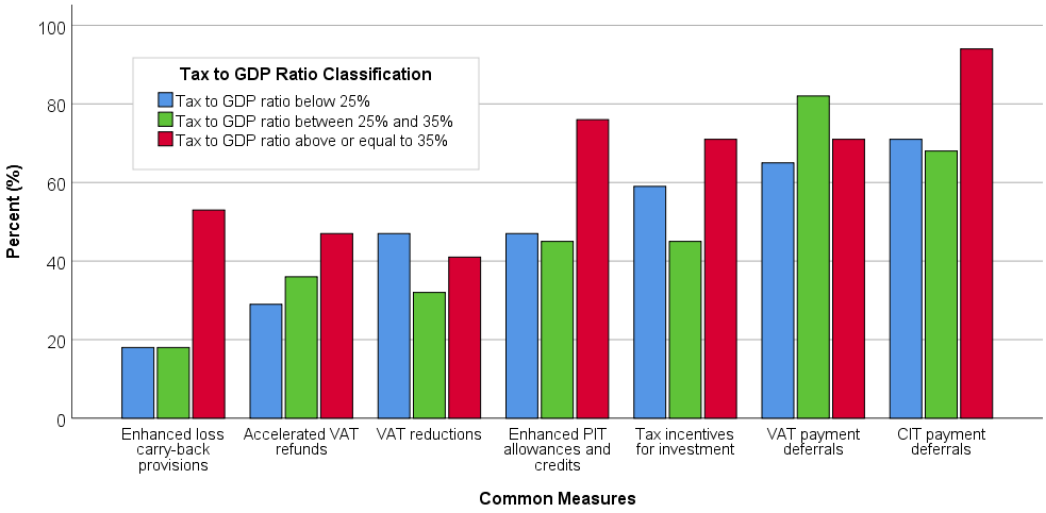
In the second phase, characterized by the lifting of lockdown policies and the emergence of signs of recovery, similar tax incentives still need to be given, supplemented by tax incentives to stimulate demand

and supply (Collier et al., 2020; Devereux et al., 2020; OECD, 2020a). In the third phase—i.e., the long-term phase, tax policies need to be dominated again by their traditional function of collecting national revenue. In fact, tax policies in the post-pandemic phase can be aimed at collecting revenue to compensate national spending in mitigating the impact of the pandemic (Collier et al., 2020; OECD, 2020a).

In general, the types of tax incentives provided amidst the pandemic crisis can be divided into three categories. The first category is incentives for business support, including accelerated asset depreciation, longer time for losses compensation, deductibility expansion to cover company expenses related to the pandemic measures, tax rate reductions, deferred submission deadlines for tax returns, deferred tax payments and tax penalties, as well as accelerated tax refunds. The second category is incentives for household support, which generally have similar types of incentives as those in the business support category but for the purpose to help households. The third category is incentives for health sector support, with the most commonly used types being tax rate temporary reductions or tax exemptions for import taxes on health equipment and tax incentives for healthcare workers (OECD, 2020b; Sen, 2021; World Bank, 2021). The more innovative a country is in developing its tax incentives policy, the more quickly that country is to recover from economic recession (ADB, 2020).

In particular, as Figure 2 shows, tax incentives to defer both Corporate Income Tax (CIT) payments and VAT payments have been mostly used by countries, whether in the low (tax-to-GDP ratio below 25%), medium (tax-to-GDP ratio between 25% and 35%), or high (tax-to-GDP ratio above or equal to 35%) tax-ratio groups. This indicates that the primary focus of tax incentives worldwide, especially in the early phase of the pandemic, was to help business liquidity. Therefore, it is an intriguing question to know whether the provision of tax incentives helps businesses and whether there is a positive correlation between the utilisation of COVID-19 related tax incentives and business cash adequacy.

FIGURE-2: Variation of tax measures by categories of countries' tax-to-GDP ratio



Source: Modified from OECD (2021, p. 34)

2.3. Provision of tax incentives during the COVID-19 crisis in Indonesia

In the early months of 2020, amidst the rapid escalation of the global outbreak, the Indonesian government promptly addressed the challenges posed by COVID-19 through the implementation of extensive stimulus packages. The initial measures included the provision of tax incentives, which were introduced in March 2020.[3] In line with global trends, the primary objectives of tax incentives in the Indonesian context during the COVID-19 pandemic focused on providing 'business liquidity support.' This support encompassed offering cash-flow assistance and aiding businesses in maintaining solvency. Meanwhile, the secondary

[3] It is worth noting that the first cases of COVID-19 in Indonesia were confirmed on March 2, 2020. It was declared a pandemic in Indonesia on March 30, 2020, with the issuance of Presidential Decree Number 11 of 2020.

policy objectives aimed at delivering household income support by introducing supplemental income assistance through tax cuts for affected workers (Arsal et al., 2022). These tax incentives include: (i) exemption of wages tax (Article 21 Income Tax) for employees who work in certain industries and have a gross income of up to IDR 200 million per year, (ii) exemption of income tax on imports (Article 22 Income Tax) for certain industries importing goods for manufacturing purposes, (iii) reduction of corporate income tax monthly instalment (Article 25 Income Tax) by 50% for certain industries, (iv) acceleration of VAT refund for certain industries, (v) exemption of special-regime income tax for taxpayers with a gross turnover of up to IDR 4.8 billion per year (MSMEs), and (vi) exemption of special-regime income tax for taxpayers who are the recipient of Programme to Accelerate Irrigation Water Use Improvement (P3-TGAI).

As of the end of 2020, as Table 1 shows, there are four types of incentives with a realised value exceeding IDR 1 trillion. While the incentive for special-regime income tax for MSMEs has the highest number of beneficiaries, its realised value falls below IDR 1 trillion. For this reason, the present study will focus on the first four types of incentives with a realised value of more than IDR 1 trillion.[4]

TABLE-1: Utilisation of tax incentives for taxpayers impacted by the COVID-19 pandemic during the fiscal year 2020 in Indonesia

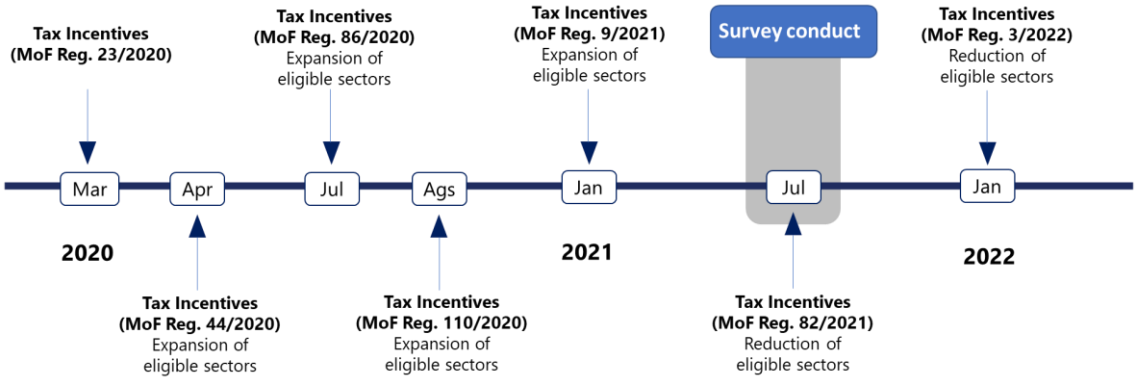
No.	Incentive Type	Number of Beneficiary Taxpayers	Incentives Amount (IDR trillion)
1	Reduction of corporate income tax instalment (Art. 25) by 50%	66,682	20.6
2	Exemption of income tax on imports (Art. 22)	14,941	13.6
3	Acceleration of VAT refund	3,980	7.6
4	Exemption of wages tax (Art. 21)	131,889	3.5
5	Exemption of special-regime income tax for MSMEs	248,275	0.8
6	Exemption of special-regime income tax for recipients of P3-TGAI	2,742	0.3

Source: DGT (2021)

The government had extended the COVID-19 tax incentives in 2021 under the National Economic Recovery (Pemulihan Ekonomi Nasional/PEN) Programme, with a broader scope to expedite the revival of the domestic economy. For instance, the Article 21 Income Tax incentive was initially provided to only 440 sectors in March 2020, before being expanded to 1,062 and 1,089 sectors in April and August 2020, respectively. Regarding the Article 22 Income Tax incentive, a mere 102 sectors were granted access in March 2020, followed by 431 and 721 sectors in April and August 2020, respectively. As for the Article 25 Income Tax incentive, only 102 sectors initially benefited in March 2020, with the number increasing to 846 and 1,013 sectors in April and August 2020, respectively. Lastly, the accelerated VAT refund incentive was initially offered to only 102 sectors in March 2020 and subsequently extended to 431 and 721 sectors in April and August 2020, respectively. An overview of the issuance timeline for regulations concerning COVID-related tax incentives in Indonesia and the timing for the survey conduct of this study is provided in Figure 3.

[4] Another factor to consider is the mutual exclusivity between exemption of special-regime income tax for MSMEs incentive and reduction of corporate income tax instalment (Art. 25) incentive. This implies that the utilisation of the former incentive by a business precludes the utilisation of the latter incentive. In this instance, for the purpose of this study, priority is given to the latter incentive due to its highest realisation value among the incentives.

FIGURE-3: Enactment of Minister of Finance Regulations (MoF Reg.) pertaining to tax incentive measures amidst the COVID-19 pandemic in Indonesia



Note: This scheme displays a timeline of the development of tax incentives programme from 2020 to early 2022. This programme was initially enacted by the Minister of Finance Regulation No. 23 in March 2020, when the first COVID-19 cases emerged in Indonesia. As shown in Figure 3, during 2020, this programme underwent three changes (in the months of April, July, and August). In 2021, the programme underwent two changes before being re-revised in early 2022. We conducted the survey in July 2021.

Source: Authors' depiction

2.4. Perception survey

There exist various methodologies to evaluate public programmes (Khandker et al., 2010). Quantitative methods, such as survey data collection or simulations, can be utilised to conduct evaluation approaches either prior to or after the implementation of a programme.[5] In this sense, perception surveys have gained prominence in OECD nations for evaluating the efficacy of regulatory initiatives (OECD, 2012). Perception surveys are primarily employed in the evaluation and design of regulatory policies, serving as a diagnostic tool to identify the concerns of businesses and citizens and subsequently inform future reforms. For instance, Canada's survey investigates the impact of governmental efficiency measures on businesses regarding time and cost savings, as well as the ease of administrative form processing through regulatory compliance cost assessments (OECD, 2012). According to the OECD (2012), perception surveys serve three fundamental purposes: (1) evaluating the efficacy of regulatory initiatives from the user perspective; (2) gathering data on awareness, confidence, interest, and recognition of regulatory obligations, policy initiatives, and entities among both public and private sector actors; and (3) operating as a diagnostic and communicative instrument, pinpointing salient issues for citizens and businesses to promote future regulations.[6]

The survey method has become a prominent instrument for examining modern society—often referred to as a 'societal telescope' (Heeringa et al., 2010), and its use in tax research is prevalent (McKerchar, 2012). Surveys are widely employed for data collection (Sarantakos, 2013) and offer a valuable method to assess the prevalence of attitudes, beliefs, and behaviours within a specific population of interest (Weisberg, 2008). Survey research is a commonly used approach in descriptive research (Saris & Gallhofer, 2014). It presents the distribution of responses from individuals on specific questions, encompassing topics such as satisfaction with the economy, government, and functioning of democracy (Saris & Gallhofer, 2014). In this sense, perception surveys can contribute to enhancing transparency in the policymaking process by actively involving stakeholders in the assessment of tax incentives during the COVID-19 pandemic. This can foster trust in the government's efforts to address the economic challenges faced during the crisis and promote a sense of shared responsibility among stakeholders.

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[5] The ex-ante evaluation method involves the use of data prior to programme intervention to predict programme impacts, while ex-post evaluation method evaluates programme outcomes after implementation (Khandker et al., 2010).

[6] For these reasons, questionnaires in a perception survey typically serve one or more of three purposes: (1) evaluation, in which questions are designed to assess specific regulations or the effectiveness of regulatory reform initiatives; (2) awareness measurement, which evaluates the understanding of regulations, programmes, and regulatory bodies among businesses and citizens; and (3) diagnostic capacity, where perception surveys identify areas of concern for the public or stakeholders, informing and facilitating future regulatory initiatives (OECD, 2012).

Like those in the field of social science, in perception surveys, scales are used to extract data pertaining to values, attitudes, and intentions (Häder, 2008). A survey is deemed an effective method for gathering information regarding self-reported behaviour and beliefs. These surveys typically consist of enquiries that pertain to the 'what', 'when', and 'how' aspects, delineating the population and/or clarifying the observed phenomena (McKerchar, 2012). In the area of public policy analysis, this evaluative method is termed as 'user-survey analysis' (Dunn, 2018). Considered as a fundamental aspect in the execution of evaluability assessments, a user-survey analysis is a series of systematic techniques aimed at gathering data on the evaluability of a policy or programme from its intended users and other relevant stakeholders (Dunn, 2018). In doing so, several international studies (such as those in Australia, Korea, the Netherlands, New Zealand, and the United Kingdom) employ scale-based approaches to measure the perceptions of respondents (OECD, 2012). Most perception surveys targeted businesses, with sample sizes varying from 15 to over 10,000 respondents (OECD, 2012).[7] Following this, the sample size and the use of a scale-based approach in this study are discussed in the next section.

3. METHODOLOGY

3.1. Data

Survey research is a suitable method to assess the impact of a disruption, such as the lockdowns caused by the COVID-19 crisis (Ridhwan et al., 2023), as well as the benefits of the provision of tax incentives. In response, this study uses a national survey to collect primary data from a representative sample of 7,528 Indonesian businesses across various regions, sizes, and sectors. The survey was conducted online by sending electronic mail to the business taxpayers, including an invitation survey link. This survey employed probabilistic sampling methods—i.e, a stratified random sampling approach—and maintained anonymity—respondents were not asked any questions related to individual or entity identities.[8] The population element of this survey consisted of businesses classified as strategic taxpayers, spread across 352 tax offices in 34 provinces throughout Indonesia.[9] In 2021, the total number of strategic taxpayers in Indonesia was estimated at around 256,000, consisting of 211,000 corporate taxpayers and 45,000 individual taxpayers. These strategic taxpayers significantly contributed to the nation's tax revenue, accounting for 81% in the fiscal year 2021 and 78% in the fiscal year 2022, respectively.

The survey was conducted over a two-week period (from July 12th to July 30th, 2021).[10] In terms of timing, this survey was conducted more than one year (i.e., 16 months) after the Indonesian government issued the first regulation on COVID-19 tax incentives in March 2020. For this reason, we believe that conducting the survey in July 2021 provided sufficient time for businesses to offer their perspectives or evaluations of the incentives they had used.

This survey was part of the work carried out by the National Economic Recovery Programme Revenue Working Group (Pokja Penerimaan PEN) of the Ministry of Finance of the Republic of Indonesia. A significant proportion of survey participants occupied decision-making or managerial positions, while only approximately 37% (n = 2,767) of the respondents were staff members. Around 24% of the participants held director-level positions (n = 1,837), roughly 24% held managerial positions (n = 1,779), and approximately 13% were business owners. The smallest fraction of respondents held commissioner-level positions (2%; n = 153) (see Appendix 1 for the details of respondents' occupations). These findings imply that the survey primarily captured responses from high-level decision makers and managers, with

[7] For example, Sweden's 'Regulation Barometer' survey engaged 600 entrepreneurs and business leaders, whereas the Canadian Federation of Independent Business (CFIB) survey included 10,566 small and medium-sized business owners (OECD, 2012).

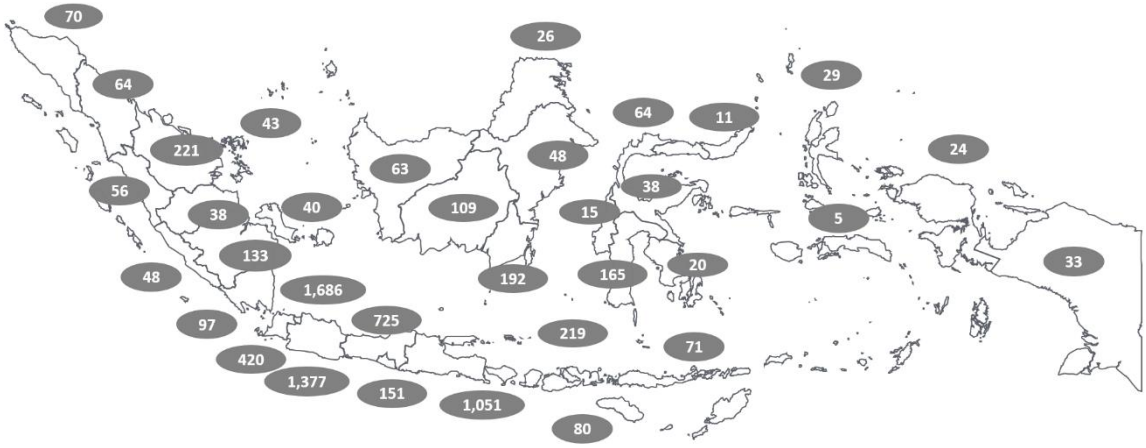
[8] Probabilistic sampling methods are considered to be the most rigorous approach (Gertler et al., 2016). In this study, stratified random sampling involves the division of a population into distinct subgroups, such as tax office levels, followed by the application of random sampling techniques within each subgroup. Consequently, each unit within a given group (or stratum) possesses an equivalent likelihood of being selected.

