LPEM-FEBUI Working Paper - 060
May 2021

ISSN 2356-4008

TAX EDUCATION AND TAX AWARENESS: AN ANALYSIS ON INDONESIAN TAX EDUCATION PROGRAM

Yulianti Abbas
Christine Tjen
Panggah Tri Wicaksono

LPEM-FEB UI Working Paper 060

Chief Editor : Riatu M. Qibthiyyah
Editors : Kiki Verico
Setting : Rini Budiastuti

Institute for Economic and Social Research
Faculty of Economics and Business
Universitas Indonesia (LPEM-FEB UI)

Salemba Raya 4, Salemba UI Campus Jakarta, Indonesia 10430
Phone : +62-21-3143177
Fax : +62-21-31934310
Email : lpem@lpem-feui.org
Web : www.lpem.org

LPEM-FEB UI Working Paper 060, May 2021
ISSN 2356-4008

Tax Education and Tax Awareness: An Analysis on Indonesian Tax Education Program

Yulianti Abbas[1,★], Christine Tjen[2], and Panggah Tri Wicaksono[3]

Abstract
This study aimed to examine the effectiveness of "*Pajak Bertutur*", a tax education program in Indonesia. We analyze whether there were differences in students' tax awareness before and after the program, and whether the results of the program were influenced by students' familiarity with taxation. We distributed an online survey questionnaire to all students participating in the 2020 tax education program, resulting in a total of 693 responses, 461 for pre-survey and 232 for post-survey. Using multivariate regression analysis, our results suggest that students' tax awareness level increased after the tax education program. We also found that the increase in tax awareness was greater for students who are familiar with tax authority website and those who have learned about taxation before the event. These findings thus indicate that the effectiveness of the tax education program is influenced by the students' prior knowledge, emphasizing that a continuous tax education program is necessary to improve tax awareness.

JEL Classification: A22; H20

Keywords
tax education — — tax awareness — tax knowledge — tax inclusion

[1] *Lecturer at the Department of Accounting, Faculty of Economics and Business, Universitas Indonesia. She is also currently the Director of the Graduate Program in Accounting, Faculty of Economics and Business, Universitas Indonesia. She received her doctoral degree in Public Affairs from Indiana University – Bloomington, USA in 2017.*
[2] *Lecturer at the Department of Accounting, Faculty of Economics and Business, Universitas Indonesia. She is an Australian Development Scholarship awardee, and completed a Master of International Taxation at University of Sydney in 2006, and a Bachelor of Accounting with Honours from the Faculty of Economics, University of Indonesia in 2000. Her research interest is taxation.*
[3] *Lecturer at the Department of Accounting, Faculty of Economics and Business, Universitas Indonesia. He holds a Master's from University of Birmingham, UK. As a lecturer, he teaches taxation and business analytics, and has research interests in the areas of taxation and public sector accounting. He is currently doing a PhD in Taxation at the University of Canterbury, New Zealand.*
★**Corresponding address**: TERC FEB UI, Faculty of Economics and Business, Universitas Indonesia. Email: yuli.a@ui.ac.id.

1. Introduction

Taxes are the major source of revenues for the Government of Indonesia. On average, tax revenues contribute around 85% of the total government revenue. Despite the great reliance on taxes, Indonesian tax ratio remains very low. Based on the OECD's 2020 report, Indonesian tax ratio of 11.9 percent is the lowest among countries in the Asia and Pacific Region (OECD, 2020). The ratio is a lower compared to the neighbouring countries, such as Malaysia (12.2%), the Philippines (15.7%) or Thailand (16.5%). Raising tax ratio thus becomes a priority in the Indonesian medium-term fiscal policy system.

Raising tax ratio has indeed been a problem in most developing countries. Prior studies suggest that to raise tax revenues, governments in developing countries should not focus only on detection and punishment, but also on improving the actual motivations of people to pay taxes (Alm & Martinez-Vazquez, 2007). Strengthening the social norms is viewed as important as the efforts to improve the tax administration (Alm & Martinez-Vazquez, 2007). Efforts to improve the intrinsic motivation to pay taxes thus are essential in increasing tax compliance (Andreoni et al., 1998; Torgler & Schneider, 2007).

