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The role of audit information dissemination in curbing the contagion of tax noncompliance

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Abstract

Disclosure about tax evasion may trigger the contagion of such behavior. However, exposure to news about discovered misconduct can lead to deterrence as well. The economics-of-crime approach and social norm-based explanation suggest that exposure to news about evasion may influence the receiver of information to imitate such misconduct. In contrast, a Psychology-based explanation argues against contagion in taxpayers' misbehavior. This study aims to investigate the effect of disclosing evasion information by another taxpayer toward tax non-compliance and testing of the effectiveness of audit information dissemination to mitigate the contagion effect of such non-compliance that may be occurred. The research was conducted by using an experimental approach with a 2 x 2 between-subjects design. The results show that when information about tax evasion is publicly disclosed, unaudited taxpayers tend to imitate such misbehavior. However, the contagion effect of non-compliance can be mitigated by the official announcement of tax audit information.

Keywords: tax non-compliance, evasion information, contagion, tax audit information

Introduction

The amount of tax gap, the difference between the taxes that should be owed, and the tax paid, is still a severe problem in many countries (Palupi and Herianti, 2017). It shows a high level of non-compliance. Non-compliance reduces both public revenue and the availability of public services and also discriminates against honest taxpayers (Alm, 2012). Traditional compliance-inducing measures include penalty rates and audit structures. Audits are thought to have a direct deterrent effect on those individuals audited. Besides, perhaps of more importance, audits are also thought to have an indirect deterrent effect on individuals not audited (Alm, Jackson, and Mckee, 2009). However, the data showed that the tax audit rate was getting decreased. For example, according to Alm et al. (2006), in the United States, at the beginning of the 1960s, the level of audits on tax returns was about 6%, then dropped to 2.5% in the middle of the 1970s. In the next decade, this number is only around 1%. Based on the analysis report of the Inspector General of Taxes from 1997 to 2002, tax audits of individual taxpayers have decreased around 56%. As a result, at present, less than 1 percent of all individual tax returns are audited.

Alm et al. (2006) warn that the effect of declining audit rates is not confined to the direct effect due to fewer audited taxpayers. Instead, there is an indirect effect that spread to other taxpayers, which may respond to the reduced overall probability of audit perception following by lowering their compliance. Also, there is a chance for the occurrence of "unofficial" communication among taxpayers, which may indirectly affect an individual's level of compliance. Alm et al. (2006, 2009) labeled these indirect consequences as a ripple effect. According to Kedia et al. (2015), a spread of misconduct to peer individuals from the target person is referred to as a contagion effect in this paper. To anticipate this effect, the government needs to apply an alternative approach to alleviate taxpayers' non-compliance behavior.

Tax administrations are continually looking for innovative strategies to increase tax compliance. Alm et al. (2016) suggest that a novel method that has been increasingly discussed is limited disclosure of taxpayer information in tax evasion cases. Blaufus et al. (2017) assert that some countries (e.g., Greece and New Zealand) publicly list tax evaders to combat tax evasion. Others (e.g., Finland, Iceland, Norway, and Sweden) disclose all tax return information. However, the majority of countries treat tax information confidentially. The main reason to publicly disclose tax compliance information is to publicly deter people from evading taxes by threatening them with the shame of being announced as tax evaders. However, as mentioned by Blaufus et al. (2017), it is far from obvious that a strategy of tax publicity is a successful

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instrument for fighting tax evasion. Therefore, whether public disclosure of taxpayer compliance behavior increases or decreases compliance is largely unknown.

Disclosure of information on tax evasion by other taxpayers, and the consequences followed, allows peer taxpayers to learn about 1) details of violations and 2) costs incurred if specific actions are taken. While taxpayers who receive information perceived that tax enforcement and monitoring efforts are weak, he/she will conclude that the costs will be low. This perception will encourage taxpayers to imitate the violations that have been committed. In this situation, the taxpayer will calculate the cost-benefit of their actions. In other words, they will adopt gambling action (Becker, 1968; Allingham and Sandmo, 1972). This situation will be getting worse if the taxpayer receives similar information from target taxpayers, such as experience related to tax audits. If they receive information that indicated an audit by the tax office is weak, or a taxpayer shows dishonesty and does not get an audit, then the affected taxpayer's non-compliance getting worse than before. Kedia, Koh, and Rajgopal (2015) suggest that although contagion and deterrence arise in this rational models of misconduct, social norms-based explanations can also explain peer firm behavior upon learning of misconduct at the target firm.