[9] The term 'strategic taxpayers' refers to individual and corporate taxpayers registered at the Large Taxpayer Office (LTO), Medium Tax Office (MTO) and Special Tax Office, and taxpayers with specific criteria—generally related to the size of tax payments—registered at the Small Tax Office (STO). In general, there are approximately 300 to 500 strategic taxpayers in each STO. Consequently, the term 'businesses' in this study refers exclusively to those entities administered within the Indonesian taxation system.

[10] Recall also Figure 3 with respect to the timeline for tax incentive provision and the survey conduct.

relatively fewer responses from staff-level employees. The results of the representativeness tests also indicated that the survey respondents were an excellent representation of the target population, both in terms of business location distribution and annual revenue distribution (see Appendix 2 for the representativeness tests). The national distribution of survey respondents by province is shown in Figure 4.

FIGURE-4: Distribution of survey respondents by province (n = 7,528)



Note: This map provides a detailed representation of the distribution of survey respondents across the 34 provinces of Indonesia. The data gathered from the survey reveal that a substantial number of respondents were concentrated on the island of Java, constituting an overwhelming majority of 72% (n = 5,410). In contrast, a smaller proportion of participants hailed from other regions, with 12% (n = 906) based in Sumatra, 6% (n = 438) in Kalimantan, and 5% (n = 370) in Bali-Nusa Tenggara, as well as Sulawesi, respectively. A mere 1% (n = 91) of the sample population was distributed in the Papua-Maluku area.

Source: Authors' calculation

Drawing on some works of Chetty et al. (2020), Fairlie (2020), and Shen et al. (2020), this study specifically examines several variables of interest, namely: businesses location, tax incentive utilisation status, number of permanent employees, primary market share, average annual sales before the COVID pandemic, comparison of business activities, adequacy of the business cash flow, major business hindrances, main strategies in maintaining the sustainability of business performance, perceived benefit of tax incentives, and the level of interest in re-utilising tax incentives. Wherever applicable, we adopt scale-based approaches to measure perceptions of respondents. The survey questions and answer options used are available in Table 2.

Questionnaire surveys offer the advantage of being completed at the convenience of the respondent while maintaining standardisation, consistency, and minimising variation (Sarantakos, 2013). In the context of any survey data, the accurate interpretation of respondents' feedback is essential to ascertaining the veracity of the findings (Vaus, 2014). This is because the implementation of survey research inherently presents certain methodological issues.[11] Thus, it is easy to conduct a survey that yields insignificant or deceptive outcomes (Neuman, 2014). It is also important to recognise that, in certain instances, identical responses could convey divergent meanings or vice versa, potentially introducing measurement inaccuracies. To address this concern, we have implemented measures to guarantee the validity and reliability of the survey questions and response alternatives employed in our research.[12]

[11] The method in which data is collected through surveys can have an impact on the responses received, as there is a possibility of response bias emerging in telephone and personal interviews. This is particularly true when sensitive topics are being discussed (Wiseman, 1972).

[12] Conducting pilot studies to identify potential flaws in survey design is essential (OECD, 2012). Before administering the questionnaire, we tested the survey on a small sample to understand participants' interpretations and responses. This process allowed for the identification and resolution of design issues, such as ambiguous questions, ultimately improving the quality of the survey outcomes.

TABLE-2: Overview of survey questions and available responses

No	Survey question	Available responses	Scale
1	Respondent position or job title	(i) Owner (of a private business); (ii) Staff; (iii) Manager or equivalent position; (iv) Director or equivalent position; (v) Commissioner or other supervisory position	Nominal
2	Business location	(i) Sumatra; (ii) Java; (iii) Sulawesi; (iv) Kalimantan; (v) Bali-Nusa Tenggara; (vi) Papua-Maluku	Nominal
3	Utilisation of tax incentives in 2021	(i) Yes; (ii) No	Nominal
4	The number of permanent employees	(i) 1 person; (ii) 2 - 10 employees; (iii) 11 - 50 employees; (iv) 51 - 100 employees; (v) 101 - 250 employees; (vi) 251 - 500 employees; and (vii) › 500 employees	Ordinal
5	Primary market share	(i) Domestic; (ii) Foreign; (iii) Mixed (domestic and foreign)	Nominal
6	The average annual sales before the COVID-19 pandemic (in billion IDR)	(i) ‹ 5 billion; (ii) 5 billion – 10 billion; (iii) 10 billion – 25 billion; (iv) 25 billion – 50 billion; (v) 50 billion – 100 billion; (vi) › 100 billion[13]	Ordinal
7	The adequacy of the business cash flow compared to operational expenses	(i) Insufficient (negative cash flow); (ii) Somewhat adequate (0-3 months); (iii) Adequate (3-6 months); (iv) Highly adequate (more than 6 months)	Ordinal
8	Comparison of business activities in the first semester of 2021 vs. 2020	(i) Decreasing › 30%; (ii) Decreasing up to 30%; (iii) Not change; (iv) Increasing up to 30%; (v) Increasing › 30%	Ordinal
9	The most challenging difficulty that affected business activities during the first semester of 2021	(i) The high production cost; (ii) A decrease in product demand; (iii) Constraints in product distribution; (iv) Constraints in the supply of raw and supporting materials; (v) Suboptimal business capacity due to the implementation of health protocols	Nominal
10	The main strategy in maintaining the sustainability of business activities	(i) Increasing product sales; (ii) Decreasing product prices; (iii) Employment reorganisation (number of employees, working hours, and salary); (iv) Creating new products based on market demand; (v) Closing one or more divisions for efficiency reasons; (vi) Tightening production costs (raw materials, auxiliary materials, overheads)	Nominal
11	The benefits of the Article 21 Income Tax incentive	(i) Not utilising; (ii) Very Not Beneficial; (iii) Not Beneficial; (iv) Uncertain; (v) Beneficial; (vi) Very Beneficial	Nominal / Ordinal
12	The benefits of the Article 22 Income Tax incentive	(i) Not utilising; (ii) Very Not Beneficial; (iii) Not Beneficial; (iv) Uncertain; (v) Beneficial; (vi) Very Beneficial	Nominal / Ordinal
13	The benefits of the Article 25 Income Tax incentive	(i) Not utilising; (ii) Very Not Beneficial; (iii) Not Beneficial; (iv) Uncertain; (v) Beneficial; (vi) Very Beneficial	Nominal / Ordinal
14	The benefits of the accelerated VAT refund incentive	(i) Not utilising; (ii) Very Not Beneficial; (iii) Not Beneficial; (iv) Uncertain; (v) Beneficial; (vi) Very Beneficial	Nominal / Ordinal
15	Interested in re-utilising the Article 21 Income Tax incentive in the future	(i) Very Uninterested; (ii) Uninterested; (iii) Uncertain; (iv) Interested; (v) Very interested	Ordinal
16	Interested in re-utilising the Article 22 Income Tax incentive in the future	(i) Very Uninterested; (ii) Uninterested; (iii) Uncertain; (iv) Interested; (v) Very interested	Ordinal
17	Interested in re-utilising the Article 25 Income Tax incentive in the future	(i) Very Uninterested; (ii) Uninterested; (iii) Uncertain; (iv) Interested; (v) Very interested	Ordinal
18	Interested in re-utilising the accelerated VAT refund incentive in the future	(i) Very Uninterested; (ii) Uninterested; (iii) Uncertain; (iv) Interested; (v) Very interested	Ordinal

Source: Authors' depiction

[13] As of March 2023, IDR 5 billion is currently around USD 347,500; IDR 10 billion is currently around USD 695,000; IDR 25 billion is currently around USD 1.74 million; IDR 50 billion is currently around USD 3.48 million; and IDR 100 billion is currently around USD 6.95 million.

Questions 7 and 8 in Table 2, which enquire about our primary variable of interest—i.e., the extent to which respondents' firms confronted liquidity issues and business operations, provide an example of the potential danger of misinterpreting survey findings. The question asks respondents to rate the cash sufficiency of their companies as inadequate, slightly adequate, adequate, or extremely adequate. That is, it is conceivable that respondents may interpret these categories in a variety of ways, which might result in measurement inaccuracies. This issue highlights the need to structure survey questions and possible responses in a way that minimises potential misunderstandings and assures data quality.

Although it may be challenging to eliminate the potential for variability in survey responses,[14] there are specific techniques that can be implemented to mitigate this concern. An approach that is commonly employed involves the examination of response patterns to identify any inconsistencies or discrepancies (Vaus, 2014). The present study employs a descriptive approach to examine the response patterns pertaining to cash adequacy and business performance levels, as they relate to the occupational status of the respondents. The findings of our study reveal a consistent pattern of responses among participants from various professional backgrounds. Confirming our representativeness assessments, our descriptive examination indicates that comparable proportions of responses are obtained from various occupational categories, suggesting that the respondents possess a relatively uniform comprehension of the enquiry. The comprehensive results of this analysis are outlined in Appendix 3.

3.2. Empirical strategy

We commence by addressing the necessity for descriptive analysis and presenting the conceptual framework of our study, followed by a detailed elaboration of our statistical approach. Policy analysis inherently involves a descriptive component (Dunn, 2018) and is rooted in traditional social science disciplines, aiming to describe and clarify the origins and consequences of policies (Neuman, 2014; Dunn, 2018). Utilising a perception survey (OECD, 2012), this study primarily focuses on the latter aspect: providing a description of the efficacy and the relationship between tax incentives and business resilience during the COVID-19 pandemic in Indonesia.

In this context, we employ an applied research approach (Neuman, 2014) and concentrate on four criteria (Dunn, 2018, p. 333) to assess the efficacy of tax incentives: (i) appropriateness, which examines whether desired outcomes (objectives) are indeed valuable or worthy; (ii) responsiveness, which determines whether policy outcomes meet the needs, preferences, or values of specific groups; (iii) effectiveness, which evaluates if a valued outcome has been achieved; and (iv) adequacy, which assesses the extent to which the achievement of a valued outcome resolves the problem. To facilitate a clearer understanding, Figure 5 illustrates the conceptual framework of this study.[15]

The use of appropriate statistical methods is essential for answering research questions and ensuring the validity of the findings. For this reason, as shown in Figure 5, we employ various statistical methods to analyse the data, starting with descriptive statistics to organise and summarise the data and then utilising correspondence analysis (CA), multiple regression analysis, and analysis of variance (ANOVA) to explore and to confirm the association of using tax incentives with the level of cash adequacy and business performance during the pandemic.

Following the OECD's (2020a) area of concern, we use two measures as proxies to assess the business situation of the respondents during the crisis. These are: (1) cash adequacy, i.e., how well the current cash flow covers respondents' operational or production costs; and (2) business performance, i.e., the comparison of respondents' business activity during the first half of 2021 with that of 2020. These self-reported proxies offer a valuable approach to examining the varying degrees of cash adequacy and business performance during the pandemic.

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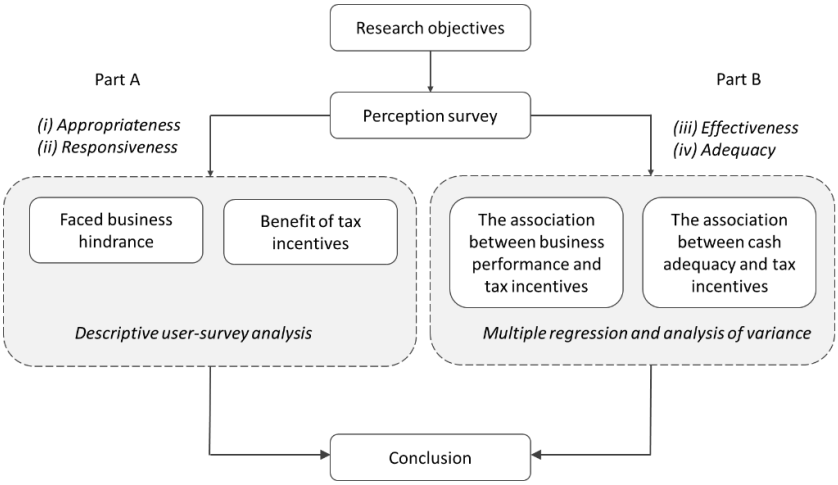
[14] This is because survey respondents may sometimes exhibit deceptive behaviour to advance personal interests or create a positive image. Businesses could overstate regulatory burdens to provoke government action, while participants may provide responses adhering to social norms, particularly in face-to-face interactions (OECD, 2012).

[15] Note that according to Dunn (2018), there are six criteria that can be used to evaluate public policy: effectiveness, efficiency, adequacy, equity, responsiveness, and appropriateness. Due to the availability of the survey data, we only focus on four criteria.

FIGURE-5: Conceptual framework of the study



Note: Following Dunn's (2018) criteria, Part A of the diagram addresses two aspects: appropriateness and responsiveness. Appropriateness is crucial to ascertain whether the desired outcomes (objectives) are indeed worthy or valuable, while responsiveness is important to ensure policy outcomes satisfy the needs, preferences, or values of specific groups. Part B deals with two other criteria: effectiveness and adequacy. Effectiveness must be assessed to determine if a valued outcome has been achieved, while adequacy should be examined to understand the extent to which the valued outcome resolves the problem.

Source: Authors' depiction

Following the descriptive analysis, this study employs multiple regression models to investigate the association between the use of tax incentives, cash adequacy, and business performance during the COVID-19 pandemic. The dependent variable is the self-reported comparison of business activities in the first half of 2021 with those in 2020. The main model uses the entire survey sample, while the other models use subsamples based on the primary market share of respondents (domestic, mixed, and export).

The models include several explanatory variables to control for time and other possible effects, such as size, region, year, sector, number of employees, hindrances to business operations, and business strategies. By including these control variables, we can account for potential confounding factors and better understand the effects of tax incentives utilisation on business performance during the pandemic. Considering ordinary least square (OLS) regression as one of the most prevalent approaches for approximating unobserved parameters in linear regression models (Heeringa et al., 2010), we estimate the comparison of business performance in the first half of 2021 with those in 2020 as follows:

$$\text{Business performance} = \beta 0 + \beta 1\,(\text{tax incentive effects}) + \beta 2\,(\text{cash adequacy effects}) + \beta 3\,(\text{size effects}) + \beta 4\,(\text{regional effects}) + \beta 5\,(\text{year effects}) + \beta 6\,(\text{sector effects}) + \beta 7\,(\text{number of employees}) + \beta 8\,(\text{regional effects}) + \beta 9\,(\text{sector effects}) + \beta 10\,(\text{business hindrance effects}) + \beta 11\,(\text{business strategy effects}) + \beta 12\,(\text{primary market effects})$$

where, tax incentive effects: tax utilisation dummy (with non-utilising tax incentives being the omitted category); cash adequacy effects: the current adequacy of cash flow in relation to operational or production costs dummy (i.e., insufficient (negative cash flow), somewhat adequate (0-3 months), adequate (3-6 months), and highly adequate (more than 6 months) with insufficient (negative cash flow) being the excluded category). Size effects are two ordinal variables indicating the annual sales turnover and the number of employees.

Regional effects are dummy for the main islands (Sumatra, Java, Kalimantan, Sulawesi, Bali-Nusa Tenggara, and Papua-Maluku, with Sumatra being the omitted category). Year effects are the dummy variable denoting the year the business is established (before 1980, 1980–1990, 1990–1995, 1996–2000, 2001–2005, 2006–2010, 2011–2015, 2016–2020, with before 1980 being the omitted period), while sector effects are business sector dummy (wholesale and retail trade; constructions; manufacturing; other

services activities; financial and insurance activities; transportation and storage; business services; information and communication; agriculture, forestry and fishing; human health and social work activities; mining and quarrying; real estate activities; accommodation and food service activities; electricity and gas; education; water supply, sewerage, waste management and remediation activities; with wholesale and retail trade being the omitted sector).