Prior studies suggest that positive attitudes towards taxation are associated with tax knowledge. Higher level of tax knowledge is associated with more positive attitudes towards taxation (Eriksen & Fallan, 1996; Niemirowski et al., 2002). Similarly, Furnham (2005) and Kasipillai et al. (2003) suggest that people are more likely to comply with tax laws if they have sufficient knowledge of taxation. Kwok & Yip (2018) argue that a lack of understanding of the tax law and its application can lead to non-compliance behavior. These prior studies thus stress the importance of tax education, which is paramount to developing tax knowledge (Lai et al., 2013). In a study looking at university students' level of tax knowledge, Putro & Tjen (2020) found a substantial difference in tax knowledge between students who have received tax education and students who have not. The importance of tax education is also proposed by other studies. Morgan & Castelyn (2018) found that a majority of the participants in their study agree that formal tax education should be introduced into secondary school curriculum and, as a corollary, would assist taxpayers in their interactions with Australia's taxation system. Sarker (2003) explained that the Japanese government has introduced tax education to school students because they are considered to be potential future taxpayers (Sarker, 2003). Furthermore, Bardai (1992) emphasized that all future taxpayers need to have an adequate tax education in schools or colleges, so that they are more tax conscious.

Our study is intended to analyze the tax education program in Indonesia. In 2014, as part of an effort to increase tax ratio, the Indonesian government established a Tax Education program, which is known as the Tax Awareness

Inclusion program. This program primarily aims to build tax awareness of young people, targeting on students in all levels of education, including elementary schools, middle schools, high schools, and universities. One of the flagships in the Tax Awareness Inclusion Program is the annual "*Pajak Bertutur* (Patur)[1]" program, which was established in 2017. The Patur program involves a one-day visit from tax officials to schools during which the tax officials deliver various educational activities related to tax awareness to students. Since the program targets tax awareness, the educational materials include the basic understanding of taxes, the importance of taxes in Indonesian economy, and how taxes contribute to enhancing citizen's quality of life. It is expected that the program will increase students awareness as well as build a positive attitude towards taxation among students, who are the future taxpayers.

Despite the Patur program has been held annually since 2017, whether and to what extent the program improves students' tax awareness is still widely unknown. There are also limited literatures discussing a country's tax education program. Per our knowledge, only Sarker (2003) explained the tax education to school students in Japan. Similarly, research analyzing the association between tax education and tax awareness is also still limited. These prior studies also do not specifically analyze a national tax education program. The lack of prior research and the importance of tax education program in a developing country motivate us to examine the effectiveness of the Patur program in Indonesia. We conducted two broad analysis. First, we analyze whether there is a change in students' tax awareness after the program. If the program meets its objectives, we should see higher students' tax awareness after the program. Second, we analyze whether the results of the program will be influenced by students' familiarity with taxation. Despite its role in every country's economy, tax is a complex subject. Thus, students will develop their understanding on taxation gradually. Our conjecture is that it will be easier for students with familiarity with taxation to understand the information in the tax education program. More specifically, we asked whether the impact of the program will be more prominent if the students are familiar with taxation. We measure students' familiarity with taxation by assessing (1) whether the student has ever received any taxation lesson, (2) whether the student awares of the tax authority website, and (3) whether the student has a family member that understands taxation.

In answering our research questions, we utilized a survey that was distributed to all participants of the Patur program before and after the program in 2020. We also collected information regarding students' demographics and their access to taxation information. Due to the COVID-19 pandemic, the 2020 Patur program was conducted virtually by Zoom video conferencing. The use of online platform limits our sample to students who have adequate access to technology. However, despite the sample limitation, we observe enough variation in students' characteristics that we use to observe the impact of the program.