Besides triggering contagion of tax evasion, exposure to news about discovered misconduct can lead to deterrence. If this effort is carried out, two critical questions need to be answered. These two questions are the research question in this paper. First, whether the disclosure of information about the evasion will influence other taxpayers, who obtain the information by imitating similar misconduct? Second, whether the government's prevention efforts through tax audit information dissemination will prevent contagion of non-compliance (if it has happened)? These questions are likely to be of interest to the tax authority. Understanding how tax evasion spreads among taxpayers will allow the tax authority to implement the policy that effectively deters such behavior.

This study aims to complete the explanation of the ripple effect from Alm et al. (2006) by presenting three theories that can explain the phenomenon of contagion in tax non-compliance. These theories are the economics-of-crime approach (Becker, 1968; Allingham and Sandmo, 1972), social norms based-explanation (Kohlberg, 1984), and psychological approaches about Salience, as explained by Gino, Ayal and Ariely (2009). These three theories or approaches provide explanations and predictions whether and in what contagion of tax non-compliance will occur and mitigate. The first two approaches predict that there is a potential for contagion in tax non-compliance due to the disclosure of tax evasion information. In contrast, a psychology-based explanation proposed by Gino et al. (2009) argue against contagion in taxpayer misbehavior. Due to these potentially opposing predictions related to contagion, the overall effect of public disclosure on tax compliance remains unclear. This study aims to experimentally investigate whether public information disclosure about tax evasion in the previous year affects taxpayer compliance that obtains such information and whether tax law enforcement efforts by the government can mitigate the contagion effect of tax non-compliance. Despite the usual concerns about external validity, Alm et al. (2016) argue that an experimental approach has distinct advantages to study the effect of tax publicity. In the controlled environment of a lab experiment, tax evasion is fully observable. Moreover, only in an experiment can manipulate tax privacy so we can disentangle the contagion effects of tax publicity.

This research contributes both theoretically and practically. First, theoretically, this study provides an understanding of the incidence of tax contagion through testing theories that provide different predictions of the occurrence of tax non-compliance contagion as a result of the disclosure of tax evasion information. Three theories are used as a reference in this study, namely the economics-of crime model (Allingham and Sandmo, 1972), social norms approach (Kohlberg, 1984), and psychological based explanation of Salience (Gino et al., 2009). The existence of contagion in tax evasion and deter such contagion (e.g., tax audit information dissemination) are new to the accounting and the taxation literature. Second, this research will illustrate how the effectiveness of tax audit information dissemination by the tax authorities may prevent the contagion of tax non-compliance, which is potential to occur due to the spread of types and patterns of evasion information. The findings of this study are expected to provide insightful implications for policies. In particular, these results could interest enforcement agencies such as the directorate general of tax.

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Literature Review

Contagion of Tax Noncompliance

Compliance is interpreted as obedient to the rules applied (Raby, 2012). Thus, tax compliance can be construed as taxpayer compliance to carry out all tax obligations following tax regulations (Alvin, 2014). From the above definition, it can be said that if the taxpayer fails to fulfill his tax obligations, whether intentional or not. It can be said to be non-compliance. Alm (2012) asserted that non-compliance reduces both public revenue and the availability of public services and also discriminates against honest taxpayers.

Non-compliance can be conducted in various ways; one of them is deliberately reducing tax due/tax liability (Hayman, 1993). This method can be done by manipulating the financial data and reports that will be used for tax purposes. In this situation, tax compliance/non-compliance can be influenced by internal factors (psychological) and external factors. Asnawi (2007) concludes them into economic and non-economic factors. Psychological and other non-economic factors, including tax morals, ethics, norm, accountability, and taxpayers' communication, service to taxpayers, and trust. Meanwhile, the economic factors consist of the tax administration system (Fasmi and Misra, 2014), tax law enforcement (Advani et al., 2015), tax audit, and tax rates (Ali et al., 2001).