Business hindrance effects are dummy variables for the biggest hindrances for business operations: the high production cost, a decrease in product demand, constraints in product distribution, constraints in the supply of raw materials and supporting materials, and suboptimal business capacity due to the implementation of health protocols, with the high production cost being the omitted category. Business strategy effects are the dummy variables denoting the main strategies in maintaining the sustainability of business activities. These include increasing product sales, decreasing product prices, employment reorganisation (number of employees, working hours, and salary), creating new products based on market demand, closing one or more divisions for efficiency reasons, tightening production costs (raw materials, auxiliary materials, overheads), with increasing product sales being the omitted strategy. Finally, primary market effects are the primary market share dummy: domestic, mixed (domestic and overseas), and overseas, with domestic being the omitted category.

4. RESULTS AND DISCUSSIONS

4.1. General characteristics of respondents

Before turning to descriptive analysis, we briefly review our survey data. This is because a systematic or organised collection of data is what makes a survey unique (Vaus, 2014). This study examines data derived from a national survey, which include responses from 7,528 Indonesian businesses. A significant proportion of survey respondents resided on the island of Java (72%; n = 5,410), with lesser proportions originating from Sumatra (12%; n = 906), Kalimantan (6%; n = 438), Bali-Nusa Tenggara (5%; n = 370), and Sulawesi (4%; n = 313). A small proportion of respondents (1%; n = 91) were from Papua-Maluku. This sample is representative based on assessments of representativeness considering annual revenue, industry, and geographic location.[16]

Survey results reveal that businesses with a permanent workforce of 2 to 10 employees constitute the highest proportion of survey respondents, accounting for 36% (n = 2,732) of the sample. This is followed by businesses with a permanent workforce of between 11 and 50 employees, comprising 27% (n = 2,029) of the sample. Entities with a permanent workforce of 51 to 100 employees represent 10% of the sample (n = 724), while those with 101 to 250 employees represent 8% of the sample (n = 609)—a proportion akin to businesses with only one employee (9%; n = 654). In contrast, businesses with between 251 to 500 permanent employees and those with over 500 employees each represent 5% (n = 357) and 6% (n = 423) of the sample, respectively.

Regarding business revenue, approximately 46% of businesses (n = 3,457) reported an annual revenue of less than IDR 5 billion before the pandemic. Businesses with revenues between IDR 5 and 10 billion constitute 14% of the sample (n = 1071), while those with revenues between IDR 10 and 25 billion, IDR 25 and 50 billion, and IDR 50 and 100 billion represent 12% (n = 904), 9% (n = 643), and 7% (n = 498) of the sample, respectively. Entities with revenues exceeding IDR 100 billion account for double the proportion of companies with revenue levels below this range (i.e., between IDR 50 and 100 billion), representing 13% of the sample (n = 955).

Table 3 presents the details of the general characteristics of the sample for the variables under investigation. The descriptive statistics for the variables under investigation, including the minimum and maximum values, means, medians, standard deviations, and variances are provided in Appendix 4.

[16] Ascertaining the optimal sample size is intricate, as it does not primarily depend on the target population's size. For instance, the necessary sample size stays consistent, irrespective of a population ranging from 300,000 to 80 million (OECD, 2012). Nevertheless, it is essential to recognise that survey results may not always be an accurate reflection of the larger population.

TABLE-3: General characteristics of the survey data (n = 7,528)

	Tax incentives utilisation in 2021?					
	No		Yes		Total	
	Obs.	(%)	Obs.	(%)	Obs.	(%)
Business location						
Sumatra	550	(15.1%)	356	(9.2%)	906	(12.0%)
Java	2,386	(65.3%)	3,024	(78.0%)	5,410	(71.9%)
Sulawesi	207	(5.7%)	106	(2.7%)	313	(4.2%)
Kalimantan	248	(6.8%)	190	(4.9%)	438	(5.8%)
Bali-Nusa Tenggara	198	(5.4%)	172	(4.4%)	370	(4.9%)
Papua-Maluku	63	(1.7%)	28	(0.7%)	91	(1.2%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)
A. Year of establishment						
Before 1980	105	(2.9%)	235	(6.1%)	340	(4.5%)
1980 - 1990	187	(5.1%)	346	(8.9%)	533	(7.1%)
1991 - 1995	188	(5.1%)	319	(8.2%)	507	(6.7%)
1996 - 2000	245	(6.7%)	354	(9.1%)	599	(8.0%)
2001 - 2005	320	(8.8%)	410	(10.6%)	730	(9.7%)
2006 - 2010	526	(14.4%)	570	(14.7%)	1,096	(14.6%)
2011 - 2015	789	(21.6%)	753	(19.4%)	1,542	(20.5%)
2016 - 2020	1,292	(35.4%)	889	(22.9%)	2,181	(29.0%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)
B. The number of permanent employees						
1	482	(13.2%)	172	(4.4%)	654	(8.7%)
2 - 10	1,716	(47.0%)	1,016	(26.2%)	2,732	(36.3%)
11 - 50	873	(23.9%)	1,156	(29.8%)	2,029	(27.0%)
51 - 100	248	(6.8%)	476	(12.3%)	724	(9.6%)
101 - 250	178	(4.9%)	431	(11.1%)	609	(8.1%)
251 - 500	74	(2.0%)	283	(7.3%)	357	(4.7%)
› 500	81	(2.2%)	342	(8.8%)	423	(5.6%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)
C. The average annual sales prior to the COVID pandemic (in billion)						
‹ IDR 5	2,216	(60.7%)	1,241	(32.0%)	3,457	(45.9%)
IDR 5 - 10	534	(14.6%)	537	(13.9%)	1,071	(14.2%)
IDR 10 - 25	371	(10.2%)	533	(13.8%)	904	(12.0%)
IDR 25 - 50	207	(5.7%)	436	(11.2%)	643	(8.5%)
IDR 50 - 100	145	(4.0%)	353	(9.1%)	498	(6.6%)
› IDR 100	179	(4.9%)	776	(20.0%)	955	(12.7%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)
D. The current adequacy of cash flow in relation to operational or production costs						
Insufficient (negative cash flow)	1,393	(38.1%)	871	(22.5%)	2,264	(30.1%)
Somewhat adequate (0-3 months)	1,429	(39.1%)	1,769	(45.6%)	3,198	(42.5%)
Adequate (3-6 months)	632	(17.3%)	963	(24.8%)	1,595	(21.2%)
Highly adequate (more than 6 months)	198	(5.4%)	273	(7.0%)	471	(6.3%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)
E. Primary market share						
Domestic	3,243	(88.8%)	2,896	(74.7%)	6,139	(81.5%)
Domestic and overseas	293	(8.0%)	711	(18.3%)	1,004	(13.3%)
Overseas	116	(3.2%)	269	(6.9%)	385	(5.1%)
	3652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)
F. The most challenging difficulty affecting business activities during the first semester of 2021						
The high production cost	371	(10.2%)	407	(10.5%)	778	(10.3%)
A decrease in product demand	1,693	(46.4%)	1,841	(47.5%)	3,534	(46.9%)
Constraints in product distribution	155	(4.2%)	185	(4.8%)	340	(4.5%)
Constraints in the supply of raw and supporting materials	190	(5.2%)	265	(6.8%)	455	(6.0%)
Suboptimal business capacity due to the implementation of health protocols	1,243	(34.0%)	1,178	(30.4%)	2,421	(32.2%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)

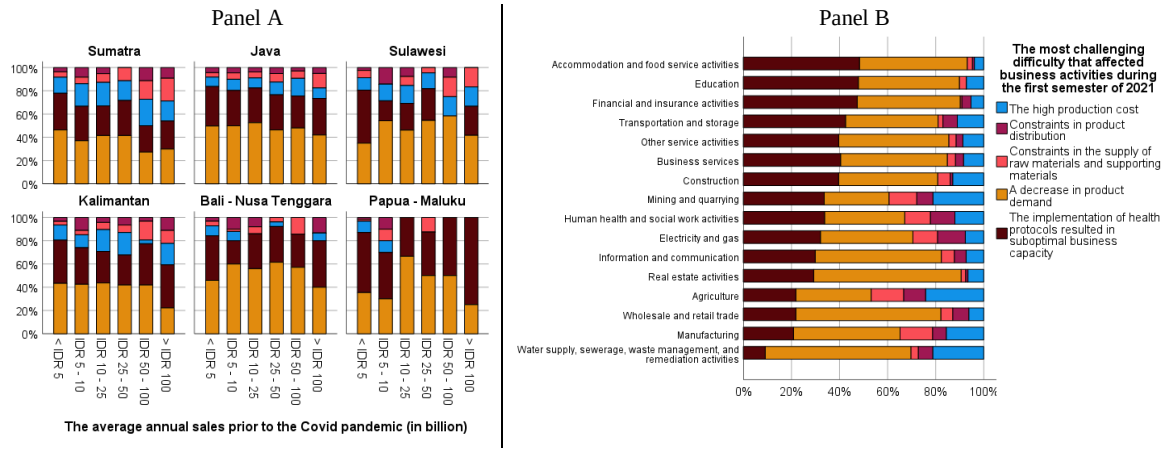
G. Main strategy in maintaining the sustainability of business activities						
Increasing product sales	744	(20.4%)	970	(25.0%)	1,714	(22.8%)
Decreasing product prices	351	(9.6%)	306	(7.9%)	657	(8.7%)
Employment reorganisation (number of employees, working hours, and salary)	1,096	(30.0%)	1,129	(29.1%)	2,225	(29.6%)
Creating new products based on market demand	321	(8.8%)	304	(7.8%)	625	(8.3%)
Closing one or more divisions for efficiency reasons	260	(7.1%)	149	(3.8%)	409	(5.4%)
Tightening production costs (raw materials, auxiliary materials, overheads)	880	(24.1%)	1,018	(26.3%)	1,898	(25.2%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)
H. Comparison of business performance in the first semester of 2021 versus 2020						
Decreasing › 30%	1,429	(39.1%)	1,113	(28.7%)	2,542	(33.8%)
Decreasing up to 30%	1,389	(38.0%)	1,494	(38.5%)	2,883	(38.3%)
Not change	493	(13.5%)	571	(14.7%)	1,064	(14.1%)
Increasing up to 30%	210	(5.8%)	474	(12.2%)	684	(9.1%)
Increasing › 30%	131	(3.6%)	224	(5.8%)	355	(4.7%)
	3,652	(100.0%)	3,876	(100.0%)	7,528	(100.0%)

Source: Authors' calculation

4.2. Impediments faced by businesses during the COVID-19 crisis

As Part A of our conceptual framework has shown, in assessing appropriateness criteria, we begin our analysis by determining the primary obstacles faced by businesses. The majority of respondents (47%; n = 3,534) cited a decline in product demand as their top concern, followed by reduced business capacity (32%; n = 2,421). The rest, 10% of respondents (n = 788) cited high production costs, 6% (n = 455) expressed difficulty in locating basic supplies and auxiliary materials, and 5% claimed distribution problems (n = 340). These results indicate that the majority of businesses surveyed encountered difficulties associated with a decline in product demand, followed by suboptimal business capacity. As depicted in Panel A of Figure 6, the primary issue related to a decrease in product demand was uniformly distributed across all island groups and experienced by all revenue groups. For instance, in Java, this hindrance was reported by 49% of respondents (n = 2,624), while in Kalimantan, Sumatra, and Sulawesi it was reported by 42% (n = 183), 42% (n = 380), and 41% (n = 127) of respondents, respectively. The highest proportion of respondents reporting this difficulty were businesses in Bali and Nusa Tenggara (50%; n = 186), while the lowest proportion was reported by businesses in Papua and Maluku (37%; n = 34).

FIGURE-6: Self-reported business hardships during the COVID-19 crisis (n = 7,528)



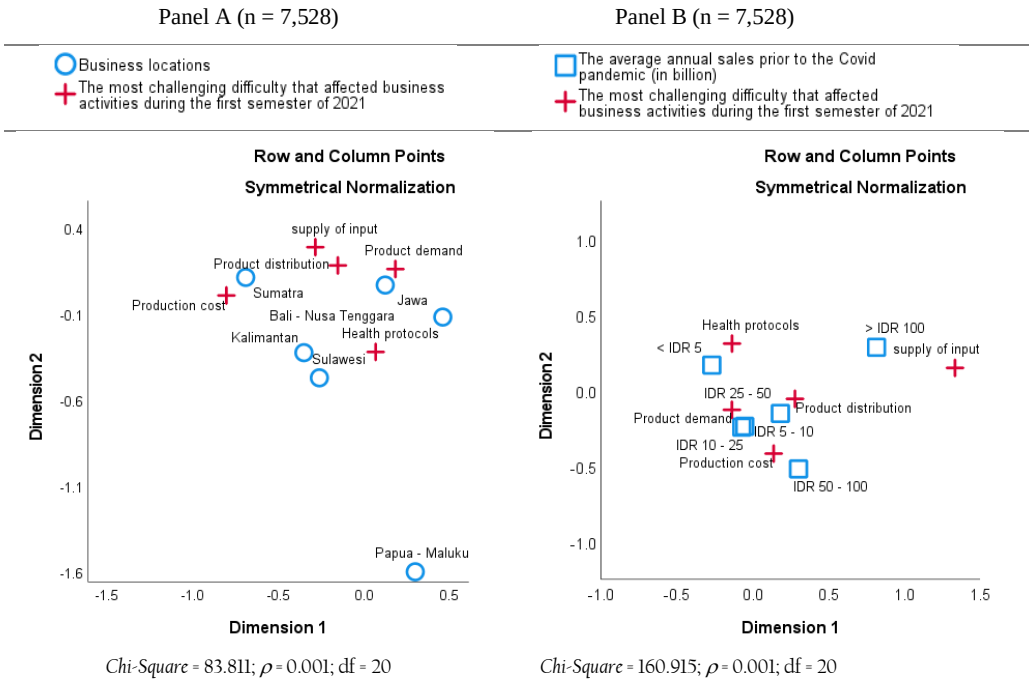
Note: Panel A displays the variation in five types of impediments experienced by businesses based on their geographical location and revenue group. Panel B illustrates the variation in types of impediments experienced by businesses based on their sector.

Source: Authors' calculation

In terms of business sectors, a slightly different pattern emerged, particularly with regard to the decrease in business capacity. As shown in Panel B of Figure 6, the accommodation and food service sector reported the highest proportion for this type of difficulty (48%; n = 112), while in this sector, difficulties related to a decrease in product demand were reported by 45% of respondents (n = 104). Conversely, the sectors reporting the lowest proportion of difficulties related to the decrease in business capacity were the water supply, sewerage, waste management, and remediation activities, manufacturing, and wholesale and retail trade sectors, each reporting 9% (n = 3), 21% (n = 238), and 22% (n = 359), respectively. However, it is important to note that the impediments experienced by these three sectors in the form of a decrease in product demand were quite significant, at 61% (n = 20), 44% (n = 506), and 60% (n = 991), respectively. These findings suggest that the accommodation and food service sector faced the most substantial impediments related to suboptimal business capacity, while the water supply, manufacturing, and wholesale and retail trade sectors faced relatively lower difficulties in this regard.

Further, as Figure 7 shows, an observation can be made that the geographic location of businesses may significantly impact the impediments they encounter (Chi-Square = 83.811; p = 0.001; df = 20). Businesses based in Java commonly cited a decline in product demand as their primary difficulty, while those located in Sumatra frequently identified high production costs as a significant obstacle. Further details on the cross-tabulation between business hardships and business location can be found in Appendix 5A. Moreover, the magnitude of yearly revenue is also intricately linked to the nature of obstacles encountered (Chi-Square = 160.915; p = 0.001; df = 20). Businesses with an annual turnover of less than IDR 5 billion typically cited the suboptimal capacity as their primary challenge. Entities reporting an annual revenue ranging from IDR 10 billion to IDR 50 billion commonly cited a reduction in product demand as their primary concern. Entities with a turnover exceeding IDR 100 billion faced significant obstacles associated with the procurement of raw materials and ancillary supplies. Further details on the cross-tabulation between business hardships and annual turnover can be found in Appendix 5B.

FIGURE-7: Business hardships, business locations, and annual sales



Note: Panel A of the graph depicts the relationship between business locations and the primary business difficulty, illustrating the varying nature of the relationship between the two variables. The distance between the two legend varieties in a graph indicates the degree of similarity or trend. Panel B illustrates the variance in the association between annual sales volume and the nature of the primary difficulty reported by surveyed businesses.