We use the confirmatory factor analysis (CFA) in the structural equation modelling to measure the tax awareness variable. We then apply the multivariate regression analysis to measure the changes in tax awareness before and after the Patur program. We apply a difference-in-differences setting to test whether students' familiarity with taxation moderates the changes in students' awareness after the program.

Our empirical results indicate that there is a significant difference in students' tax awareness before and after the Patur event. We also found that the increase in tax awareness is greater for students that are familiar with tax authority website and students that have learned about taxation before the event. Our results thus indicate that the effectiveness of the tax education program is affected by the students' familiarity with taxation, implying that a continuous education program is necessary to increase tax awareness.

The paper continues with a review of the literature on tax education and tax awareness and an explanation of Indonesian tax education program. Next, we describe our data, research design, and descriptive statistics, and then we provide our empirical results and findings. Finally, we conclude with a discussion of our findings and future research direction.

2. Prior Literature and Hypothesis Development

2.1 Tax Education and Tax Awareness

In a self-assessment system, taxpayers have responsibilities to calculate, pay, and report their own taxes to the government (Okello, 2014). Inability to fulfill these responsibilities properly will be detected as a failure, and the tax authority will take necessary actions, such as imposing penalties based on the tax laws (Okello, 2014). Thus, taxpayers should be aware of their tax obligations, and should be knowledgeable to comprehend the applicable tax laws (Loo & Ho, 2005). Since knowledge of taxation is essential, the tax authority is responsible to provide taxpayers with education and assistance so that taxpayers can understand and apply the relevant tax laws (Loo et al., 2005; Okello, 2014). It is argued that providing tax education program is an essential feature of the self-assessment system (Loo et al., 2005).

Prior studies support the importance of tax knowledge and tax education in achieving tax compliance. It is found that tax knowledge positively correlates with positive attitudes towards taxation (Eriksen & Fallan, 1996; Niemirowski et al., 2002). Furnham (2005) and Kasipillai et al. (2003) suggest that people who earn taxable income are more likely to comply with tax laws if they have sufficient knowledge of taxation. Moreover, Kwok & Yip (2018) argue that a lack of understanding of the tax law and its application can lead to non-compliance behavior. Thus, tax education is essential to provide tax knowledge, as supported by Kurniawan (2020) who finds that tax education increases tax knowledge. Besides, Morgan & Castelyn (2018) state that the level of tax education obtained by taxpayers is an important factor that contributes to the understanding of taxation requirements. Thus, tax education can lead to tax compliance. This is supported by Kwok & Yip (2018) who find that tax education positively impacts tax compliance. It is suggested

[1]The general English translation of the term *Pajak Bertutur* is "Tax Speaks".

that tax education can instill tax compliance behavior, especially through improving the ability/readiness to comply and enhancing morality (Kwok & Yip, 2018).

Tax education should not only target people who have registered as taxpayers, but also those who have yet become taxpayers. Morgan & Castelyn (2018) suggest that tax education should be given to students in the secondary education, while Bahari & Ling (2009) propose that university students, regardless of their discipline, should also be exposed to tax education. Moreover, Putro & Tjen (2020) find that there is a significant difference in the level of tax knowledge between students who have received tax education and those who have not.

Further, the implementation of tax education for students can probably be influenced by many factors, including the characteristics of the students. Furnham (2005), who conducted interviews with children ranging from 10 to 15 years old, find that the knowledge of taxation increases with age. However, Furnham (2005) finds that the majority of the 15-year olds still do not have full comprehension of the questions, suggesting that young people probably do not completely comprehend how their country's tax system functions until they are in their late teenage years. In addition, Furnham (2005) also finds that children from poorer families have more understanding about how the government spends its tax revenue on, because their parents may have discussed the taxation issue more and are more likely to be recipients of the government support. This implies that family background may affect the tax knowledge of students.