Prior study on the effect of public tax disclosure is scarce and it provides mixed evidence. Alm et al. (2006) indicate a ripple effect from the tax auditing process. They found that "unofficial" communication among taxpayers indirectly affects unaudited taxpayer behavior; in this term, messages indicating that a subject was not audited or cheating will reduce peer compliance. In contrast, messages that indicate a subject audited or paid her taxes owed will increase compliance. Blaufus et al. (2017) found a significant contagion effect in the presence of low audit probabilities. Their finding indicates that particularly in low enforcement environments where governments must rely on voluntary tax compliance. Subjects may be prone to contagion effects caused by tax publicity. In the financial accounting field, Kedia et al. (2015) found that there is the contagion of unintended/unethical behavior like earnings management practice. They explained that a firm manager would imitate other firm earnings management practices through a restatement. In particular, they argue that if the target firm restating their financial statement for earnings management purposes, upon discovery of misrepresentation, faces little or no regulatory enforcement, then a peer firm is likely to conclude that the costs of managing earnings are low. This finding suggests that there is a spread of misconduct to peer firms from the target firm. On the other hand, Laury and Wallace (2005) conducted a laboratory experiment that implemented a mild form of disclosure and found some suggestive evidence that a malpractice disclosure has a positive effect on compliance.

Disclosure of Tax Evasion and Tax Non-Compliance

Understanding tax non-compliance and the effectiveness of strategies to tackle it is crucial for a modern tax authority. A novel method of fighting tax evasion is disclosing information on tax evasion in previous years, along with the following consequences (Alm et al., 2016). However, the effectiveness of this strategy is still questionable. It may deter the evasion practice; however, on the other side, it can create a potential for misconduct contagion among the taxpayers. Kedia et al. (2015) suggest that there are three potential reasons why public news about questionable behavior among peer managers may change an otherwise undetected manager's perceived cost of managing earnings. These reasons are: (1) a rational crime-based explanation, (2) a social norms-based explanation, and (3) a psychological explanation related to saliency. These reasons subsequently influence the propensity to embark on aggressive reporting. In a similar situation, we believe that news publication about tax evasion may have the same impact on tax compliance.

Becker (1968) pioneered the rational theory of crime wherein a potential criminal chooses to commit a crime if the benefit of doing so it is higher than the associated costs. Then, the economic model of income tax evasion (Allingham and Sandmo, 1972) extend the model. This model focuses on tax reporting actors from taxpayers and ignores other forms of tax evasion, such as not paying, deductions report that exceed fairness, and not reporting Annual Tax Return. In pure form, an individual is assumed to receive income and chooses how much income they will report to the tax authorities. These individuals will pay taxes on reported income and will not pay taxes if their income is below the limit of taxable income (in Indonesia called Non-Taxable Income).

Nonetheless, each taxpayer has a probability of being audited with a fixed possibility or random, depending on the inspection policy taken by the tax authority. If the audit findings that the taxpayer is under reported, they will be subject to sanctions in the form of fines and interest. Sah (1991) points out that often, the perceived costs associated with crime are subjective and based on individual manager experiences. According to the economics-of-crime approach, we may predict that if the taxpayer assumes that the costs of misconduct are lower than the benefits obtained from tax evasion. Then, the taxpayer tends to imitate violation. Otherwise, if the taxpayer perceived conversely, the tendency for non-compliance contagion will not occur. In other words, contagion is only likely to arise if the perceived costs borne by the misreporting firm are low.

A sociological explanation for contagion relies on the idea that is observing others' cheat changes an individual's understanding of the social norms related to dishonesty (Cialdini and Trost 1998). Social norms based-explanation (Kohlberg, 1984) suggests that contagion will occur if the social norms are

adhered by taxpayers lead to dishonest behavior. However, the news exposure about non-compliance can also create a deterrence situation so that non-compliance contagion will not occur (Kedia et al., 2015).
In contrast, a psychology-based explanation proposed by Gino et al. (2009) argue against contagion in taxpayer misbehavior. Their psychological approach to Salience points out that. If there is exposure to non-compliance information, it will make the situation more salient and eventually make the taxpayer pay closer attention to their honesty standards. When taxpayers reevaluate their honesty standards, the tendency to behave non-compliant will decrease, and contagion will be absent.

Some empirical results also provide evidence about the potential of contagion misconduct behavior. Kedia et al. (2015) found a contagion effect when a company's earnings management method is publicly announced. In a similar vein, Bird et al. (2018) found that a firm behavior regarding tax-paying and reporting due to a tax policy change impacts the behavior of its peer. In particular, they found that peer firms respond to these shocks by changing their GAAP tax rates in the same direction. Blaufus et al. (2017) found that the contagion effect was arising when an individual observes non-compliance action by other individuals, and as a consequence, reducing her tax compliance. Alm et al. (2009) found that communication between taxpayers who indicated a non-compliance affected her counterpart's behavior with whom she communicated. Next, Alm et al. (2016) found that compliance was higher both in the U.S. and in Italy when there is public disclosure of information about individuals found to be tax evaders. Hence, based on these explanations and empirical findings, hypothesis 1 (H1) is formulated as:

H1: The disclosure of information on tax evasion in the previous period significantly affected taxpayers' non-compliance in the current year.