Source: Authors' calculation

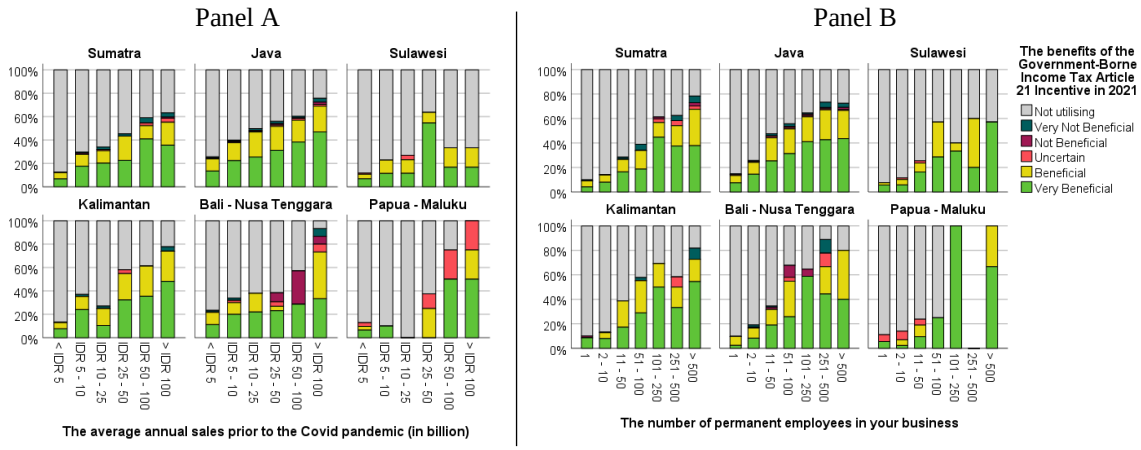
4.3. The benefits of the tax incentives

Following our assessment of the appropriateness criteria, we now turn to assessing the responsiveness criteria. We detail our analysis for each tax incentive in three parts: the level of benefits, the type of benefits, and the renewed interest in the tax incentives. Firstly, the perceived level of tax incentive benefits, as follows:

4.3.1. Article 21 Income Tax incentive

Around 39% (n = 2,918) of the survey participants reported utilising the Article 21 Income Tax incentive. The incentive was perceived as 'highly advantageous' by the majority of individuals utilising it (57%; n = 1,652), whereas almost 36% (n = 1,056) regarded it as 'advantageous.' Although present at lower frequencies, a subset of participants conveyed sentiments of 'undecided', 'disadvantageous', and 'highly advantageous', comprising 2.3% (n = 67), 1.4% (n = 41), and 3.5% (n = 102) of the sample, respectively. The stacked bar charts in Figure 8 depict a uniform distribution of the prevailing perception that the incentive is highly advantageous across all island groups.

FIGURE-8: Self-reported benefits of the Article 21 Income Tax incentive (n = 7,528)



Note: Panel A delineates the distribution of respondents' viewpoints concerning the efficacy of the Article 21 Income Tax incentive, categorised by island and turnover groupings. The vertical axis presents the proportions of respondents' perspectives for each turnover classification for each island, whilst the horizontal axis portrays the turnover groupings ranked in ascending order, ranging from the lowest (below IDR 5 billion) to the highest (above IDR 100 billion). Panel B expounds upon the distribution of respondents' viewpoints pertaining to the effectiveness of the incentive, based on the island and number of permanent employees. The vertical axis illustrates the proportions of respondents' perspectives for each permanent employee classification for each island, whereas the horizontal axis displays the permanent employee groupings ranked in ascending order, commencing with the smallest (1 permanent employee) and culminating with the largest (above 500 permanent employees).

Source: Authors' calculation

It is worth noting that the proportion of respondents deeming the incentive highly advantageous tends to increase in correlation with their revenue size. For instance, within the entire group of respondents with revenues below Rp 5 billion, merely around 11% (n = 393) reported the incentive as highly advantageous. This proportion exhibits a gradual increase as revenue escalates to ranges of Rp 5–10 billion, Rp 10–25 billion, Rp 25–50 billion, Rp 50–100 billion, and above Rp 100 billion, with respective percentages of 21% (n = 229), 24% (n = 212), 31% (n = 197), 38% (n = 188), and 45% (n = 433).

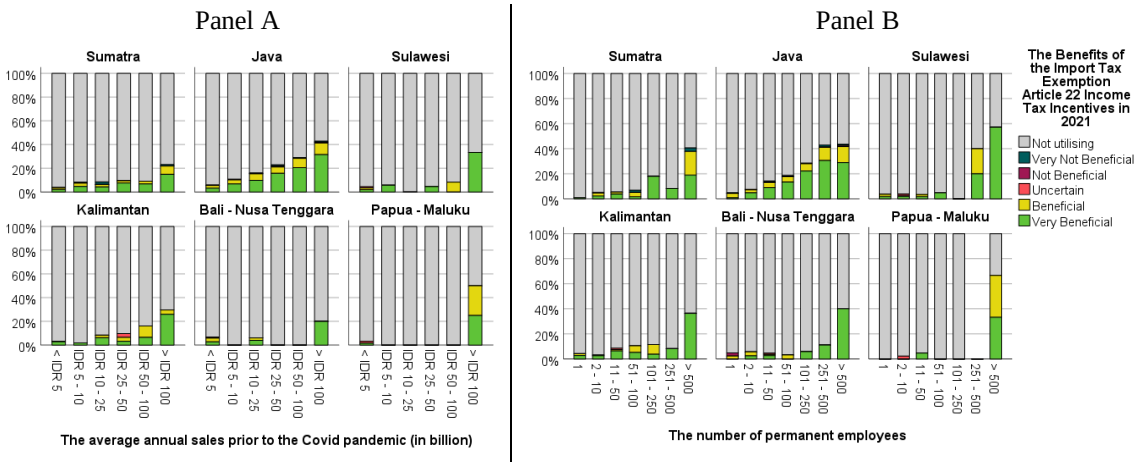
A comparable occurrence exists with regards to the quantity of personnel employed by businesses. In this case, there is a correlation observed between the workforce size and the percentage of participants expressing that the incentives were significantly beneficial. For example, among the entire group of respondents with merely one permanent employee, only about 6.4% (n = 42) regarded the incentive as highly advantageous. This figure exhibits a progressive increase as the number of permanent employees expands within the ranges of 2–10 individuals, 11–50 individuals, 51–100 individuals, 101–250 individuals,

251–500 individuals, and above 500 individuals, with each category reflecting 12% (n = 329), 23% (n = 473), 30% (n = 216), 42% (n = 258), 42% (n = 149), and 44% (n = 185), respectively.

4.3.2. Article 22 Income Tax incentive

Of all respondents, approximately 14% (n = 1,039) availed themselves of the Article 22 Income Tax incentive. Analogous to the users of the Article 21 Income Tax incentive, the majority of Article 22 Income Tax incentive beneficiaries perceived this incentive as 'highly advantageous' (67%; n = 693). Concurrently, 28% (n = 293) of the incentive recipients deemed it 'advantageous.' Only a small proportion of respondents profiting from this incentive expressed 'undecided' and 'disadvantageous or highly disadvantageous', constituting only 2% (n = 19) and 3% (n = 34), respectively.

FIGURE-9: Self-reported benefits of the Article 22 Income Tax incentive (n = 7,528)



Note: Panel A illustrates the distribution of respondents' perspectives regarding the extent of the benefits derived from the Article 22 Income Tax incentive, categorised by island and turnover. The vertical axis shows the distribution of respondents' perspectives for each turnover category for each island, while the horizontal axis displays the turnover categories ranked in ascending order from the smallest (below IDR 5 billion) to the largest (above IDR 100 billion). Panel B presents the distribution of respondents' perspectives on the usefulness of tax incentives based on island and number of permanent employees. The vertical axis displays the proportions of respondents' perspectives for each permanent employee category for each island, while the horizontal axis ranks the permanent employee categories in ascending order from the fewest (1 permanent employee) to the greatest (above 500 permanent employees).

Source: Authors' calculation

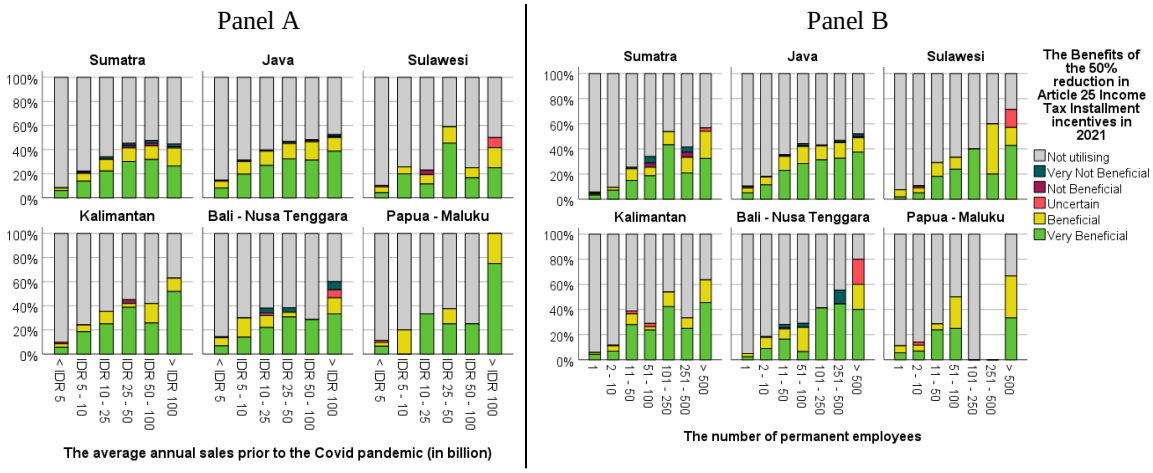
As shown in the stacked bar charts in Figure 9, a propensity emerges for the proportion of the beneficiaries asserting the incentive as 'highly advantageous' to escalate in accordance with the company's higher revenue. In this context, within the group generating less than IDR 5 billion in revenue, approximately 54% (n = 99) of incentive beneficiaries considered the incentive 'highly advantageous.' This proportion incrementally increases as the revenue group expands to IDR 5–10 billion, IDR 10–25 billion, IDR 25–50 billion, IDR 50–100 billion, and above IDR 100 billion, with respective percentages of 64% (n = 63), 61% (n = 76), 69% (n = 87), and 74% (n = 283).

A comparable pattern prevails when examining the permanent employee categories. The proportion of Article 22 Income Tax incentive beneficiaries regarding the incentive as highly beneficial is discerned to rise in tandem with the number of permanent employees. As demonstrated in the accompanying graph, for businesses with only one permanent employee, the proportion of incentive beneficiaries attesting to the incentive's considerable efficacy is roughly 28% (n = 7). This proportion swells as the number of permanent employees increases to 2–10 individuals, 11–50 individuals, 51–100 individuals, 101–500 individuals, and above 500 individuals, with each group displaying 60% (n = 107), 64% (n = 157), 69% (n = 80), 79% (n = 121), and 72% (n = 99), respectively.

4.3.3. Article 25 Income Tax incentive

Of all the respondents, approximately 29% (n = 2,152) reaped the benefits of the Article 25 Income Tax incentive. Echoing the previously discussed Article 21 and Article 22 Income Tax incentives, the majority of beneficiaries of the Article 25 Income Tax incentive characterised this incentive as 'highly advantageous' (65%; n = 1,408), and nearly 30% (n = 641) of the incentive recipients considered it 'advantageous'. Only a small proportion of respondents gaining from this incentive expressed 'undecided', 'disadvantageous', and 'highly disadvantageous', constituting merely 2% (n = 41), 1% (n = 10), and 2% (n = 52), respectively.

FIGURE-10: Self-reported benefits of the Article 25 Income Tax incentive (n = 7,528)



Note: Panel A shows how respondents' attitudes vary with respect to the magnitude of advantages obtained under the Article 25 Income Tax incentive, based on island and turnover categories. The horizontal axis ranks the turnover categories from the lowest (below IDR 5 billion) to the greatest (over IDR 100 billion), while the vertical axis illustrates the distribution of respondents' viewpoints for each turnover category for each island. Panel B displays the respondents' opinions on the value of tax incentives, based on the island and number of permanent workers. The horizontal axis ranks the categories of permanent employees in ascending order from the smallest (1 permanent employee) to the largest (above 500 permanent employees), while the vertical axis shows the proportions of respondents' perspectives for each category of permanent employees for each island.

Source: Authors' calculation

A trend emerges as depicted in the stacked bar charts in Figure 10, suggesting that the proportion of beneficiaries of the Article 25 Income Tax incentive deeming it highly advantageous grows in correspondence with the higher revenue of businesses. Within the revenue group below IDR 5 billion, the proportion of incentive beneficiaries asserting that this incentive is highly advantageous is roughly 56% (n = 253). This proportion incrementally increases as the revenue group ascends to IDR 5–10 billion, IDR 10–25 billion, IDR 25–50 billion, IDR 50–100 billion, and above IDR 100 billion, with each group reflecting 63% (n = 199), 67% (n = 232), 70% (n = 211), 65% (n = 152), and 72% (n = 361), respectively.

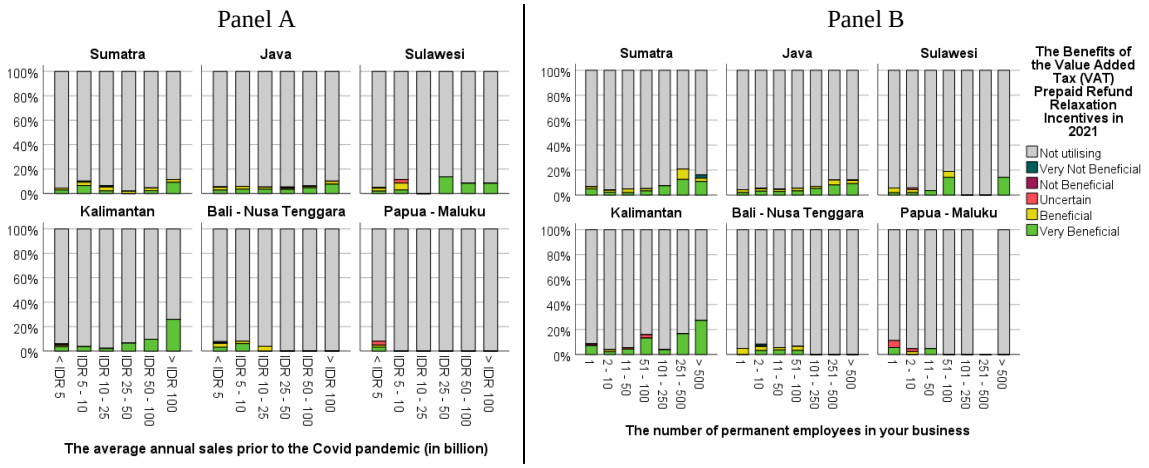
A comparable pattern prevails when examining the permanent employee categories. The proportion of Article 25 Income Tax incentive beneficiaries regarding the incentive as highly beneficial is observed to rise in tandem with the number of permanent employees. As depicted in the accompanying graph, for businesses with only one permanent employee, the proportion of incentive beneficiaries attesting to the incentive's significant efficacy is around 50% (n = 28). This proportion swells as the number of permanent employees increases to 2–10 individuals, 11–50 individuals, 51–100 individuals, 101–500 individuals, and above 500 individuals, with each group displaying 62% (n = 271), 64% (n = 444), 63% (n = 190), 75% (n = 204), 68% (n = 113), and 70% (n = 158), respectively.

4.3.4. Accelerated VAT refund incentive

Among all respondents, a mere 6% (n = 467) were identified as employing the accelerated VAT refund incentive scheme. Analogous to the income tax incentives beneficiaries discussed earlier, the majority of the VAT incentive users perceived the incentive as 'highly advantageous' (62%; n = 290), while

approximately 32% (n = 149) considered it 'advantageous.' Only a small proportion of users of this incentive expressed 'undecided' or 'disadvantageous or highly disadvantageous', with each group constituting a mere 3% (n = 16) and 3% (n = 12), respectively.

FIGURE-11: Self-reported benefits of the accelerated VAT refund incentive (n = 7,528)



Note: Panel A demonstrates how respondents' opinions differ with regard to the scope of benefits acquired via the VAT incentive based on island and turnover. The vertical axis depicts the distribution of respondents' opinions for each turnover category for each island, while the horizontal axis lists the turnover categories from the smallest (under IDR 5 billion) to the largest (over IDR 100 billion). Panel B presents the respondents' views on the value of tax incentives based on island and number of permanent employees. The vertical axis displays the proportions of respondents' perspectives for each category of permanent employees for each island, while the horizontal axis lists the categories of permanent employees in descending order from the smallest (1 permanent employee) to the largest (above 500 permanent employees).

Source: Authors' calculation

Unlike those in the previous figures, a less discernible pattern emerges for this incentive. Nevertheless, it is still indicating that the proportion of users deeming the accelerated VAT refund incentive to be highly beneficial increases concomitantly with the rising turnover of businesses. Specifically, within the group possessing a turnover of less than IDR 5 billion, the proportion of users appraising this incentive as highly beneficial stands at approximately 51% (n = 97). However, this proportion witnesses a gradual ascent as turnover expands, with 62% (n = 42) of users within the IDR 5–10 billion turnover bracket, 60% (n = 27) in the IDR 10–25 billion bracket, 67% (n = 22) in the IDR 25–50 billion bracket, 77% (n = 24) in the IDR 50–100 billion bracket, and 77% (n = 78) in the bracket exceeding IDR 100 billion reporting that they found the incentive to be highly beneficial.

