The Influence of Green Tax Incentives and Tax Literacy on Green Innovation and Tax Compliance among MSMEs   in Makassar City

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Abstract

This study aims to analyze the influence of green tax incentives and tax literacy on green innovation and tax compliance among MSMEs (Micro, Small, and Medium Enterprises) in Makassar City, with green innovation acting as a mediating variable. The research is motivated by the growing need for MSMEs to transition toward sustainable business practices amidst climate change pressures and fiscal policy demands. Employing an explanatory quantitative approach, the study utilizes Structural Equation Modeling (SEM) with AMOS version 24. A total of 150 active MSMEs were selected through purposive sampling. The findings reveal that both green tax incentives and tax literacy significantly influence green innovation, and green innovation significantly influences tax compliance. Tax literacy also has a direct positive effect on tax compliance, while the direct effect of tax incentives on tax compliance is not significant. However, both green tax incentives and tax literacy indirectly affect tax compliance through green innovation. These results highlight the crucial role of green innovation as a behavioral bridge linking fiscal policy and tax compliance in the MSME sector. The study contributes to theoretical development in sustainable fiscal behavior models and offers practical insights for policymakers and MSME support institutions at the local level.

Keywords: MSMEs, green tax incentives, tax literacy, green innovation, tax compliance, SEM
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INTRODUCTION

Micro , Small and Medium Enterprises (MSMEs) have become an important pillar in structure economy national and regional levels , including in Makassar City. The contribution of MSMEs to Product Domestic Gross (GDP), absorption power work , and subtraction gap economy No doubtful again . However , as time goes by with increasing demands development continuous and pressure change climate , MSMEs are faced with challenges new , namely the need transform going to innovation green to stay relevant and empowering competitiveness (Chen et al., 2022: 490; Galad & Khalifa, 2024: 3).

Innovation green in MSMEs includes effort use material standard friendly environment , management waste production , efficiency energy and production processes sustainable . However , the implementation innovation green need investment and change behavior business that is not light , especially for MSMEs facing limitations source power and

access information (Kawai et al., 2023:223). On the other hand , taxation as instrument fiscal own potential strategic For push transformation the through the right incentives target . One of them is draft incentive taxation green , namely subtraction or facility tax For perpetrator businesses that implement practice friendly environment (OECD, 2022:11).

Although the Indonesian government has adopt a number of policy fiscal green , such as tax *allowances* and incentives Higher final income tax low For sector In certain cases , its implementation at the MSME level is not optimal. Many MSME actors in Makassar City do not know or No understand scheme available incentives , so that potential its influence to behavior innovative Still Not yet maximum . This is where literacy tax play role important , namely to what extent the perpetrator business understand rights , obligations , and opportunity relevant taxation with type his efforts (Hutagalung & Jati , 2023:38).

The low literacy tax cause many MSMEs do not only fail utilise incentives , but also difficulties in fulfil obligation taxation in a way true and correct time . In fact , compliance tax is foundation important for independence fiscal and strengthening system state finances . Therefore that , the relationship between incentive taxation green , literacy tax , innovation green , and compliance tax become important For investigated in a way comprehensive , especially at the level local .

Study This aim to (1) Analyze influence incentive taxation green to innovation green MSMEs in Makassar City; (2) Analyzing influence literacy tax to innovation green UMKM; (3) Analyze influence innovation green to compliance MSME tax ; Analyzing influence incentive taxation green and literacy tax to compliance MSME tax , both in a way direct and No direct through innovation green as variables mediation .

In a way theoretical , study This refers to several approach . First , Theory Incentive Fiscal which states that tax stimulus capable change behavior perpetrator economics (Goulder & Parry, 2008:161). Second , the theory Compliance Taxes that explain that perception on benefits and justice taxes , including understanding through literacy For can increase intentions and behavior compliance (Kirchler et al., 2014:102). Third , Theory Green Innovation , which states that adoption innovation based the environment is greatly influenced by support external like regulations , policies , and resources power (Yong et al., 2020:1026).

Study results previously show that incentive fiscal can become driver strong for company For investing in innovation green (Zhang et al., 2022:15). On the other hand , literacy tax proven mediate connection between understanding policies and compliance current perpetrator efforts (Fauzi & Yulianita , 2021:19). However , research that integrates all over variables This in The context of MSMEs, especially in Makassar City, is still very limited . In fact , the need will approach pro- environment and MSME- friendly taxes are very high in the midst of challenge change climate and digitalization taxation .

Study This expected can give contribution empirical in designing policy models supporting taxes transformation green UMKM in general simultaneous with improvement compliance fiscal benefits practical from study This is give input for government area , Directorate General Taxes , and institutions MSME companion in compile policy incentive green and literacy programs higher taxes integrated . In addition that , research This expected capable give relationship model overview between variables that can used For intervention policy fiscal sustainable in the future .