Dissemination of Tax Audit Information

An essential aspect of our study is to examine how enforcement agents' actions affect the perception of the cost of misbehavior for peer and, hence, contagion. We study the role of public enforcement by the Directorate General of Tax enforcement actions via audit information dissemination. The implementation of tax audits is essential to provide deterrent effects from non-compliance behavior carried out by taxpayers. Besides, tax audits are also believed to have indirect deterrent effects on taxpayers who are not audited (Alm et al., 2009) through the provision of information/messages from those who are audited. Some empirical evidence such as Asnawi (2007) and Ghost and Crain (1996) showed that the increase in audit level significantly influences the taxpayer compliance. Meanwhile, the opposite factor also needs to be considered; conducting a higher tax audit level implies increasing audit costs.

In their study about tax audit information dissemination, Alm at al. (2009) assert that the information provided by the tax authorities is considered as official information, and they found that this type of communication significantly influences tax compliance. Meanwhile, communication among taxpayers is recognized as “unofficial” information. This information contains a message about the possibilities of being audited. Conversely, if the information and communication depict the absence of an audit or illustrate that the audit is not sufficient, we can expect that this information and communication will reduce the perceived probability of audit and consequently decrease tax compliance. Advani, Elming, and Shaw (2015) suggest that a tax audit has two indirect effects: dynamic effect and spillover effect. Dynamic effects are the changes in the future behavior of the audited taxpayer. Spillover effects are the changes in the behavior of other taxpayers who know the audited taxpayer. Bosco and Mittone (1997) examine the effect of tax audit publicity on tax evasion and they found no deterrent effect of tax publicity. An interesting note with the question that is still open to be answered is how taxpayers are forming their audit probability calculations and respond to the changes in audit levels and outcome. In other words, we do not know how taxpayers will learn and react toward audit information and adjust their tax reporting behavior.

Taxpayer audits are a central feature of the voluntary compliance mechanism in many countries' income tax systems, mainly because more frequent audits are thought to reduce tax evasion (Alm et al., 2009). Some empirical evidence such as Milliron and Toy (1988) and Ghost and Crain (1996) found that taxpayers who felt a certainty that they would be audited have a higher level of tax compliance than taxpayers who are were not sure they would be audited. In other words, the taxpayers with uncertainty over the probability of audit tend to be conservative and away from non-compliance. The perceived probability of audit is one of the variables that need to be considered because conceptually individual beliefs are manifestations of themselves over their decision. Ghost and Crain (1996) showed that the audit probability received influence moral attitudes and further influencing tax compliance behavior. On the other hand, if individuals no longer feel that they obtain legal certainty and that they will not be audited, the compliance behavior will change a decision to commit non-compliance.

The above explanation evidenced that individuals will make reports that allow themselves not to be audited. However, these individuals also do not know for sure that they will not be audited because they do not know when and why they are audited. In other words, the audit selection carried out by the tax office is random. The detection of non-compliance will only provide a deterrent effect if it gives a severe consequence to the taxpayer (Carnes and Englebrech, 1995). Literature which explains the impact of giving penalties on compliance, including Jackson and Milliron (1986) and Roth et al. (1989) concluded that giving higher penalties would increase compliance and vice versa. Klepper and Nagin (1989) suggest that penalties do not have an impact on compliance, while other studies such as Aim (1991) find the opposite. This result is still inconsistent with each other. Roth et al. (1989) provide a complete explanation by asserting that although some findings are indicating that penalties do not affect compliance. However, this condition does not apply for taxpayers with a high perceived probability of audit.