A similar pattern emerges when correlated with the categories of permanent employees. The proportion of users of the accelerated VAT refund incentive asserting the incentive as highly beneficial appears to experience an increase corresponding to the growth in the number of employees. As illustrated in the accompanying graph, for businesses with a single permanent employee, the proportion of incentive users valuing the incentive as highly beneficial amounts to approximately 56% (n = 20). This proportion incrementally rises as the number of employees expands to 2–10 individuals, 11–50 individuals, 51–100 individuals, 101–500 individuals, and exceeding 500 individuals, each accounting for 53% (n = 78), 59% (n = 59), 64% (n = 30), 80% (n = 32), 68% (n = 30), and 76% (n = 41), respectively.

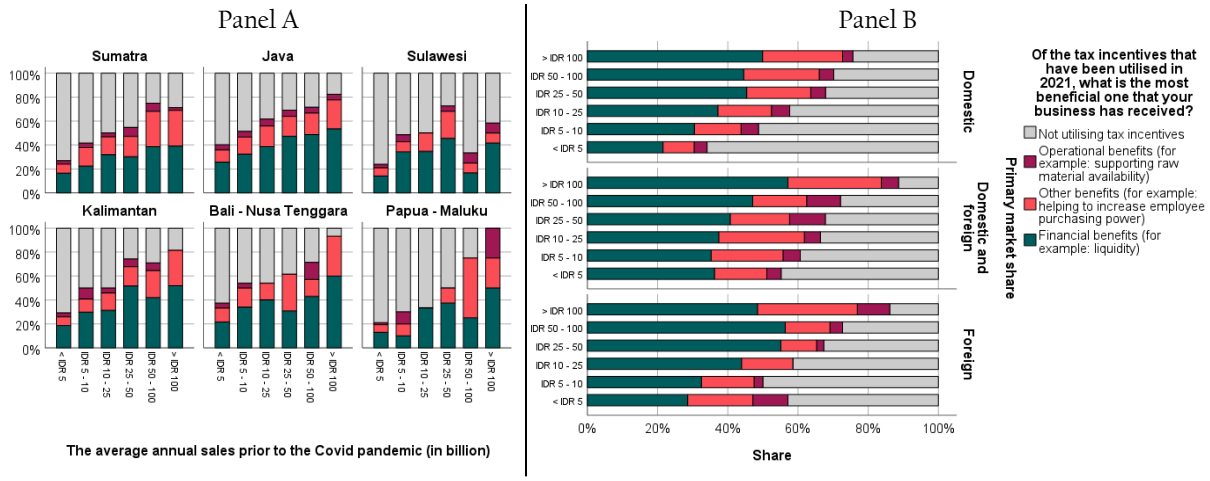
4.4. Variation in perceived benefits of the tax incentives

We now continue to assess the second part of our assessment on the responsiveness criteria as our survey data allows us to investigate the primary benefit derived from using incentives. According to the survey results, a significant proportion of participants making use of tax incentives (64%; n = 2,473) reported that the foremost benefit is financial in nature, such as increased liquidity. This is followed by the advantage in supporting the purchasing power of employees, which was reported by 28% of participants (n = 1,074).

Finally, operational benefits, such as facilitating the procurement of raw materials, were cited by only 9% of respondents (n = 329).

As depicted in Panel A of Figure 12, there is an inclination for the proportion of tax incentive users asserting that the primary advantage of tax incentives is financial (e.g., liquidity) to increase in correlation with the rising business turnover. This pattern is nearly evenly distributed across all island groups. In this instance, within the group with a turnover of less than IDR 5 billion, the proportion of incentive users stating that financial benefits are the primary advantage is merely about 23% (n = 782). This proportion incrementally increases as turnover rises to IDR 5-10 billion, IDR 10-25 billion, IDR 25-50 billion, IDR 50-100 billion, and above IDR 100 billion, each at 31% (n = 333), 38% (n = 339), 45% (n = 291), 46% (n = 231), and 52% (n = 497), respectively.

FIGURE-12: Self-reported types of benefits of the tax incentives (n = 7,528)



Note: Based on island and turnover, Panel A illustrates how respondents' opinions vary with respect to the types of tax incentive benefit. The horizontal axis displays the turnover categories from the lowest (under IDR 5 billion) to the greatest (over IDR 100 billion), while the vertical axis shows the distribution of respondents' views for each turnover category for each island. Based on groupings of companies' annual revenue and market share, Panel B offers the respondents' opinions on the ultimate benefit of tax incentives. The horizontal axis shows the percentage for each annual turnover category, while the vertical axis shows the proportions of respondents' viewpoints for each annual turnover grouping and main market shares.

Source: Authors' calculation

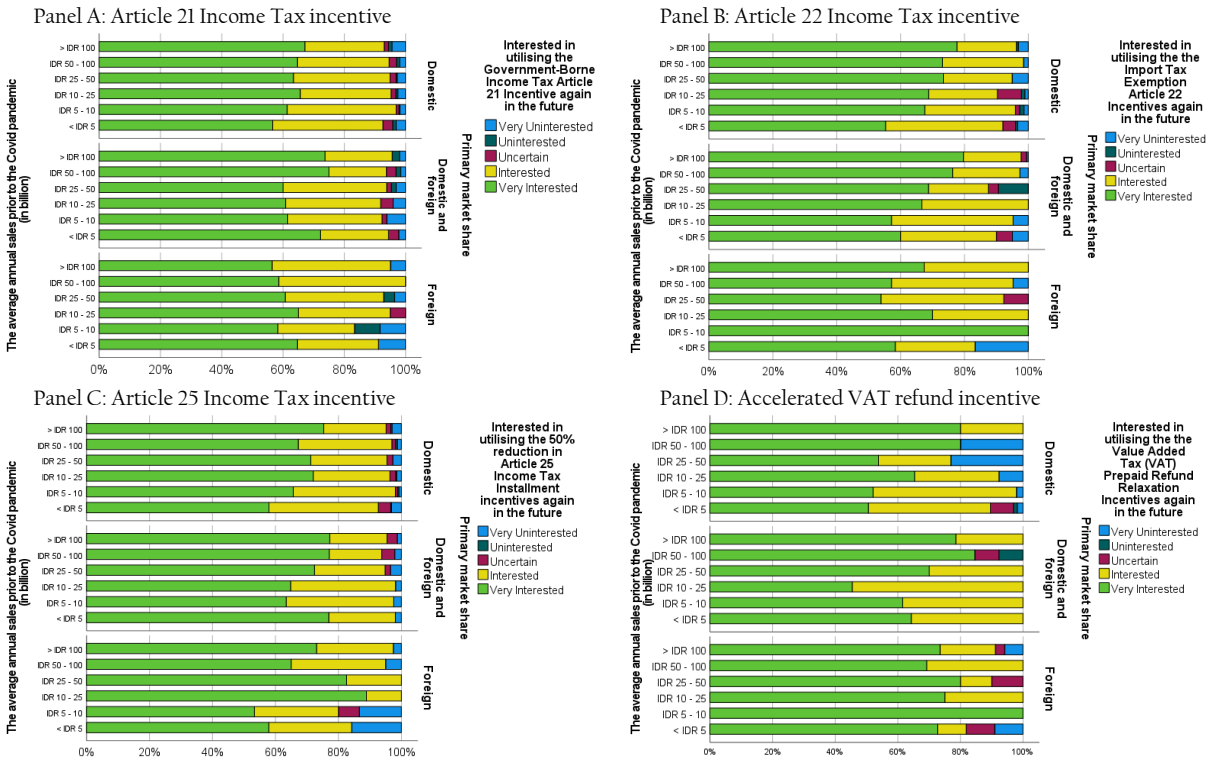
A similar pattern emerges when respondents are categorised based on their principal market segment: local, mixed, and export. As illustrated in Panel B of Figure 12, there is an inclination for the proportion of tax incentive users asserting that the primary advantage of tax incentives is financial benefit to increase as business turnover escalates, across all market segment categories. In this instance, within the group of businesses whose primary market segment is domestic, the proportion of incentive users stating that financial benefit is the principal advantage is only around 30% (n = 1,856), whereas for businesses with mixed (local and foreign) and foreign market segments, their proportion stating that financial benefit is the primary advantage increases to 44% (n = 445) and 45% (n = 172), respectively.

4.5. Renewed interest in utilising the tax incentives

We conclude our assessment of the responsiveness criteria by assessing whether there has been a revival of interest in the utilisation of tax incentives. As previously indicated, the survey specifically inquired whether respondents were interested in re-employing incentives in the future. Concerning the Article 21 Income Tax incentive, among the respondents utilising this incentive, the majority (63%; n = 1,851) expressed a keen interest in using it again, while approximately 31% (n = 899) indicated interest. Only a small fraction expressed hesitation, disinterest, or strong disinterest, with 2% (n = 54), 1% (n = 27), and 3% (n = 87), respectively. The composition of 'very interested' and 'interested' views is also relatively evenly distributed when respondents' opinions are classified into the three primary market segment groups. For

respondents with a local market segment, around 62% (n = 1,296) stated they were very interested, and 32% (n = 669) expressed interest. Conversely, for businesses with a mixed market segment (local and export), the figures were 70% (n = 422) and 25% (n = 152), respectively. For businesses with an export market segment as their primary market, the composition is also comparably similar at 60% (n = 133) and 35% (n = 78). The same pattern is observed when respondents are categorised based on their annual revenue groups. As depicted in Panel A of Figure 13, the composition remains consistent as the revenue group increases to IDR 5–10 billion, IDR 10–25 billion, IDR 25–50 billion, IDR 50–100 billion, and above IDR 100 billion.

FIGURE 13: Self-reported renewed interest in utilising tax incentives



Note: The chart on each panel shows respondents' views when asked about their interest in taking advantage of future tax incentives if they are offered again. The vertical source on the left describes annual turnover category, while the one on the right describes the group of major market shares. The horizontal axis describes proportions in each category.

Source: Authors' calculation

Of the respondents who employed the Article 22 Income Tax incentive, the majority (70%; n = 727) stated they were very interested in utilising it once more, while about 25% (n = 261) expressed interest. Only a small fraction expressed hesitation, disinterest, or strong disinterest, with 2% (n = 20), 1% (n = 7), and 2% (n = 24), respectively. The composition of 'very interested' and 'interested' views is also evenly distributed when respondents' opinions are classified into the three primary market segment groups. For respondents with a local market segment, approximately 69% (n = 429) expressed they were very interested, and 26% (n = 160) indicated interest. Meanwhile, for businesses with a mixed market segment (local and export), the figures were 74% (n = 230) and 22% (n = 67), respectively. For businesses with an export market segment as their primary market, the composition is also relatively similar at 64% (n = 68) and 32% (n = 34). The same pattern is observed when respondents are categorised based on their annual revenue groups. As illustrated in Panel B of Figure 13, the composition remains consistent as the revenue group increases to IDR 5–10 billion, IDR 10–25 billion, IDR 25–50 billion, IDR 50–100 billion, and above IDR 100 billion.

Regarding the Article 25 Income Tax incentive, among the respondents utilising this incentive, the majority (69%; n = 1,484) expressed a keen interest in employing it again, while approximately 27% (n = 572) indicated interest. Only a small fraction expressed hesitation, disinterest, or strong disinterest, with 2% (n = 41), 0% (n = 5), and 2% (n = 50), respectively. The composition of 'very interested' and 'interested' views is also relatively evenly distributed when respondents' opinions are classified into the three primary market segment groups. For respondents with a local market segment, around 68% (n = 1,061) stated they were very interested, and 28% (n = 440) expressed interest. Conversely, for businesses with a mixed market segment (local and export), the figures were 74% (n = 299) and 20% (n = 92), respectively. For businesses with an export market segment as their primary market, the composition is also comparably similar at 72% (n = 124) and 23% (n = 40). The same pattern is observed when respondents are categorised based on their annual revenue groups. As depicted in Panel C of Figure 13, the composition remains consistent as the revenue group increases to IDR 5–10 billion, IDR 10–25 billion, IDR 25–50 billion, IDR 50–100 billion, and above IDR 100 billion.

Lastly, of the respondents employing the accelerated VAT refund incentive, the majority (63%; n = 292) stated they were very interested in utilising it again, while about 31% (n = 143) expressed interest. Only a small fraction expressed hesitation, disinterest, or strong disinterest, with 3% (n = 16), 1% (n = 3), and 3% (n = 18), respectively. The composition of 'very interested' and 'interested' views is also relatively evenly distributed when respondents' opinions are classified into the three primary market segment groups. For respondents with a local market segment, approximately 56% (n = 156) expressed they were very interested, and 36% (n = 101) indicated interest. Meanwhile, for businesses with a mixed market segment (local and export), the figures were 71% (n = 73) and 27% (n = 28), respectively. For businesses with an export market segment as their primary market, the composition is also relatively similar at 76% (n = 63) and 17% (n = 14). The same pattern is observed when respondents are categorised based on their annual revenue groups. As illustrated in Panel D of Figure 13, the composition remains consistent as the revenue group increases to IDR 5–10 billion, IDR 10–25 billion, IDR 25–50 billion, IDR 50–100 billion, and above IDR 100 billion.

Overall, the survey results suggest a substantial level of interest in tax incentives among the respondents, spanning different market segments and revenue groups. These findings carry significant implications for policymakers endeavouring to stimulate business growth and investment in the economy.

4.6. The association between the utilisation of tax incentives and business performance

Following the descriptive results, as indicated earlier in Part B of our conceptual framework, we then explore and examine the association between the utilisation of tax incentives and business performance. The results of the OLS regression analysis are presented in Table 4, which indicates that there are no significant problems of autocorrelation as confirmed by the Durbin-Watson test. Our study focuses on the effects of tax incentives, which is our primary variable of interest as mentioned previously.

TABLE-4: OLS regression estimation result

	Model (1)		Model (2)		Model (3)		Model (4)	
(Constant)	1.977	***	1.878	***	2.634	***	2.270	***
	[0.089]		[0.099]		[0.280]		[0.488]	
Tax incentives effects								
Receiving tax incentives	0.064	***	0.059	**	0.117		0.124	
	[0.025]		[0.026]		[0.082]		[0.139]	
Cash adequacy effects								
Somewhat adequate (0-3 months)	0.567	***	0.533	***	0.562	***	0.955	***
	[0.028]		[0.030]		[0.098]		[0.167]	
Adequate (3-6 months)	0.676	***	0.673	***	0.644	***	0.837	***
	[0.034]		[0.037]		[0.110]		[0.182]	
Highly adequate (> 6 months)	0.849	***	0.854	***	0.912	***	0.561	**
	[0.053]		[0.059]		[0.144]		[0.269]	