Our study focuses on examining tax awareness that is one type of tax knowledge, according to Bornman & Ramatumbu's (2019) framework. Bornman & Ramatumbu (2019) propose a framework of tax knowledge since the term 'tax knowledge' has not been well defined in the taxation literature. The framework describes that tax knowledge consists of three categories, namely general tax knowledge, legal tax knowledge, and procedural tax knowledge (Bornman & Ramatumbu, 2019). General tax knowledge relates to having a fiscal awareness, which includes understanding of the aims of governmental fiscal strategies and having financial literacy. Legal tax knowledge is defined as understanding legislative provisions, which includes understanding how people are taxed (technical) and understanding terminology of the complex tax legislation (conceptual). Procedural tax knowledge relates to understanding tax compliance procedures (Bornman & Ramatumbu, 2019). Although Bornman & Ramatumbu (2019) suggest these three elements of tax knowledge, the importance of each element as a factor influencing tax compliance is not examined, and they suggest future studies to investigate this to further enhance the framework. Bornman & Ramatumbu (2019) also suggest that not only should tax education provide technical and procedural tax knowledge, but it should also be able to increase awareness to ensure a voluntary compliant attitude.

Nevertheless, many prior studies seem to use the terms 'tax knowledge' and 'tax awareness' interchangeably, which is probably due to the unclear definition of both terms. In the context of this study, we use the term 'tax awareness' to correspond with the main purpose of Indonesia's Patur program, which is to raise awareness of young people towards taxation. Following Bornman & Ramatumbu's (2019) framework, we argue that the term 'tax knowledge' is too general and less appropriate for the context of this study, because Patur program does not cover technical and procedural aspects of taxation.

2.2 Tax Education Program in Indonesia

Indonesia's DGT has implemented a tax education program, named Tax Awareness Inclusion, since 2014. This program primarily aims to build tax awareness of young people, targeting on students in all levels of education, including elementary schools, middle schools, high schools, and universities. Through this program, students are expected to have more awareness of taxation, so they can be compliant taxpayers in the future. The DGT has created a long-term roadmap for the program in building tax awareness in Indonesia. According to the roadmap, it is expected that Indonesian citizens will have a high level of tax awareness after 2060, and taxes will contribute to the optimal welfare for the Indonesian citizens (Directorate General of Taxes, 2017).

The main objective of the program is to introduce taxation from an early age (elementary school) through the education system, especially through the education curriculum. However, the DGT also organizes supporting programs, one of them is Patur program. Patur program is an annual educational event that has been conducted since 2017, where the DGT provides tax education to students in one day. Patur is a national event, where DGT regional offices and tax offices come to schools and universities in their region to introduce taxation through various educational activities. Although the DGT could not involve all schools and universities in one event, the program has been conducted for four years and has reached students throughout Indonesia.

As the aim of the event is to raise students' awareness of taxation, the materials delivered in Patur program include the basics of taxes, the role of taxes in Indonesian economy, and how taxes help to improve citizens' quality of life. By participating in this event, it is expected that students can have greater awareness of taxation, which is important in building their positive attitudes towards taxation. These materials are delivered by DGT regional offices and tax offices using various methods, such as active lecturing, video presentation, and educational games. In the first three years (2017–2019), the events were conducted offline, where the DGT visits schools and universities. However, the 2020 event was conducted virtually by Zoom video conferencing due to the COVID-19 pandemic.

Despite the event has been conducted annually since 2017, the effectiveness of the program is still widely unknown. To the best of our knowledge, no research has investigated whether and to what extent the program improves tax awareness of students. Thus, this motivates us to examine whether providing tax education through the Patur program can increase students' tax awareness.

2.3 Hypothesis Development

The primary aim of this study is to investigate whether tax education, which is in the form of Patur program, changes the tax awareness of students. Eriksen & Fallan (1996) suggest that tax knowledge can shape people's positive attitudes

towards taxation. In addition, Kurniawan (2020) finds that tax education increase tax knowledge. This is also supported by Putro & Tjen (2020) who find that students who have received tax education tend to have more tax knowledge than students who have not been exposed to tax education. Kwok & Yip (2018) also find that tax education has a positive association with tax compliance. Thus, by providing tax education, it is expected that tax awareness can increase, which can ultimately affect tax compliance. Therefore, the first hypothesis for this study is as follows.