Alm et al. (2009) suggest that informational effects can arise through official announcements of audit occurrences and results, media reports, and taxpayer-to-taxpayer communication. Kedia et al. (2015) show the success of the regulation implementation (refers to the Sarbanes-Oxley Act in 2002) in eliminating the contagion of earnings management practices after the enactment of the rule (Kedia et al., 2015). Based on the above empirical evidence, we predict that audit information dissemination will be sufficient to curb contagion of tax non-compliance. Hence, hypothesis 2 (H2) is formulated as:

H2: Official announcement of previous audit result information by the tax authorities moderates the relationship between the announcement of evasion information and non-compliance tax behavior

Research Method

Experiment Design, Task and Procedures

Experiments were carried out on a $2x2$ design between-subjects. The evasion information variable's disclosure is manipulated into two levels (there is information vs. there is no information). Tax audit information is also manipulated into two different treatments (there is information vs. There is no information). Experimental tasks are constructed and abstracted from real tax cases, which can be obtained through the Supreme Court website. The main cases taken are the types of evasion that taxpayers often carry out and then become findings and corrected by the tax authorities.

The experimental task begins with the completion of the first case to determine participants' initial income. According to Ghosh and Crain (2006), this mechanism called earned income. After income determination, participants entering to the main session of the experiment. In the primary session, participants received information about the types of evasion that are commonly carried out by taxpayers and publicly disclosed by the tax authorities. Participants who are treated with information will get evasion-related information, while participants who receive "no information" treatment obtain other information as a placebo. After being explained about the tax evasion, tax audit information by tax authority was presented to participants. Audit information includes the number of audited taxpayers in terms of percentage (%) and the number of sanctions/fines that are successfully collected in the previous tax year. In addition, tax rates are set at the level of 25% and sanctions at 100% of the amount of tax not reported for all experiment sessions.

As expressed by Alm et al. (2006), an experimental design must meet Smith's (1982) precept of parallelism. Parallelism will be fulfilled if the experimental settings can capture the essential elements of the decision problem faced in the natural setting. The experiment was designed to capture the essential forms of voluntary income reporting and tax collection systems used in various countries. Subjects in a laboratory environment receive income from carrying out their work. In this case, the actual income is based on their relative performance in settling a tax case. Subjects will decide the amount of income they report to the tax authorities. Besides, considering that the social norms explanation suggests that individual requires to identify herself to a social group (such as peer individual), as well as a psychological-based explanation about saliency which argues that behavior most subject to strong social pressure or influence. Cases in this study was designed by using a close person as a peer. Lastly, constructed experimental tasks may facilitate participants' subjective estimates concerning the cost and benefit of their decision. The experimental procedure described in Table 1.

Research Variables

The independent variables in this study are evasion information and tax audit information. Both of these variables are manipulated at two levels. Evasion information variables are manipulated; there is information vs there is no information. Meanwhile, the dissemination of audit information is manipulated

into being information vs no information. Participants in evasion information situation received a note which contains the evasion techniques. In contrast, participants without information condition received a note which suggests a piece of general information about tax procedures. Then, participants in the audit information dissemination treatment received a memo containing information about audit results. Meanwhile, the counterpart received information that indicates information about the number of audited taxpayers and the number of penalties that are successfully collected. The dependent variable of tax non-compliance is measured by modifying Alm et al. (2006) measure by determining the relative amount of tax that is not reported relative to the tax owed.

Table 1. Experiment Procedures

1	Participants enter the experimental room and occupy seats based on their identity numbers
2	Participants review the informed consent and proceed to the experimental stage if they agree to participate
3	The main task of the experiment: 3.1 Participants work on preliminary assignments to determine their initial income 3.2 Participants read the tax facts they face 3.3 Participants get information services from the government in the form of types of violations that are most often carried out by taxpayers and become findings by the tax authorities (in which tax audit information is presented) 3.4 Participants receive other forms of information from the government, in the form of information on the percentage of taxpayers whose tax returns are corrected by the tax authorities and the number of fines that have been collected by the tax authorities from the audit (contained the manipulation of tax audit information dissemination) 3.5 Completion of calculations for tax-return
4	A post-experimental questionnaire including demographic data (gender, age, semester), check manipulation and debriefing

Research Participants, Manipulation Check, and Data Analysis

Libby et al. (2002), Shadish, Cook, and Campbell (2002) and Nahartyo (2013) indicate that researchers must consider the requirements of the experiment to determine the level of a decent subject. The research subjects were undergraduate students from the accounting department who had passed the taxation course. The students were used as the subjects in this study based on several arguments. First, this research relates to behavioral response and judgment making, so using students as a surrogate for a taxpayer is considered feasible. Previous evidence supports the use of the student for this task (Dyckman, 1966; Mock, 1969; Hofstedt, 1972; Ashton and Kramer, 1980). Second, the task in this study is a task performed by staff or a low level that does not dependent on the subject experience factor. Third, the task in this study was deliberately designed to be more structured (e.g., relatively low in terms of complexity). Referring to Khera and Benson's (1970) arguments, Nahartyo (2013) explained that students could be an appropriate surrogate for professionals or business people if they master the experimental tasks given. Since students never have first-hand experiences conducting taxation, there is a potential inherent response bias to the study result. We controlled this potential bias by only recruiting students who have passed through advanced taxation subjects and take a tax course until tax for the corporate topic. Then, as suggested by Nielsen et al. (1978), student characteristic differences may also raise a biased finding. We did a randomization test to control this potential confound effect.