Size effects								
Number of permanent employees	0.073	***	0.073	***	0.052	*	0.122	***
	[0.011]		[0.013]		[0.029]		[0.043]	
Average annual sales	0.028	***	0.034	***	0.041	*	-0.060	
	[0.009]		[0.010]		[0.025]		[0.042]	
Regional effects								
Java	-0.114	***	-0.123	***	-0.186		0.083	
	[0.036]		[0.038]		[0.122]		[0.182]	
Sulawesi	0.012		0.019		-0.268		0.434	
	[0.064]		[0.066]		[0.270]		[0.391]	
Kalimantan	-0.047		-0.035		-0.086		-0.362	
	[0.057]		[0.059]		[0.242]		[0.386]	
Bali-Nusa Tenggara	-0.312	***	-0.256	***	-0.775	***	-0.317	
	[0.062]		[0.067]		[0.193]		[0.330]	
Papua-Maluku	-0.073		-0.063		-0.202			
	[0.108]		[0.109]		[0.465]			
Year effects								
1980 - 1990	0.017		-0.003		0.009		0.025	
	[0.068]		[0.081]		[0.146]		[0.360]	
1991 - 1995	0.066		0.138	*	-0.107		-0.381	
	[0.069]		[0.083]		[0.146]		[0.355]	
1996 - 2000	0.019		0.064		-0.113		-0.317	
	[0.067]		[0.080]		[0.155]		[0.336]	
2001 - 2005	0.098		0.100		0.071		0.109	
	[0.066]		[0.076]		[0.161]		[0.352]	
2006 - 2010	0.078		0.109		-0.091		-0.099	
	[0.063]		[0.073]		[0.148]		[0.343]	
2011 - 2015	0.165	***	0.187	***	0.086		-0.202	
	[0.061]		[0.072]		[0.147]		[0.332]	
2016 - 2020	0.130	**	0.151	**	0.081		-0.128	
	[0.061]		[0.071]		[0.152]		[0.342]	
Sector effects								
Construction	-0.063		-0.046		-0.450	**	-0.242	
	[0.041]		[0.041]		[0.215]		[1.179]	
Manufacturing	0.095	**	0.155	***	-0.113		-0.126	
	[0.043]		[0.050]		[0.132]		[0.224]	
Other service activities	-0.084	**	-0.078	**	-0.214		-0.037	
	[0.035]		[0.037]		[0.141]		[0.262]	
Financial and insurance activities	-0.107		-0.108		-0.235		0.685	
	[0.066]				[0.255]		[1.233]	
Transportation and storage	0.028		0.007		-0.134		1.037	*
	[0.074]		[0.082]		[0.198]		[0.570]	
Business services	-0.172	**	-0.207	**	-0.021		-0.554	
	[0.078]		[0.083]		[0.243]		[0.552]	
Information and communication	0.063		0.043		0.168			
	[0.073]		[0.076]		[0.238]			
Agriculture	-0.100		-0.054		-0.328		-0.252	
	[0.068]		[0.076]		[0.211]		[0.305]	
Human health and social work activities	0.176	**	0.220	***	-0.562	*		
	[0.071]		[0.071]		[0.337]			
Mining and quarrying	-0.089		-0.129		-0.010		-0.119	
	[0.101]		[0.120]		[0.255]		[0.396]	
Real estate activities	-0.077		-0.074		-0.089			
	[0.098]		[0.101]		[0.337]			
Accommodation and food service activities	-0.013		0.023		0.022		-0.652	
	[0.071]		[0.081]		[0.191]		[0.566]	
Electricity and gas	0.051		0.024				1.932	
	[0.114]		[0.111]				[1.191]	
Education	-0.250	**	-0.140		-0.997	***		
	[0.122]		[0.127]		[0.369]			
Water supply, etc.	-0.008		0.074		-0.703			
	[0.172]		[0.175]		[0.639]			
Business hindrance effects								
A decrease in product demand	-0.617	***	-0.560	***	-0.770	***	-0.840	***
	[0.040]		[0.043]		[0.116]		[0.197]	

Constraints in product distribution	-0.051 [0.064]		0.103 [0.072]		-0.404 [0.197]	**	-0.473 [0.240]	**
Constraints in the supply of raw and supporting materials	0.018 [0.058]		0.115 [0.067]	*	-0.196 [0.154]		-0.283 [0.231]	
Suboptimal business capacity	-0.224 [0.041]	***	-0.171 [0.045]	***	-0.501 [0.122]	***	-0.162 [0.194]	
Business strategy effects								
Decreasing product prices	-0.232 [0.045]	***	-0.221 [0.047]	***	-0.132 [0.176]		-0.179 [0.291]	
Employment reorganisation	-0.403 [0.033]	***	-0.388 [0.035]	***	-0.480 [0.101]	***	-0.261 [0.168]	
Creating new products based on market demand	-0.109 [0.046]	**	-0.084 [0.050]	*	-0.363 [0.140]	***	0.044 [0.272]	
Closing one or more divisions	-0.582 [0.056]	***	-0.550 [0.060]	***	-0.763 [0.169]	***	-0.607 [0.373]	
Tightening production costs	-0.249 [0.033]	***	-0.217 [0.037]	***	-0.419 [0.096]	***	-0.295 [0.295]	*
Primary market effects								
Domestic and overseas	0.040 [0.037]							
Overseas	0.090 [0.056]							
Observations	7,528		6,139		1,004		385	
Adjusted R-square	0.227		0.232		0.228		0.205	
F-value	53.573		45.124		8.217		3.758	
Durbin-Watson	2.017		1.956		1.905		2.017	

Note: Dependent variable is comparison of business activities in the first semester of 2021 versus 2020; * Significance at 90% confidence level; ** Significance at 95% confidence level; *** Significance at 99% confidence level; Standard errors are in brackets.

Source: Authors' calculation

As shown in Table 4, the coefficients of the tax incentive dummy in Model 1 confirm that receiving tax incentives has a positive and significant effect on business performance. Specifically, businesses utilising tax incentives during the pandemic showed improved performance in terms of changes in business activities compared to those that did not receive incentives. Table 4 supports this finding by showing that, when other regressor variables are held constant, the regression coefficients of the cash adequacy dummies are all positive and significant. This suggests that businesses reporting better cash adequacy are also experiencing better business performance. Moreover, the coefficient increases as the level of cash adequacy increases, which is consistent with the OECD's (2020a) observation that financial liquidity is critical for maintaining business performance particularly during the early phases of the COVID-19 crisis. However, it is worth noting that when we perform heterogeneity tests using Models 2, 3, and 4, the results are similar only for Model 2 (i.e., for businesses with domestic primary markets). For businesses with mixed or overseas primary market shares, we find statistically insignificant results despite positive coefficients.

Regarding the size effect, the coefficients for the number of employees and annual sales turnover are consistently positive and statistically significant in both Model 1 and Model 2. This suggests that larger businesses exhibit greater resilience during the pandemic. In terms of regional effects, the findings corroborate official reports that Bali–Nusa Tenggara was the region most severely affected by the pandemic in Indonesia.

With respect to the year effects, our analysis reveals that younger companies generally outperform their older counterparts in terms of business performance. The coefficients for businesses established between 2011-2015 and 2016-2020 are all positive and statistically significant, indicating that younger businesses generally experience superior business performance. In terms of business hindrances, the results imply that a decline in product demand is the most influential factor affecting business performance, as evidenced by the consistently negative and statistically significant coefficients.

Lastly, the coefficients for business strategy effects are all negative and statistically significant, implying that businesses adopting strategies other than increasing product sales experienced diminished business performance.

4.7. Comparing the financial liquidity

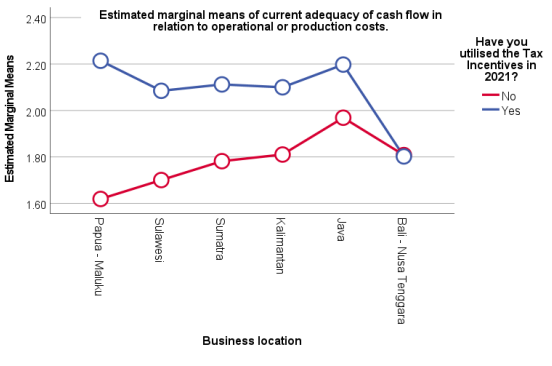
Following the regression results, to assess the adequacy criterion, we employ a one-way between-subjects ANOVA to further explore the correlation between the utilisation of tax incentives and the level of cash adequacy among the participants. Detailed information on the differences among the six groups on the dependent variables of cash adequacy can be found in Appendix 6.A. The findings suggest that businesses that did not employ tax incentives had lower liquidity in comparison to those that did, as evidenced by a mean score of 1.781.

The ANOVA was conducted at a significance level (α) of 0.05, indicating that the probability of obtaining the observed results by chance is less than 5%. The results of the ANOVA indicate a statistically significant main effect for tax incentives. The results indicate that businesses not utilising tax incentives had lower liquidity (M = 1.781) compared to those utilising tax incentives (M = 2.085), as evidenced by a statistically significant F-test (F (1, 7,516) = 49.345, α = 0.000, η2 = 0.007).

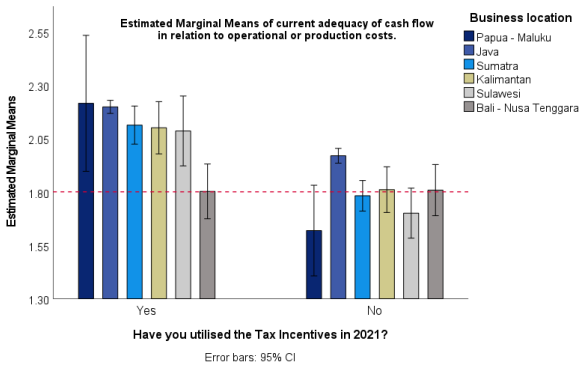
This study has identified a noteworthy interaction effect between the utilisation of tax incentives and the location of businesses. The F value for this effect is (5, 7,516) = 3.166, with a significance level of 0.007 and an effect size of η2 = 0.002. The utilisation of tax incentives by businesses in varying locations resulted in notable variations in cash adequacy levels when compared to businesses that did not employ such incentives. The results indicate that tax incentives have the potential to alleviate the adverse effects of the pandemic on commercial operations. Panel B of Figure 14 presents a graphical representation facilitating the comparison of estimated marginal means pertaining to cash adequacy.

FIGURE-14: Self-reported adequacy of cash flow and the status of tax incentives utilisation

Panel A: Level of cash adequacy by islands



Panel B: Level of cash adequacy by status of tax incentives utilisation



Note: These graphs present a comparison of mean scores for twelve groups categorized by their business location and the status of tax incentives utilisation. Notably, both Panels A and B suggest that businesses utilising tax incentives, in general, experienced a less severe financial issues (as reflected by higher mean scores of cash adequacy) compared to other groups, except to those in Bali–Nusa Tenggara.

Source: Authors' calculation

The findings depicted in Panels A and B of Figure 14 suggest that businesses making use of tax incentives tended to exhibit higher levels of cash adequacy compared to those that did not. This observation implies that the financial liquidity of the former group was relatively less severe than that of the latter. Nevertheless, the state of businesses in Bali–Nusa Tenggara was an anomaly. In Bali–Nusa Tenggara, there was no significant difference in cash adequacy between businesses utilising tax incentives and those that did not.

To assess the robustness of our findings, a post-hoc analysis was undertaken to account for the variation in sample sizes across the six groups (refer to Appendix 6.B for further details). The outcomes of

this analysis reveal statistically significant disparities in the levels of cash adequacy among businesses situated in Java compared to those in Sumatra (mean difference = 0.1852; $p < 0.0001$), Sulawesi (mean difference = 0.2662; $p < 0.0001$), Kalimantan (mean difference = 0.1608; $p = 0.002$), Bali–Nusa Tenggara (mean difference = 0.2915; $p < 0.0001$), and Papua–Maluku (mean difference = 0.2947; $p = 0.018$).

Table 5 delineates the mean differences in cash adequacy levels among the six groups. The first row exhibits the mean differences in cash adequacy levels between businesses in Java and those in the other five islands. Positive values signify that the mean value of the cash adequacy score is greater than that of the other five groups. The most pronounced difference can be observed between the mean values of cash adequacy reported by businesses in Java and those in Bali–Nusa Tenggara and Papua–Maluku (i.e, 0.2915 and 0.2947, respectively). Based on the table, we can infer that although businesses in Bali–Nusa Tenggara and Papua–Maluku experienced the most severe cash sufficiency levels, the differences in cash sufficiency levels among businesses outside Java are not statistically significant.

TABLE-5: Post-hoc analysis of the level of cash adequacy

(I) Business location		Mean Diff. (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
(I)	(J)					
Java	Sumatra	.1852*	0.03081	0.000	0.0947	0.2756
	Sulawesi	.2662*	0.04990	0.000	0.1197	0.4127
	Kalimantan	.1608*	0.04264	0.002	0.0356	0.2860
	Bali–Nusa Tenggara	.2915*	0.04612	0.000	0.1560	0.4269
	Papua–Maluku	.2947*	0.09073	0.018	0.0283	0.5611
Sumatra	Java	-.1852*	0.03081	0.000	-0.2756	-0.0947
	Sulawesi	0.0810	0.05628	1.000	-0.0842	0.2463
	Kalimantan	-0.0244	0.04995	1.000	-0.1710	0.1223
	Bali–Nusa Tenggara	0.1063	0.05296	0.671	-0.0492	0.2618
	Papua–Maluku	0.1095	0.09439	1.000	-0.1676	0.3866
Sulawesi	Sumatra	-0.0810	0.05628	1.000	-0.2463	0.0842
	Java	-.2662*	0.04990	0.000	-0.4127	-0.1197
	Kalimantan	-0.1054	0.06353	1.000	-0.2919	0.0811
	Bali–Nusa Tenggara	0.0253	0.06592	1.000	-0.1683	0.2188
	Papua–Maluku	0.0285	0.10222	1.000	-0.2717	0.3286
Kalimantan	Sumatra	0.0244	0.04995	1.000	-0.1223	0.1710
	Java	-.1608*	0.04264	0.002	-0.2860	-0.0356
	Sulawesi	0.1054	0.06353	1.000	-0.0811	0.2919
	Bali–Nusa Tenggara	0.1307	0.06061	0.467	-0.0473	0.3086
	Papua–Maluku	0.1339	0.09888	1.000	-0.1565	0.4242
Bali–Nusa Tenggara	Sumatra	-0.1063	0.05296	0.671	-0.2618	0.0492
	Java	-.2915*	0.04612	0.000	-0.4269	-0.1560
	Sulawesi	-0.0253	0.06592	1.000	-0.2188	0.1683
	Kalimantan	-0.1307	0.06061	0.467	-0.3086	0.0473
	Papua–Maluku	0.0032	0.10043	1.000	-0.2917	0.2981
Papua–Maluku	Sumatra	-0.1095	0.09439	1.000	-0.3866	0.1676
	Java	-.2947*	0.09073	0.018	-0.5611	-0.0283
	Sulawesi	-0.0285	0.10222	1.000	-0.3286	0.2717
	Kalimantan	-0.1339	0.09888	1.000	-0.4242	0.1565
	Bali–Nusa Tenggara	-0.0032	0.10043	1.000	-0.2981	0.2917

Note: Based on observed means. *. The mean difference is significant at the 0.05 level.

Source: Authors' calculation

4.8. Discussions

OECD (2012) highlights the importance of using perception surveys to gather valuable information from key stakeholders about their experiences and opinions. By doing so, it provides a more comprehensive understanding of the impact of regulations on businesses and the economy. This is particularly important for Indonesia because providing prompt and effective tax incentive poses greater challenges for developing nations, as they encounter increased difficulty in assisting others through the tax system (OECD, 2020a).[17] This empirical investigation provides a comprehensive examination of the challenges faced by Indonesian businesses amidst the COVID-19 pandemic and the role of tax incentives in ameliorating these obstacles. The findings hold crucial implications for devising targeted policies and support mechanisms to mitigate the pandemic's adverse impacts on businesses and foster economic recovery.

The study results emphasise the need to account for the heterogeneity of obstacles faced by various sectors and regions when formulating appropriate policy measures. Confirming other studies (see for example, Băhnăreanu, 2020; Chetty et al., 2020; Desai & Looze, 2020; ILO, 2020; Rio-Chanona et al., 2020; World Bank, 2020; Xiaojing, 2021; Das et al., 2022; Patil et al., 2022; UNCTAD, 2022a), a contraction in product demand emerged as the most pressing concern for businesses. In addition, suboptimal business capacity exhibited variation across industries, with the accommodation and food service sector encountering particularly acute hardships.

An in-depth assessment of tax incentives, encompassing the Article 21 Income Tax incentive, the Article 22 Income Tax incentive, the Article 25 Income Tax incentive, and the accelerated VAT refund incentive, reveals that the perceived utility of these incentives correlates with the size and nature of the business. Supporting World Bank (2022), the study indicates that larger businesses with more permanent employees are more likely to benefit from these incentives, thus underscoring the need for policymakers to develop targeted incentives aligned with the specific needs of diverse business types. According to World Bank (2022), the crisis had a regressive effect on businesses, similar to its impact on households. That is, the impact of the situation was more pronounced on enterprises with limited access to formal credit, smaller businesses, and those operating informally (World Bank, 2022). Smaller businesses typically also encounter more significant financial limitations (World Bank, 2022).

The examination of the interest in tax incentives and businesses' propensity to employ them in the future discloses a high degree of interest across all primary market segment categories and revenue groups. This result implies that the perceived utility of these incentives transcends market segment or revenue group considerations and bears substantial implications for devising effective tax incentives stimulating business growth and investment in the economy.

Statistical methodologies, including one-way ANOVA and regression analysis, furnish evidence of a positive association between the utilisation of tax incentives and the level of business performance during the pandemic. Businesses employing tax incentives experienced enhanced performance and elevated liquidity relative to those that did not. These findings accentuate the salience of financial liquidity in preserving business performance amidst the COVID-19 crisis and the function of tax incentives in fostering business growth and resilience. Nevertheless, the investigation also reveals that businesses with mixed or overseas primary market shares did not exhibit statistically significant outcomes, despite positive coefficients. This observation necessitates further research to scrutinise the factors influencing these businesses' resilience and potential impediments to tax incentive utilisation.