H1: The tax education program improves students' awareness towards taxation.

To further enhance this study, we also examine whether students' familiarity with taxation has impacts on how the tax education program improves their tax awareness. We analyze three conditions to describe students' familiarity with taxation: (1) whether a student has received any taxation lesson prior to the tax education program (2) whether a student is aware of the tax authority website, and (3) whether a student has a family member that understands taxation. We hypothesize that the impacts of the tax education program on improving tax awareness will be higher for students with better familiarity with taxation as measured by the access to these three sources of information. Thus, the next hypotheses are as follows.

H2: The impacts of the tax education program on increasing students' tax awareness are higher for students with prior lessons on taxation.
H3: The impacts of the education program on increasing students' tax awareness are higher for students who have awareness of the tax authority website.
H4: The impacts of the tax education program on increasing students' tax awareness are higher for students whose family member(s) understand taxation.

3. Research Method

3.1 Sample

3.1.1 Overall Sample

We surveyed students participated in the 2020 Patur event. We received a total of 693 responses, 461 responses were collected before the event and 232 responses were collected after the event. The demographic characteristics of our sample are shown in Table 1.

Based on the data from 693 responses, 27.8 percent of the responses are males. About 48 percent of the responses are from high school students, which also means 52 percent of the responses are from middle-school students. We asked the respondents whether they have received any lesson about taxation. About 70 percent of the responses acknowledged on having received taxation lesson. We also asked our respondents their source of information about taxation. About 49 percent of responses acknowledged the existence of tax authority website as the source of information, and around 52% of the responses stated they have family members who understand taxation.

3.1.2 Matching Sample

Based on the identifier in the questionnaire, we matched the responses from the same respondent before and after the event. We got 294 matched responses from 147 respondents. The demographic characteristics of the matched sample are shown in Table 2.

Our matched sample consists of 23.8 percent males and 41.2 percent high school students. Sixty-seven percent of the respondents acknowledged that they have received taxation lesson. About 30 percent of the respondents acknowledged the existence of tax authority website as the source of information, and around 57% of the responses stated they have family members who understand taxation.

3.2 Research Methodology

We distributed the same questionnaire to participants before and after the event. The questionnaire consists of six questions that measure tax awareness and five question that measure the characteristics of the respondents. The questions are measured using a 1–4 Likert Scale. A score of 1 represents highly disagree and a score of 4 represents highly agree. The questions are:
Question 1: Tax is the main source of Indonesian government revenues
Question 2: Government may enforce tax to all citizens
Question 3: Everybody should pay tax on their income
Question 4: Students do not need to pay taxes (reverse question)
Question 5: Not paying taxes is a better attitude compared to stealing (reverse question)
Question 6: Indonesian citizens benefit greatly from their tax payments

Since the tax awareness variable is a latent variable, we use confirmatory factor analysis (CFA) in the structural equation modelling to measure the magnitude of the variable. In the first analysis, we analyze whether students' tax awareness improves after the Patur event. Using the overall sample, we estimated a multivariate regression as follows:

$$\begin{aligned} TaxAwareness_{it} &= \beta_0 + \beta_1 Post + \beta_2 Male_{it} \\ &\quad + \beta_3 HighSchool_{it} + \beta_4 Lesson_{it} \\ &\quad + \beta_5 Website_{it} + \beta_6 Family_{it} \\ &\quad + \beta_k \sum Location_{it} \\ &\quad + \varepsilon_{it} \end{aligned} \tag{1}$$

Variable Description:
Tax Awareness : Level of tax awareness, measured using confirmatory factor analysis of the six tax awareness questions;
Post : Period after the tax event;
Male : Whether the respondent is male;
High School : Whether the respondent is high school student;
Lesson : If the respondent has received taxation lesson;
Website : If the respondent identified tax authority website as a source of information about tax;
Family : If the respondent identified family members as a source of information about tax;
Location : Dummy variables showing the provinces where the respondent resides. The overall sample includes respondents from nine provinces.