Manipulation checks were conducted to get evidence that the subject understands their tasks as designed by the researcher. The manipulation check was done by giving two questions to the subjects. The first question is was related to prior year evasion information, and the second one regards to the tax audit information they receive. The data were analyzed using a two-way ANOVA.

Result and Discussion

Participant and Manipulation Check

Participants in this study are students who have passed the taxation course and have already learned about the corporate income tax topic. They play a role as a taxpayer. Experiments were carried out in 4 different periods involving 80 participants. Based on the manipulation check test, 4 participants failed to provide the right response to the assignment they received in the experiment so that the data was eliminated. The elimination produces 76 usable responses. The description of the results of the manipulation check test are presented in the following Table 2.

As seen at Tabl3 3. Out of 76 participants, 28 were male (48.8%), and 48 (51.2%) were female. The average age of the participant was 21.68 years. Most of the participants were students at semester VII (88.15% or 67 people), and the rest consisted of 9.22% (7) were students at semester IX and new graduates of accounting who were taking tax training courses 2.63% (2 people). Randomization test showed that there was no difference in participant's demographic characteristics among experimental treatments. The result consecutively shows significance level at 0.440 for age; 0.285 for semester; and 0.264 for sex.

Table 2. Manipulation Check Results

Panel A: Tax Evasion Information		
	There is information (n = 40)	**No Information (n= 40)**
Number of correct response	39	37
Percentage of correct response	97,5%	92,5%
Panel B: Audit Information Dissemination		
	There is information (n = 40)	**No Information (n= 40)**
Number of correct response	38	38
Percentage of correct response	95%	95%

Table 3. Participant Demographic Data

Information	**Amount**	**Percentage**
Sex		
Male	28 people	36.84%
Female	48 people	63.16%
Amount	76 people	100%
Semester		
V	0	0%
VII	67	88.15%
IX	7	9.22%
other	2	2.63%
Amount	76 people	100%
Experience of having own income	Eight out of 76 people	10.52%
Age (average)	21,68 years	

Descriptive Statistics and Hypothesis Testing

Hypothesis 1 predicts that the disclosure of information on tax evasion in the previous period significantly affected the non-compliance of taxpayers. This prediction implies that taxpayers who get information about how other taxpayers commit fraud, tend to follow the pattern of violations if they believe that their detected risk is lower than the benefits obtained if the fraud is undetected. This situation will be similar when they fail to evaluate the norms they follow lead to honest behavior. If these conditions exist, the contagion of tax non-compliance will occur. Descriptive participant responses are described in Table 4. Meanwhile, the Anova model with tax aggressiveness as the dependent variable is presented in the following Table 5.

Table 4 above shows that 38 participants received information on tax evasion committed by other taxpayers and 38 people who did not receive information about the violation, bringing the total participants to 76 people. From Table 4 above, it shows that participants who did not get information on evasion committed by other taxpayers on average showed the level of tax compliance at the level of 92.73% (standard deviation = 0.676). In comparison, participants who received information on evasion committed by the mandatory other taxes on average show the level of tax compliance at the level of 82.32% (standard deviation = 0.102). As can be seen in Table 5, the difference (the main effect of other taxpayer evasion information on tax compliance) is statistically significant (F = 30.738; p = 0.000). This finding indicates support for hypothesis 1 (H1), which means that tax non-compliance can be contagious through the publication of information about evasion conducted by other taxpayers.