Based on the responsiveness criterion, the findings suggest that policy outcomes align with the needs and preferences of various groups. The survey results provide evidence that tax incentives address the financial requirements of participants across diverse market segments and revenue categories. A majority of respondents utilising the incentives perceived them as either 'highly advantageous' or 'advantageous', suggesting that the policy effectively caters to the needs of its target population. Furthermore, the equitable distribution of perceptions across all island groups emphasises the inclusive nature of the policy and its adaptability to different regional contexts.

[17] That is, it is common in developing economies a multitude of businesses underpay or inadequately pay taxes due to the prevalence of the informal economy; consequently, they are unable to capitalise on tax payment waivers, extensions, or expedited refunds. With fewer individuals receiving welfare payments and social benefits, the capacity for governments to utilise existing mechanisms and policies to offer additional benefits is limited (OECD, 2020a).

Regarding appropriateness, the findings indicate that the policy is particularly well-suited for larger businesses, which likely exert a more substantial influence on the economy. Additionally, the high level of interest expressed by respondents in employing incentives in the future further corroborates the suitability of tax incentives in achieving valuable outcomes for businesses. However, the incremental increase in the proportion of participants perceiving the incentives as highly advantageous, as revenue and employee size grow, suggests that the benefits may not be distributed equitably among various groups.

Concerning effectiveness, the results imply that the utilisation of tax incentives positively correlates with business performance and cash adequacy. The regression analysis results reveal a positive and significant relationship between receiving tax incentives and improved business performance. Furthermore, the coefficients of cash adequacy dummies provide evidence that enhanced cash adequacy is positively correlated with superior business performance. The findings indicate that businesses utilising tax incentives experienced higher liquidity compared to those that did not.

In terms of adequacy, our analysis suggests that employing tax incentives leads to improved cash adequacy and enhanced business performance, which are valuable outcomes in mitigating the adverse effects of the pandemic on businesses. The results also reveal that businesses in various locations experience different levels of cash liquidity when utilising tax incentives. However, the adequacy of these findings may be constrained by several factors. Firstly, the results indicate that businesses with mixed or overseas primary markets do not exhibit statistically significant improvements in business performance due to tax incentives. Secondly, the cash adequacy levels of businesses Bali–Nusa Tenggara are not significantly different, irrespective of tax incentives utilisation. This implies that tax incentives may be insufficient in addressing the specific challenges encountered by certain types of businesses or those operating in particular regions.

5. CONCLUSION AND POLICY RECOMMENDATION

5.1. Conclusion

In this paper, we analyse the challenges Indonesian businesses faced during the COVID-19 pandemic and the role of tax incentives in addressing these issues. Our findings hold implications for developing targeted policies and support mechanisms to mitigate the pandemic's adverse effects on businesses and facilitate economic recovery.

Our results highlight the importance of considering obstacles' heterogeneity across sectors and regions when devising appropriate policy measures. We identify a decline in product demand as the most pressing issue, with reduced business capacity varying among sectors particularly affecting the accommodation and food service sector. We examine a set of tax incentives consisting of the Article 21 Income Tax incentive, the Article 22 Income Tax incentive, the Article 25 Income Tax incentive, and the accelerated VAT refund incentive, finding their perceived usefulness depends on business size and nature. Larger businesses with more permanent employees are more likely to benefit, emphasising the need for targeted incentives addressing diverse business types' specific needs.

Our study contributes to understanding tax incentives' role in promoting business resilience in Indonesia. The survey data demonstrates that policy outcomes align with various groups' needs and preferences. Tax incentives effectively address the financial requirements of diverse market segments and revenue categories. The policy's inclusivity and adaptability to different regional contexts are emphasised by the equitable distribution of perceptions. The policy is particularly well-suited for larger businesses, but benefits may not be distributed equitably among different groups. Tax incentives positively correlate with business performance and cash adequacy, with higher liquidity experienced by businesses utilising them. However, the adequacy of these findings may be limited, as businesses with mixed or overseas primary markets do not exhibit significant improvements in business performance due to tax incentives, and cash adequacy levels of businesses in Bali–Nusa Tenggara are not significantly different, regardless of tax incentives utilisation.

In conclusion, this study contributes significantly to comprehending the role of tax incentives in promoting business resiliency in Indonesia, particularly during the COVID-19 crisis. In the realm of tax

policy implementation, it is vital for governmental authorities to develop efficacious communication and public relations strategies explicating the merits of tax incentives. By embracing such an approach, policymakers can ensure alignment with increasingly targeted and robust measures aimed at addressing the evolving impacts and risks encountered by businesses. This requires the segmentation of specific business groups to enhance their participation levels. Government agencies or affiliated entities might also contemplate the application of behavioural methodologies in executing policy interventions. Nevertheless, further analysis is needed to attain a more exhaustive understanding of these findings. Subsequent research could explore additional variables that may impact the perceived efficacy and benefits of tax incentives, as well as the specific factors driving interest in tax incentives and potential barriers to their utilisation among businesses.

5.2. Policy recommendation

In light of the comprehensive analysis of the challenges faced by Indonesian businesses during the COVID-19 pandemic and the role of tax incentives in addressing these issues, we put forth the following policy recommendations.

Firstly, perception surveys can be used to gather valuable insights from various stakeholders, such as businesses, regarding their experiences with tax incentives during the economic crisis. Secondly, policymakers should account for the diverse challenges experienced by businesses across different sectors and regions when formulating tax incentives. Our research reveals that larger businesses with a more substantial permanent workforce are more likely to benefit from tax incentives, such as the Article 21 Income Tax incentive, Article 22 Income Tax incentive, and Article 25 Income Tax incentive. Consequently, policymakers should devise targeted tax incentives that cater to the unique needs of various businesses, considering factors such as industry and business size.

Thirdly, our empirical investigation demonstrates that firms utilising tax incentives exhibit enhanced performance and increased liquidity compared to those that do not. In light of the critical role financial liquidity plays in sustaining business operations during the COVID-19 crisis, policymakers should persist in implementing tax incentives that bolster business growth and resilience. To optimise the benefits of tax incentives, government authorities must establish and execute effective communication and public relations strategies elucidating their advantages. This encompasses providing lucid, accessible information on tax incentives and ensuring businesses understand the ways they can profit from these incentives.

Fourthly, given the widespread interest in tax incentives across all primary market segment categories and revenue groups, government agencies or affiliated entities should contemplate employing behavioural methodologies to execute policy interventions. This method would entail segmenting specific business groups and crafting targeted policies to augment their participation levels in tax incentive programmes. Our research also uncovers a knowledge gap regarding the determinants of resilience among businesses with mixed or overseas primary market shares, as well as potential barriers to tax incentive utilisation. Policymakers should endorse further investigation into these factors and develop suitable policy measures to address them.

Lastly, to gain a deeper understanding of tax incentive dynamics, future studies should explore additional variables influencing their perceived efficacy and benefits. This involves examining the specific factors driving interest in tax incentives and potential obstacles to their utilisation among businesses. By adopting these policy recommendations, policymakers can devise targeted tax incentives effectively encouraging business growth, investment, and economic recovery in Indonesia. Moreover, these policies will contribute to tackling the ongoing impacts and risks faced by businesses in the aftermath of the COVID-19 crisis.

5.3. Limitation

It is important to acknowledge the limitations of this study. The reliance on perception surveys, short-term observation, a focus on larger businesses, and the limited scope of tax incentives examined may restrict the applicability of the findings to other contexts or smaller businesses. Additionally, the regression analysis may not fully account for confounding factors, and the lack of significant results for some business types and regions calls for further investigation.

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7. REFERENCES

ADB, see Asian Development Bank

Alberola, E., Arslan, Y., Cheng, G., & Moessner, R. (2021). Fiscal response to the COVID-19 crisis in advanced and emerging market economies. *Pacific Economic Review*, *26*(4), 459–468. https://doi.org/10.1111/1468-0106.12370

Arsal, Y., Rosid, A., & Sukaryo, S. (2022). Balancing the scale: Providing tax incentives and collecting revenue. In S. M. Indrawati, S. Nazara, T. Anas, C. F. Ananda, & K. Verico (Eds.), *Keeping Indonesia safe from the COVID-19 pandemic: Lessons learnt from the National Economic Recovery Programme* (pp. 213–254). ISEAS Publishing.

Asian Development Bank. (2020). *Asian Development Outlook 2020: What Drives Innovation in Asia?* https://doi.org/10.22617/FLS200119-3

Asian Development Bank. (2021). *COVID-19 Impact on Micro, Small, and Medium-Sized Enterprises and Post–Crisis Actions One-Year after the Outbreak in Indonesia*. https://www.adb.org/sites/default/files/event/723696/files/indonesia-covid-19-impact-msmes-aiw.pdf

Bănănreanu, C. (2020). The economic impact of Covid-19 pandemic at the beginning of 2020. *Strategic Impact*, (75), 102–112.

Chetty, R., Friedman, J. N., Hendren, N., Stepner, M., & the Opportunity Insights Team. (2020). *The economic impact of Covid-19: Evidence from a new public database built using private sector data* (No. 27431; NBER Working Paper). https://www.nber.org/papers/w27431

Clampit, J. A., Lorenz, M. P., Gamble, J. E., & Lee, J. (2021). Performance stability among small and medium-sized enterprises during COVID-19: A test of the efficacy of dynamic capabilities. *International Small Business Journal: Researching Entrepreneurship*, *40*(3), 403–419. https://doi.org/10.1177/02662426211033270

Collier, R., Pirlot, A., & Vella, J. (2020). Tax policy and the COVID-19 crisis. *Intertax*, *48*(8/9), 794–804. https://doi.org/10.54648/TAXI2020078

Das, D., Sarkar, A., & Debroy, A. (2022). Impact of COVID-19 on changing consumer behaviour: Lessons from an emerging economy. *International Journal of Consumer Studies*, *46*(3), 692–715. https://doi.org/10.1111/ijcs.12786

Desai, S., & Looze, J. (2020). *Business owner perceptions of COVID-19 effects on the business: Preliminary findings*. https://www.kauffman.org/entrepreneurship/reports/business-owner-perceptions-covid-19/

Devereux, M. P., Güçeri, İ., Simmler, M., & Tam, E. H. F. (2020). Discretionary fiscal responses to the COVID-19 pandemic. *Oxford Review of Economic Policy*, *36*(Supplement_1), S225–S241. https://doi.org/10.1093/oxrep/graa019

DGT, see Directorate General of Taxation

Directorate General of Taxation. (2021). *Tax incentives for COVID-19 pandemic in 2020: Facilities and their impacts on businesses (Insentif pajak pandemi COVID-19 tahun 2020: Fasilitas dan dampaknya terhadap dunia usaha)*. Directorate General of Taxation, Ministry of Finance of the Republic of Indonesia.

Dunn, W. N. (2018). *Public policy analysis: An integrated approach* (6th ed.). Routledge.

Engidaw, A. E. (2022). Small businesses and their challenges during COVID-19 pandemic in developing countries: In the case of Ethiopia. *Journal of Innovation and Entrepreneurship*, *11*(1). https://doi.org/10.1186/s13731-021-00191-3

Fairlie, R. (2020). The impact of COVID-19 on small business owners: Evidence from the first 3 months after widespread social-distancing restrictions. *Journal of Economics and Management Strategy*, *29*(4), 727–740. https://doi.org/10.1111/jems.12400

Ferreira dos Santos, G., Santana Ribeiro, L. C., & Barbosa de Cerqueira, R. (2020). The informal sector and COVID-19 economic impacts: The case of Bahia, Brazil. *Regional Science Policy & Practice*, *12*(6), 1273–1285. https://doi.org/10.1111/rsp3.12366

Fu, M., & Shen, H. (2020). COVID-19 and corporate performance in the energy industry. *Energy Research Letters*, *1*(1). https://doi.org/10.46557/001c.12967

Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., & Vermeersch, C. M. J. (2016). *Impact evaluation in practice* (2nd ed.). Inter-American Development Bank and World Bank. https://doi.org/10.1596/978-1-4648-0779-4

Häder, M. (2008). The use of scales in surveys. In W. Donsbach & M. W. Traugott (Eds.), *Handbook of public opinion research* (pp. 388–397). SAGE Publications.

Heeringa, S. G., West, B. T., & Berglund, P. A. (2010). *Applied survey data analysis*. Chapman and Hall/CRC. https://doi.org/10.1201/9781420080674

Hummel, M., Hutter, C., & Weber, E. (2023). A note on labour market effects of supply chain bottlenecks. *Applied Economics Letters*, 1–7. https://doi.org/10.1080/13504851.2023.2176429

ILO, see International Labour Office

IMF, see International Monetary Fund

International Labour Office. (2020). *A Global Survey of Enterprises: Managing the Business Disruptions of COVID-19*. https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---act_emp/documents/publication/wcms_760306.pdf

International Monetary Fund. (2021a). *Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic - Country Fiscal Measures Database October 2021*. IMF. https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to COVID-19

International Monetary Fund. (2021b). *World economic outlook: Managing divergent recoveries*. https://www.imf.org/en/Publications/WEO/Issues/2021/03/23/world-economic-outlook-april-2021

Kennickell, A. B., Kwast, M. L., & Pogach, J. (2017). Small businesses and small business finance during the financial crisis and the great recession: New evidence from the survey of consumer finances. In J. Haltiwanger, E. Hurst, J. Miranda, & A. Schoar (Eds.), *Measuring entrepreneurial businesses: Current knowledge and challenge* (pp. 291–350). University of Chicago Press. https://doi.org/10.7208/chicago/9780226454108.003.0007

Khandker, S., B. Koolwal, G., & Samad, H. (2010). *Handbook on impact evaluation: Quantitative methods and practices*. World Bank. https://doi.org/10.1596/978-0-8213-8028-4

Kolasa, M., Rubaszek, M., & Taglioni, D. (2010). Firms in the great global recession: The role of foreign ownership and financial dependence. *Emerging Markets Review*, *11*(4), 341–357. https://doi.org/10.1016/j.ememar.2010.06.001

Lopes, J. M., Gomes, S., & Mané, L. (2022). Developing knowledge of supply chain resilience in less-developed countries in the pandemic age. *Logistics*, *6*(1), 3. https://doi.org/10.3390/logistics6010003

McKerchar, M. (2012). Designing and administering surveys. In L. Oats (Ed.), *Taxation: A fieldwork research handbook* (pp. 34–42). Routledge.

Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Pearson Education Limited.

OECD, see Organisation for Economic Co-operation and Development

Organisation for Economic Co-operation and Development. (2012). *Measuring regulatory performance: A practitioner's guide to perception surveys*. OECD Publishing. https://doi.org/10.1787/9789264167179-en

Organisation for Economic Co-operation and Development. (2020a). *Tax and Fiscal Policy in Response to the Coronavirus Crisis: Strengthening Confidence and Resilience*. https://www.oecd.org/tax/tax-policy/tax-and-fiscal-policy-in-response-to-the-coronavirus-crisis-strengtheningconfidence-and-resilience.htm

Organisation for Economic Co-operation and Development. (2020b). *Revenue statistics in Asian and Pacific economies 2020*. OECD Publishing. https://doi.org/10.1787/d47d0ae3-en

Organisation for Economic Co-operation and Development. (2021). *Tax policy reforms 2021: Special edition on tax policy during the COVID-19 pandemic*. OECD Publishing. https://doi.org/10.1787/427d2616-en

Patil, G. R., Dhore, R., Bhavathrathan, B. K., Pawar, D. S., Sahu, P., & Mulani, A. (2022). Consumer responses towards essential purchases during COVID-19 pan-India lockdown. *Research in Transportation Business & Management*, *43*, 100768. https://doi.org/10.1016/j.rtbm.2021.100768

Paul, S. K., & Chowdhury, P. (2021). A production recovery plan in manufacturing supply chains for a high-demand item during COVID-19. *International Journal of Physical Distribution & Logistics Management*, *51*(2), 104–125. https://doi.org/10.1108/IJPDLM-04-2020-0127

Paul, S. K., Chowdhury, P., Moktadir, Md. A., & Lau, K. H. (2021). Supply chain recovery challenges in the wake of COVID-19 pandemic. *Journal of Business Research*, *136*, 316–329. https://doi.org/10.1016/j.jbusres.2021.07.056

Qin, X., Huang, G., Shen, H., & Fu, M. (2020). COVID-19 pandemic and firm-level cash holding—moderating effect of goodwill and goodwill impairment. *Emerging Markets Finance and Trade*, *56*(10), 2243–2258. https://doi.org/10.1080/1540496X.2020.1785864

Raj, A., Mukherjee, A. A., de Sousa Jabbour, A. B. L., & Srivastava, S. K. (2022). Supply chain management during and post-COVID-19 pandemic: Mitigation strategies and practical lessons learned. *Journal of Business Research*, *142*, 1125–1139. https://doi.org/10.1016/j.jbusres.2022.01.037

Ridhwan, M. M., Suryahadi, A., Rezki, J. F., & Andariesta, D. T. (2023). The impact of COVID-19 on the labour market and the role of E-commerce development in developing countries: Evidence from Indonesia. *Journal of the Asia Pacific Economy*, 1–44. https://doi.org/10.1080/13547860.2023.2195710

Rio-Chanona, R. M., Mealy, P., Pichler, A., Lafond, F., & Farmer, J. D. (2020). Supply and demand shocks in the COVID-19 pandemic: An industry and occupation perspective. *Oxford Review of Economic Policy*, *36*(Supplement_1), S94–S137. https://doi.org/10.1093/oxrep/graa033

Sarantakos, S. (2013). *Social research* (4th ed.). Palgrave Macmillan.