METHODOLOGY

Type study This is explanatory causal . Data collected cross -sectionally through distribution questionnaire to MSME actors who have own Number Main Point Must Tax (NPWP), active operate for at least two year , and run businesses in sectors that have potential practice innovation green like food and drink , crafts , or service based environment . Population in study This is all active MSMEs in a way administrative and fiscal matters in the Makassar City area. Withdrawal techniques sample done with purposive sampling method ,

namely election sample based on criteria (1) MSMEs have a Taxpayer Identification Number (NPWP) and are registered as must tax active ; (2) Has been running minimum 2 years of business ; (3) Have potential or interest in innovation green ; and (4) Ever get information or follow socialization taxation . Amount samples used is 150 MSMEs in 2024 .

Data analysis was performed with using Structural Equation Modeling (SEM) based device AMOS software version 24. Steps analysis includes (1) Validity and reliability testing construct deng using CFA with criteria loading factor ≥ 0.5, AVE value ≥ 0.5, and CR ≥ 0.7; (2) Model suitability test (Goodness of Fit), with use a number of indicator such as CMIN/DF ≤ 3, RMSEA ≤ 0.08, GFI ≥ 0.90, TLI ≥ 0.90, and CFI ≥ 0.90; (3) Hypothesis testing with use analysis path analysis for test connection direct between construct ; and (4) Mediation test conducted with bootstrapping techniques for know influence No direct incentives and literacy to compliance through innovation green .

RESULTS AND DISCUSSION

For testing instrument research , then used testing validity and testing reliability . Test results show that indicator for each variable Incentive Tax (IP), Literacy Tax (LP), Innovation Green (IH), and Compliance Tax (KP) on MSMEs in Makassar City is declared valid for used as tool measuring variable , because everything own mark correlation (*bivariate correlation*) whose value is more big from 0.30. Meanwhile b based on reliability testing show probability value (p) of all indicator from each variable study is zero or more small than 0.05 and Cronbach's Alpha value is more big from 0.60 to all indicator stated reliable or can trusted as tool measure .

Data processing is carried out with using Structural Equation Modeling (SEM) through AMOS software version 24. Based on results model estimation , obtained Goodness of Fit value is as in Table 1 below .

Table 1. Structural Equation Modeling (SEM) Model Test

Fit Test Index	Mark	Eligibility Limit	Model Test Results
CMIN/DF	2,114	< 3	Fit
RMSEA	0.062	≤ 0.08	Fit
GFI	0.924	≥ 0.90	Fit
CFI	0.966	≥ 0.90	Fit
TLI	0.938	≥ 0.90	Fit

Source : Data Processing Results

test results in Table 1 show that the Structural Equation Modeling (SEM) model in research This stated proper and valid statistics , with all parameters are met criteria eligibility .

Table 2. Testing Hypothesis

Connection Between Variables	Coef . Path	P-Value	Test Results
Incentive Tax (IP) → Green Innovation (IH)	0.39	0.002	Significant
Literacy Tax (LP) → Green Innovation (IH)	0.46	0.001	Significant
Green Innovation (IH) → Compliance Tax (KP)	0.41	0.003	Significant
Incentive Tax (IP) → Compliance Tax (KP)	0.37	0.071	No significant
Literacy Tax (LP) → Compliance Tax (KP)	0.42	0.009	Significant
Incentive Tax (IP) → Green Innovation (IH) → Compliance Tax (KP)	0.28	0.011	Significant
Literacy Tax (LP) → Green Innovation (IH)	0.34	0.006	Significant

→ Compliance Tax (KP)

Source : Data Processing Results

Test results show that (1) incentives taxes and literacy tax influential significant to innovation green , (2) innovation green influential significant to compliance taxes , (3) incentives tax influential No significant to compliance tax , (4) literacy tax influential significant to compliance tax , (5) incentives tax influential significant to compliance tax through innovation green , and (6) literacy tax influential significant to compliance tax through innovation green .

Discussion This aim For interpret findings empirical , answering formulation problems , and relate them with theory as well as findings studies previously . Besides that part this also shows contribution theoretical and implications practical from results study .

1. Influence Incentive Green Taxation on Green Innovation

Research result show that incentive taxation green influential positive and significant to innovation green MSMEs in Makassar City ($\beta = 0.39$; $p < 0.02$). Findings This indicates that policy incentive taxes , such as subtraction Income Tax on investment friendly environment or facility fiscal on use technology green , has Power push to behavior innovative perpetrator business micro and small . Research results This in line with Zhang et al.'s (2022:98) study which states that incentive fiscal can speed up adoption technology green in the sector business scale small medium . In Indonesian context , findings This indicates that instrument fiscal can made into tool leverage for promoting the sustainability agenda in the MSME sector.