Table 1. Descriptive Statistics

VARIABLES	(1) N	(2) Mean	(3) Std. Dev.	(4) Min	(5) Max
Male	693	0.278	0.449	0	1
High School	693	0.478	0.500	0	1
Has Received Taxation Lesson	693	0.703	0.457	0	1
Know the existence of Tax Authority website	693	0.385	0.487	0	1
Has Family that understand Taxation	693	0.522	0.500	0	1

Table 2. Descriptive Statistics – Matching Sample

VARIABLES	(1) N	(2) Mean	(3) Std. Deviation	(4) Min.	(5) Max.
Male	294	0.238	0.427	0	1
High School	294	0.412	0.493	0	1
Has Received Taxation Lesson	294	0.670	0.471	0	1
Know the existence of Tax Authority website	294	0.306	0.462	0	1
Has Family that understand Taxation	294	0.568	0.496	0	1

We expect the coefficient of β_1 to be positive, which indicates the tax awareness post-event is higher than pre-event. Our analysis includes robust standard error to deal with heteroscedasticity.

Our second analysis evaluate whether the impact of the tax education program differ between respondent with different familiarity with taxation. For this analysis, we used the matched sample to control for unobservable characteristics of the respondents that might be associated with the access to tax knowledge. To test the hypothesis, we use difference-in-differences setting, as follows:

$$\begin{aligned} TaxAwareness_{it} &= \beta_0 + \beta_1 Post * Condition + \beta_2 Post \\ &+ \beta_3 Male_{it} + \beta_4 HighSchool_{it} \\ &+ \beta_5 Lesson_{it} + \beta_6 Website_{it} \\ &+ \beta_7 Family_{it} + \beta_k \sum Location_{it} \\ &+ \varepsilon_{it} \end{aligned} \quad (2)$$

Post*Condition : Interaction between Post (period after the event) and Condition (respondent's access to taxation knowledge)

We define "Condition" as respondents' familiarity with taxation as measured by their access to tax knowledge, which are (1) whether the respondent has received any taxation lesson (Lesson), (2) whether the respondent is aware of the tax authority website (Website), and (3) whether the respondent has a family member that understands taxation (Family). Our coefficient of interest is β_1 that shows the tax awareness difference between respondent under condition X and other respondents after the event. A positive β_1 indicates a higher tax awareness after the event for respondent under condition X compared to other respondents, ceteris paribus. For example, if condition X is defined as whether a respondent has received a taxation lesson, the coefficient β_1 shows the tax awareness differences between respondent that has received taxation lesson and other respondents after the event. A positive β_1 indicates the impact of the tax education event is higher for respondents that have received taxation lesson. All of our analyses include robust standard error to deal with heteroscedasticity.

4. Research Results

4.1 Descriptive Analysis

Table 3 shows the summary of the tax awareness questions for all respondents. In general, our respondents have a positive tax awareness (most average score > 2). Question 6 (whether Indonesian citizens benefit greatly from their tax payments) has the highest average score, and question 4 (whether students need to pay taxes) has the lowest average score. We observed an increase in the average scores for question 3,4,5,6, although none of the changes is statistically significant. We, however, observed a decrease in the average scores for question 1 and 2.