Saris, W. E., & Gallhofer, I. N. (2014). *Design, evaluation, and analysis of questionnaires for survey research*. Wiley. https://doi.org/10.1002/9781118634646

Sen, T. K. (2021). *Exit Strategy to Ease or Eliminate Tax Responses to the COVID-19 Pandemic*. ADB. http://dx.doi.org/10.22617/BRF210142

Shen, H., Fu, M., Pan, H., Yu, Z., & Chen, Y. (2020). The impact of the COVID-19 pandemic on firm performance. *Emerging Markets Finance and Trade*, *56*(10), 2213–2230. https://doi.org/10.1080/1540496X.2020.1785863

UNCTAD, see United Nations Conference on Trade and Development

UNDP, see United Nations Development Programme

UNIDO, see United Nations Industrial Development Organization

United Nations Conference on Trade and Development. (2022a). *Impact of the COVID-19 pandemic on trade and development: Lessons learned*. UNCTAD. https://unctad.org/system/files/official-document/osg2022d1_en.pdf

United Nations Conference on Trade and Development. (2022b). *The COVID-19 pandemic impact on micro, small and medium sized enterprises: Market access challenges and competition policy*. UNCTAD. https://unctad.org/system/files/official-document/ditcclp2021d3_en.pdf

United Nations Development Programme. (2020). *Impact of COVID-19 Pandemic on MSMEs in Indonesia*. https://www.undp.org/sites/g/files/zskgke326/files/migration/id/INS-Report-Impact-of-COVID-19-Pandemic-on-MSMEs-in-Indonesia.pdf

United Nations Industrial Development Organization. (2020). *Impact Assessment of COVID-19 on Indonesia's Manufacturing Firms*. https://www.unido.org/sites/default/files/files/2021-03/UNIDO%20COVID19%20Assessment_Indonesia_FINAL.pdf

Vaus, D. (2014). *Surveys in social research* (6th ed.). Allen & Unwin.

Weisberg, H. F. (2008). The methodological strengths and weaknesses of survey research. In W. Donsbach & M. W. Traugott (Eds.), *Handbook of public opinion research* (pp. 223–231). SAGE Publications.

Wiseman, F. (1972). Methodological bias in public opinion surveys. *Public Opinion Quarterly*, *36*(1), 105–108. https://doi.org/10.1086/267981

World Bank. (2020). *COVID-19 Impact on Firms in Indonesia: Results from the COVID-19 Business Pulse Survey Round 1 May-June 2020*. https://pubdocs.worldbank.org/en/685761610628182538/Indonesia-COVID-Firms-Round-1.pdf

World Bank. (2021). *A Review of Fiscal Policy Responses to COVID-19*. https://openknowledge.worldbank.org/handle/10986/35904

World Bank. (2022). *World Development Report 2022: Finance for an equitable recovery*. World Bank. https://doi.org/10.1596/978-1-4648-1730-4

Xiaojing, Z. (2021). Impact of the COVID-19 pandemic on the demand side and countermeasures. In C. Fang (Ed.), *Economics of the pandemic: weathering the storm and restoring growth* (pp. 141–159). Routledge.

APPENDICES

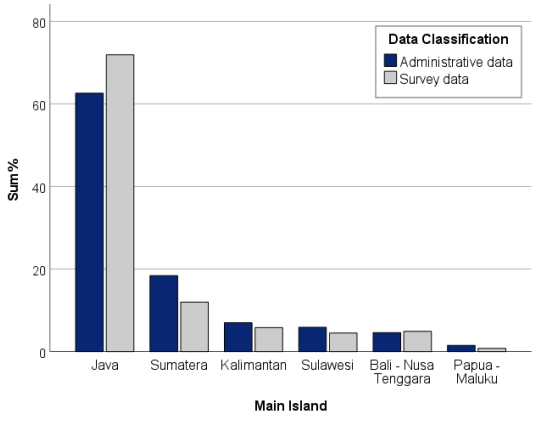
Appendix 1. Position or job title of survey respondents

	Tax incentives utilisation in 2021				Total	
	No		Yes			
Owner (of a private business)	699	(9.3%)	293	(3.9%)	992	(13.2%)
Staff	1,061	(14.1%)	1,706	(22.7%)	2,767	(36.8%)
Manager or equivalent position	649	(8.6%)	1,130	(15.0%)	1,779	(23.6%)
Director or equivalent position	1,129	(15.0%)	708	(9.4%)	1,837	(24.4%)
Commissioner or other supervisory position	114	(1.5%)	39	(0.5%)	153	(2.0%)
	3,652	(48.5%)	3,876	(51.5%)	7,528	(100.0%)

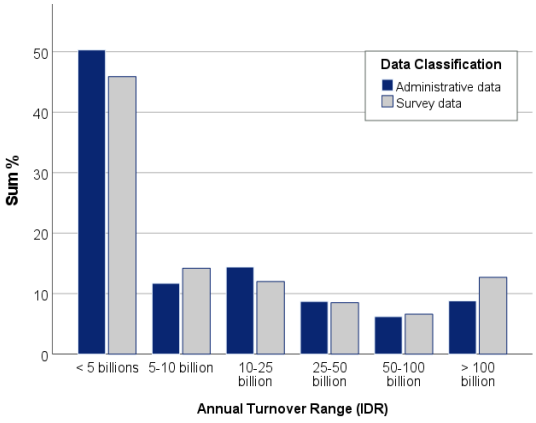
Source: Authors' calculation

Appendix 2. Representativeness tests

Panel A: Comparison by location



Panel B: Comparison by annual turnover range

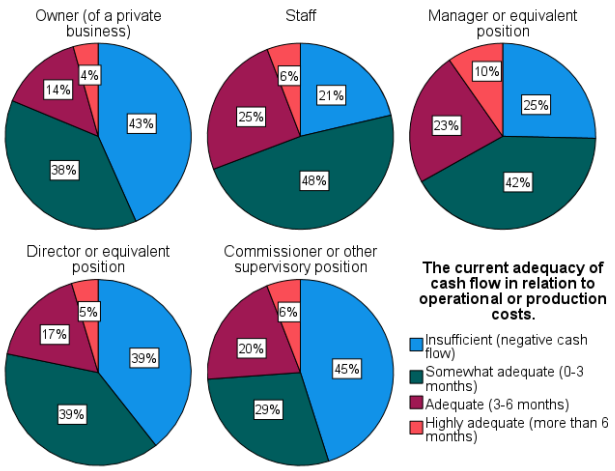


Note: Panel A illustrates the comparison between the proportion of survey respondents and the proportion of the total number of taxpayers who are targeted in this study, based on the distribution of six island groups. For instance, the graph shows that the proportion of taxpayers targeted in Java Island was approximately 63%, whereas the proportion of survey respondents located in Java Island was 72%. The comparison for Sumatra Island was 18% and 12%, respectively. Kalimantan Island was 7% and 6%, Sulawesi Island was 6% and 5%, Bali and Nusa Tenggara were both 5% and 5%, and the smallest proportion was found in Papua and Maluku Islands, with 2% and 1% respectively. Panel B depicts the comparison between the proportion of survey respondents and the proportion of the total number of taxpayers who are targeted in this study, based on the distribution of six categories of annual turnover. For instance, the graph shows that the proportion of taxpayers targeted with an annual turnover of less than IDR 5 billion was around 50%, whereas the proportion of survey respondents in the same turnover category was 46%. The comparison for the turnover category of IDR 5-10 billion was 12% and 14% respectively. For the turnover category of IDR 10-25 billion, the proportions were 14% and 12%, for IDR 25-50 billion they were both 9%, for IDR 50-100 billion they were 6% and 7%, and finally, for the turnover category of over IDR 100 billion, the proportions were 9% and 13% respectively.

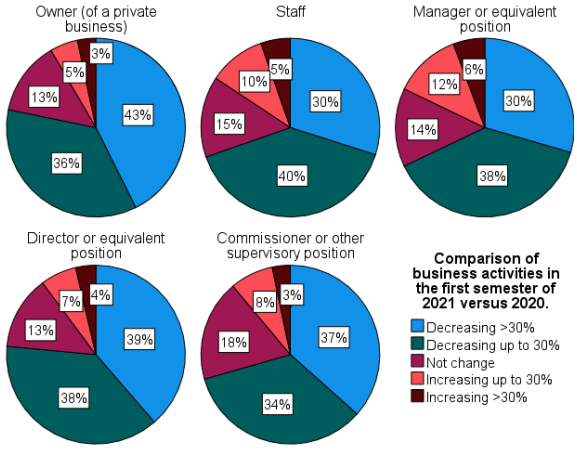
Source: Authors' calculation

Appendix 3. Distribution of responses based on respondents' position or job title

Panel B: Distribution based on level of cash adequacy



Panel B: Distribution based on level of business performance



Note: These graphs depict the distribution of responses based on the cash sufficiency (Panel A) and business performance (Panel B) levels of respondents. Panel A indicates that the proportions of various categories of respondents are comparable, with regard to the inquiry about cash adequacy. In particular, the proportion of 'highly adequate' remains stable between 4% and 10%, whereas the proportions of 'insufficient' and 'somewhat adequate' vary from 21% to 45% and 29% to 48%, respectively. It is therefore reasonable to conclude that survey respondents had a similar comprehension when responding to the query, regardless of their professions. Panel B indicates that the proportions of various categories of respondents are comparable, with regard to the inquiry about business performance. In particular, the proportion of 'increasing › 30%' remains stable between 3% and 6%, whereas the proportions of 'increasing up to 30%' and 'not change' vary from 5% to 12% and 13% to 18%, respectively. It is therefore reasonable to conclude that survey respondents had a similar comprehension when responding to the query, regardless of their professions. Notable is the fact that only 2% of all respondents held the status of Commissioner or other supervisory position (as shown in Appendix 1).

Source: Authors' calculation

Appendix 4. Descriptive statistics

N = 7,528	Min.	Max.	Mean	SD	Variance
1. Business locations (islands)	1	6	2.23	0.988	0.976
2. Have you utilised the tax incentives in 2021?	0	1	0.51	0.500	0.250
3. The number of permanent employees	1	7	3.09	1.565	2.449
4. The average annual sales before the COVID-19 pandemic (in IDR billion)	1	6	2.54	1.805	3.258
5. The most challenging difficulty affecting business activities during the first semester of 2021	1	5	3.03	1.493	2.229
6. The main strategy in maintaining the sustainability of business activities	1	6	3.41	1.845	3.404
7. Did you/your business utilise the government-borne Article 21 Income Tax incentive in 2021?	0	1	0.39	0.487	0.237
8. The benefits of the government-borne Article 21 Income Tax incentive in 2021	0	5	1.71	2.219	4.924
9. Interested in utilising the government-borne Article 21 Income Tax incentive again in the future	0	5	1.75	2.257	5.096
10. Did you/your business utilise the exemption of income tax on imports (Article 22 Income Tax) incentive in 2021?	0	1	0.14	0.345	0.119
11. The benefits of the exemption of income tax on imports (Article 22 Income Tax) incentive in 2021	0	5	0.63	1.599	2.558
12. Interested in utilising the exemption of income tax on imports (Article 22 Income Tax) incentive again in the future	0	5	0.63	1.612	2.598

13. Did you/your business utilise the 50% reduction in income tax monthly instalment (Article 25 Income Tax) incentive in 2021?	0	1	0.29	0.452	0.204
14. The benefits of the 50% reduction in income tax monthly instalment (Article 25 Income Tax) incentive in 2021	0	5	1.30	2.099	4.406
15. Interested in utilising the 50% reduction in income tax monthly instalment (Article 25 Income Tax) incentive again in the future	0	5	1.31	2.116	4.477
16. Did you/your business utilise the accelerated value added tax (VAT) refund incentive in 2021?	0	1	0.06	0.241	0.058
17. The benefits of the accelerated VAT refund incentive in 2021	0	5	0.28	1.106	1.223
18. Interested in utilising the accelerated VAT refund incentive again in the future	0	5	0.28	1.104	1.219
19. Comparison of business activities in the first semester of 2021 vs. 2020	1.00	5.00	2.127	1.118	1.251
20. The adequacy of the business cash flow compared to operational expenses.	1.00	4.00	2.036	0.873	0.762

Source: Authors' calculation

Appendix 5. Crosstabulation for correspondence analysis

Appendix 5A. Business hindrances by business location

Correspondence Table

The most challenging difficulty affecting business activities during the first semester of 2021	Business locations						
	Sumatra	Java	Sulawesi	Kalimantan	Bali - Nusa Tenggara	Papua - Maluku	Total
Production cost	146	503	38	59	25	7	778
Product demand	380	2,624	127	183	186	34	3,534
Product distribution	46	239	13	22	18	2	340
Supply of inputs	67	327	20	23	15	3	455
Business capacity	267	1,717	115	151	126	45	2,421
Total	906	5,410	313	438	370	91	7,528

Source: Authors' calculation

Appendix 5B. Business hindrances by annual turnover

Correspondence Table

The most challenging difficulty affecting business activities during the first semester of 2021	The average annual sales prior to the COVID-19 pandemic (in billion)						
	‹ IDR 5	IDR 5 - 10	IDR 10 - 25	IDR 25 - 50	IDR 50 - 100	› IDR 100	Total
Production cost	328	115	91	74	74	96	778
Product demand	1,638	521	461	300	230	384	3,534
Product distribution	137	63	39	28	19	54	340
Supply of inputs	139	55	50	48	40	123	455
Business capacity	1,215	317	263	193	135	298	2,421
Total	3,457	1,071	904	643	498	955	7,528

Source: Authors' calculation

Appendix 6. ANOVA for adequacy of cash flow

Appendix 6A. Descriptive statistics

Dependent Variable: The current adequacy of cash flow				
Have you utilised the tax incentives in 2021?		Mean	SD	N
No	Sumatra	1.7818	0.80279	550
	Java	1.9690	0.89576	2386
	Sulawesi	1.7005	0.82859	207
	Kalimantan	1.8105	0.78470	248
	Bali - Nusa Tenggara	1.8081	0.86296	198
	Papua - Maluku	1.6190	0.77102	63
	Total	1.9001	0.87268	3652
Yes	Sumatra	2.1124	0.79701	356
	Java	2.1978	0.85071	3024
	Sulawesi	2.0849	0.76988	106
	Kalimantan	2.1000	0.89413	190
	Bali - Nusa Tenggara	1.8023	0.92173	172
	Papua - Maluku	2.2143	0.87590	28
	Total	2.1646	0.85323	3876
Total	Sumatra	1.9117	0.81623	906
	Java	2.0969	0.87816	5410
	Sulawesi	1.8307	0.82824	313
	Kalimantan	1.9361	0.84525	438
	Bali - Nusa Tenggara	1.8054	0.88955	370
	Papua - Maluku	1.8022	0.84616	91
	Total	2.0363	0.87274	7528

Source: Authors' calculation

Appendix 6B. Robustness tests for cash adequacy

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
The current adequacy of cash flow in relation to operational or production costs.	Based on Mean	2.078	11	7,516	0.019
	Based on Median	3.284	11	7,516	0.000
	Based on Median and with adjusted df	3.284	11	7,427.899	0.000
	Based on trimmed mean	3.027	11	7,516	0.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: The current adequacy of cash flow

b. Design: Intercept + Q19_EN + Q2_Island + Q19_EN * Q2_Island

Tests of Between-Subjects Effects

Dependent Variable:								
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	195.910[a]	11	17.810	24.175	0.000	0.034	265.922	1.000
Intercept	5,889.815	1	5,889.815	7,994.642	0.000	0.515	7,994.642	1.000
Tax incentive status	36.354	1	36.354	49.345	0.000	0.007	49.345	1.000
Location (island)	48.078	5	9.616	13.052	0.000	0.009	65.260	1.000
Tax incentive status * Location	11.661	5	2.332	3.166	0.007	0.002	15.828	0.886
Error	5,537.190	7516	0.737					
Total	36,947.000	7528						
Corrected Total	5,733.100	7527						

a. R Squared = .034 (Adjusted R Squared = .033)

b. Computed using alpha = .05

Source: Authors' calculation