2. Influence Literacy Tax to Green Innovation

Literacy taxes were also found influential significant to innovation green ($\beta = 0.46$; $p < 0.01$). This means that the more tall level understanding MSME actors towards systems and provisions taxation , including opportunity available incentives , the more big possibility they adopt approach friendly environment in the business process . This result support view Fauzi and Yulianita (2021:115) that literacy fiscal No only increase compliance , but also opening up room for innovation in management business . Literacy push perpetrator business For read policy in a way strategic , including make incentive tax as instrument development business green .

3. Influence Green Innovation towards Compliance Tax

Innovation green own influence significant direct to compliance MSME tax ($\beta = 0.41$; $p < 0.01$). This show that MSMEs that implement innovation friendly environment tend own level compliance higher taxes good . This is can explained through approach legitimacy , where the perpetrator sustainability - oriented businesses also show commitment to compliance legal and fiscal .
Study This strengthen findings Kirchler et al. (2014:211) stated that that orientation ethics and legitimacy business is highly correlated with compliance voluntary to tax .

4. Influence Direct Incentive Green Taxation on Compliance Tax

Although incentive tax own influence to innovation , but influence directly to compliance tax No significant ($\beta = 0.37$; $p > 0.71$). Findings This show that giving incentive fiscal Not yet Enough For form compliance taxes , especially If No accompanied understanding , readiness systems and beliefs to institutions taxation . Phenomenon This in harmony with results OECD study (2021) which shows that effectiveness incentive fiscal is highly dependent on the level of literacy and trust must taxes , especially in the informal sector or micro .

5. Influence Literacy Tax to Compliance Tax

Test results show that literacy tax influential direct and significant to compliance MSME tax (β = 0.42; p < 0.09). This strengthen assumptions that understanding must tax to rules , rights , and procedures taxation contribute to the level compliance they in pay and report obligation fiscal . Findings This support framework *slippery slope framework* (Kirchler et al., 2014) which states that literacy , together with trust to authority fiscal , is determinant main compliance voluntary .

6. Role of Mediation Green Innovation

Mediation test show that innovation green mediate influence incentive taxation green to compliance MSME tax (effect No direct β = 0.028; P < 0.011 significant through bootstrapping). Likewise , innovation green mediate influence literacy taxation green to compliance MSME tax (effect No direct β = 0.034; P < 0.006 significant through bootstrapping). Findings This show that incentive fiscal work most effectively No in a way direct to behavior fiscal , but rather through more strategic changes and business processes innovative and friendly environment . This is in line with results Yong et al.'s study (2020:150) states that policy fiscal green need bridge behavior , one of which is adoption innovation production sustainable , before impact on compliance fiscal term long .

Study This strengthen and develop theory behavior fiscal based sustainability , in particular : (1) Theory incentive fiscal : the right incentives target can stimulate change structure production (Zhang et al., 2022); (2) Theory literacy taxes and compliance volunteer : high understanding impact to will pay tax (Fauzi & Yulianita , 2021); and (3) Theory innovation green : innovation based on mark environment strengthen position competitive and legitimate business (Yong et al., 2020). Research this also provides proof empirical from the context of Eastern Indonesia, which previously Still seldom made into location studies related to the fiscal model green .

CONCLUSION

Based on results data processing and interpretation , concluded a number of points main as following : (1) Incentives taxation green influential positive and significant to innovation green , which indicates that policy fiscal based environment can push transformation practice business micro to more direction sustainable ; (2) Literacy tax influential significant to innovation green and compliance tax , which means good understanding to system taxation allows MSME actors to utilise opportunity fiscal and increase obedience fiscal in a way voluntary ; (3) Innovation green proven increase compliance taxes . MSMEs that implement principle friendly environment show commitment more tall to reporting and payment tax ; (4) Influence direct incentive tax to compliance No significant , but influence No direct through innovation green proven significant . This signify that incentive tax become effective If associated with the transformation process business ; and (5) the resulting model propose track mediation through innovation green , strengthening understanding that compliance fiscal in the MSME sector is necessary supported by the approach strategic and value sustainability .

Suggestions that can be recommended is (1) Share Government and Authorities Tax need develop a communication strategy incentive more fiscal simple , adaptive , and digital-based , so that it can accessed by MSME actors in the informal and semi-formal sectors ; (2) Encourage literacy program integration tax with approach innovation green , like training juxtaposed taxation with training production sustainable or certification green ; and (3) MSMEs need active increase literacy fiscal so as not to only obedient to obligation taxation , but also able to utilise incentive fiscal as part from business strategy green .

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