According to the ability of audit information to mitigate the effects of contagious non-compliance, the receiver of information about the methods of other taxpayers to commit fraud. Table 4 shows that the effect of the interaction between tax violation information and audit information submitted by the tax authorities is statistically significant (F = 4.030; p= 0.048). This finding indicates that the official announcement of audit information in an educative manner can effectively mitigate the consequences of tax contagion that occurs due to the spread of information about how other taxpayers commit tax fraud. It suggests that audit information dissemination is effective to curb tax non-compliance contagion. This finding shows support for Hypothesis 2 (H2). Then, although not hypothesized, Table 4 shows that on

average, participants who received tax audit information had a level of 89.37% (standard deviation = 0.0880). At the same time, those who did not receive similar information showed the level of compliance at level 85.59% (standard deviation = 0.1111). As can be seen in Table 5, this difference is statistically significant (F = 4.493; p = 0.037). This figure shows the significant influence of tax audit information on the level of taxpayer compliance.

Table 4. Mean and Standard Deviation

	Audit Information		
Violation Information	There is information	There is no information	Total Line
There is information	.9263	.0928	.9273
	(.764)	(.0597)	(.676)
	n= 19	n= 19	n = 38
There is No information	.8607	.7816	.8232
	(.098)	(.092)	(0.1027)
	n= 20	n = 18	N= 38
Total Column	0. 8559	.8937	.8753
	(0.1111)	(.0880)	(0.1010)
	n= 39	n= 37	n= 76

Table 5. ANOVA Model for Tax Non-Compliance

Source	Type III Sum of Square	df	Mean Square	F	Sig.
Corrected Model	.265[a]	3	.088	12.702	.000
Intercept	58,012	1	58.012	8335.424	.000
Evasion Inform Disclosure	.214	1	.214	30.748	.000
AuditInforDissemination	.031	1	.031	4.493	.037
Evasion Inform Disclosure * AuditInforDissemination	.028	1	.028	4.030	.048
Error	.501	72	.007		
Total	58.998	76			
Corrected Total	.766	75			

The economic model of income tax evasion (Allingham and Sandmo, 1972), which focuses on tax reporting actors from taxpayers, explains that an individual is assumed to receive income and choose how much income they will report to the tax authorities. According to the economics-of-crime approach (Becker, 1968; Allingham and Sandmo, 1972), if the taxpayer assumes that the costs he will face because of the violations found in the audit are lower than the benefits derived from tax evasion, the taxpayer tends to imitate evasion. Conversely, if the taxpayer assesses otherwise, the tendency for the contagion of non-compliance will occur. Although this study does not explicitly measure how taxpayers calculate the cost vs. benefits of their tax reporting, the researcher assumes that taxpayers have carried out these calculations before making their tax decisions. This study found that taxpayers tend to imitate evasion that other taxpayers committed if they received information or know-how a tax violation was done. This finding indicates that exposure to the dishonesty of others lead taxpayers to change their subjective estimate of the benefits and/or the costs of committing an evasion. Such estimates lead the taxpayers to reduce their expectations about the cost of misreporting and, therefore, increase their likelihood of imitating non-compliance behavior.

Next is the explanation-based social norms (Kohlberg, 1984). In this regard, the contagion will occur if the social norms that taxpayers adhered to lead to dishonest behavior. However, exposure to news about non-compliance can create a "deterrence" situation so that non-compliance contagion will not occur. According to Kedia et al. (2015), the social norms explanation suggests that when individuals identify strongly with a social group (such as peer individual), others' behaviors will have a large influence on the observers' social norms. Based on the research findings as presented previously, it is indicated that the social norms adopted by taxpayers fail to lead to honest behavior when they found information about evasion committed by other parties. As a consequence, they tend to imitate a non-compliance behavior showed by peer person. This condition indicates the occurrence of the contagion effect. This finding suggests that the occurrence of "contagion" is more elevated than the potential of "deterrence."

Gino et al. (2009), through a psychological approach of Salience, explain that exposure to non-compliance information will make the situation more salient and finally make taxpayers pay more attention to their honesty standards. The saliency hypothesis states that when people observe someone behaving dishonestly and such behavior is framed as bad behavior, the saliency of this act increases, which, in turn

makes them pay attention to their standards of honesty, Hence, it decreases their tendency to engage in dishonest acts. In terms of tax obligation, when taxpayers reevaluate their honesty standards, then perceives tax evasion as a bad decision, the tendency to behave non-compliant will decrease, and as a result, the contagion will not occur. However, when they fail to conduct honest evaluations, then non-compliance and the tendency to cheat will spread. This study finds a consistent condition with the last explanation. In this regard, taxpayers cannot evaluate themselves and their honesty standards so that they follow along to imitate such misbehavior. The findings of this study are consistent with Kedia et al. (2015), who found that there is a contagion effect when a company's earnings management method is publicly announced. In the context of tax compliance, this study supports the previous findings such as Alm et al. (2006; 2009), who found that communication between taxpayers who stated that non-compliance from the first party affected the taxpayer's behavior with whom he communicates.

Economic models (also called deterrence models) concluded that tax evasion opportunities are in line with accountability, sanctions, and perceived probability of audit. Jackson and Milliron (1986) and Roth et al. (1989) concluded that giving higher penalties would increase compliance and vice versa. Carnes and Englebrech (1995) asserted that the detection of non-compliance would only give a deterrent effect if the detection had significant consequences for the taxpayer. The form of consequences is usually in the form of penalties like fines and interest. When taxpayers assume that this consequence is serious enough for them, they decide to be more obedient in tax reporting. This study findings support this argument, which is indicated by the significant effect of the interaction between disclosure of evasion information and tax audit information dissemination. This result suggests that tax agencies' response in the form of tax audit information dissemination can deter contagion of non-compliance behavior. This finding supports Alm et al. (2009), who found that increasing tax non-compliance due to 'unofficial" communication among taxpayers could be mitigated by officially announcing tax audit information.

The findings of this study are consistent with some previous studies (e.g., Kedia et al., 2015; Alm et al., 2016; and Bird Ruchti, 2018), which indicate that the contagion of tax non-compliance may occur as a result of disclosure of prior period evasion. This result suggests that the tax authority should be careful when disclosing prior period tax evasion information. They should be cautious about choosing which kind of information that will be disclosed. This study also shows an outstanding result that suggests that a contagion on tax non-compliance can be mitigated by an official announcement of tax audit information. This finding implies that the provision of tax audit information is sufficient to curb tax non-compliance behavior. This finding indicates the importance of the official announcement of tax audit enforcement

Conclusions, suggestions and limitations

The study shows that taxpayers who obtain information about how tax evasion is committed will imitate similar methods in their tax reporting behavior. This finding implies that tax non-compliance contagion may occur due to official information regarding violations by taxpayers and through “unofficial” communication among taxpayers. This contagion occurs as the result of the evaluation by taxpayers on their gambling behavior or on the social norms and standards of honesty they have. Based on the economic-of-crime model (Becker, 1968; Allingham and Sandmo, 1972), the contagion of non-compliance occurs because the results of the evaluation indicate that the risk detected is lower than the benefit. This result indicates that observing others engaging in non-compliance behavior changes the perceived cost of engaging in similar behavior. The social norm model (Kohlberg, 1983) explains that this contagion occurred because taxpayers fail to activate the values of social norms within themselves. In a similar vein, the psychological saliency model by Gino et al. (2009) which implies that the spread of noncompliance occurred when the results of the evaluation of information disparity do not succeed in leading someone to behave more honestly. Regarding tax policy, this finding implies that tax authority should be cautious with implementing tax evasion disclosure because more evasion could result due to motivational crowding-out of tax morale, which may trigger contagion of non-compliance.

This study also shows that the official announcement of tax audit information can mitigate the contagion of non-compliance. The previous research such as Alm et al. (2009) found that dissemination of audit information can mitigate the "ripple effect" of non-tax compliance as a result of the exchange of information regarding the experience of tax audits among taxpayers. Next, the study by Kedia et al. (2015) showed that earnings management does not spread between companies after the regulation of the Sarbanes Oxley Act (2002) is enacted. The findings of this study showed the consistent result with the two previous studies and imply that educational actions regarding law enforcement are still useful in decreasing tax evasion. Educative law enforcement can be done through information dissemination regarding tax audits. As a whole, our results suggest that the tax authority should support a policy of pre-announcing the audit

outcome and then reinforcing this with reports of the percentage of actual audits undertaken in the previous period.

Some limitations and opportunities for further research can be identified from this study. First, this research focuses on disclosing information about tax violations committed by other taxpayers in previous years. If the government was implementing the plan to disclose the types of tax evasion, violator names, and the sanctions, ultimately, the government (through the tax authorities) has considered giving more attention to the types of tax evasion that are exposed. This research still does not consider this matter carefully. Second, tax audit information can cover various forms of information that are not limited to the information about the audit level and audit results. Further, the researcher can develop this research by including other forms of tax audit information. Last, the experimental design did not comprehensively consider the principles of experimental economics, which contains the economic consequence for a particular choice taken.

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