Table 3. Mean and Standard Deviation of Tax Awareness Questions
All Sample

Question	Parameter	Pre	Post	t-stat
Question 1	Mean	3.062907	3.017241	0.871
	Std. Dev	0.02971	0.044459	
Question 2	Mean	2.715835	2.681034	0.5492
	Std. Dev	0.037473	0.049327	
Question 3	Mean	2.91974	2.952586	-0.625
	Std. Dev	0.030866	0.04154	
Question 4	Mean	1.856833	1.969828	-1.8106
	Std. Dev	0.035454	0.052691	
Question 5	Mean	2.516269	2.590517	-1.2015
	Std. Dev	0.03628	0.04889	
Question 6	Mean	3.158351	3.181034	-0.456
	Std. Dev	0.029412	0.038732	
N		461	232	

Our previous analysis shows the differences in the average score for all respondents. Next, using the matching sample, we analyze the average score of all questions. Our results in Table 4 shows an increase in scores after the event, although none of the changes is statistically significant.

4.2 Regression Analysis

4.2.1 Tax Awareness Before and After the Tax Education Program

In our first analysis, we measure whether the tax awareness level changed after the tax education event. Our regression results involving the overall sample are shown in Table 5. The Post variable has a positive coefficient, which indicates the tax awareness level after the event is higher compared to before the event. This result is statistically significant at 90% level of confidence.

Table 4. Mean and Standard Deviation of Tax Awareness Questions
Matching Sample

Question	Parameter	Pre	Post	t-stat
Question 1	Mean	2.993197	3.034014	-0.5759
	Std. Dev	0.049691	0.050545	
Question 2	Mean	2.646259	2.687075	-0.4543
	Std. Dev	0.066743	0.060133	
Question 3	Mean	2.884354	2.918367	-0.5194
	Std. Dev	0.045807	0.046807	
Question 4	Mean	1.789116	1.891156	-1.1245
	Std. Dev	0.061986	0.066271	
Question 5	Mean	2.55102	2.55102	0
	Std. Dev	0.068385	0.059651	
Question 6	Mean	3.14966	3.183673	-0.5289
	Std. Dev	0.047639	0.043193	
N		147	147	

The analysis on our control variables shows a meaningful association between some respondent characteristics and tax awareness. First, we found that high school students have higher tax awareness compared to junior high students. Second, we found that students that acknowledged that they have received taxation lesson have higher tax awareness compared to their peers. Lastly, we found that students who are familiar with tax authority website have higher tax awareness compared to their peers. In sum, the results of our first analysis suggest that there is a significant difference in tax awareness before and after the event, and students' access to tax knowledge is associated with their degree of tax awareness.

4.3 The Impact of Tax Education Program on Tax Awareness Based on Students' Access to Tax Knowledge

Next, using the matching sample, we analyze the impact of tax education event on tax awareness by taking into account students' familiarity with taxation. We hypothesize that students with greater familiarity with taxation (greater access to taxation information) will benefit more from the tax education event. The reason is tax involves a complex knowledge that might require time for students to understand. Prior knowledge and familiarity with tax concept thus affect the effectiveness of a tax education program.

The results of our analysis are shown in Table 6. Our variable of interest is Post*Condition. We identified three conditions that represent students' familiarity with taxation, which are (1) familiarity with tax authority website, (2) having learned about taxation, and (3) having a family member that understand taxation.

Column 1 show the results for familiarity with tax authority website. We found that the increase in tax awareness is greater for students that are familiar with tax authority website compared to other students. Similarly, column 2 shows that the increase in tax awareness is greater for students that have learned about taxation compared to other students. We, however, do not find a significant result for students who identified family members as the source of information about taxation. In general, our results indicate that the effectiveness of the tax education program is affected by students' familiarity with taxation. Our results thus indicate that a tax education program should involve a sequence of lessons that gradually shape students' understanding and awareness of taxation.

Table 5. Regression Results
Tax Awareness Before and After the Tax Education Program

VARIABLES	(1) Coefficients
Post	0.303*
	(0.172)
Male	-0.232
	(0.195)
High School	1.203***
	(0.226)
Lesson	0.570***
	(0.177)
Family	0.0297
	(0.156)
Website	0.471**
	(0.184)
2. DKI Jakarta	-2.607***
	(0.494)
3. Jawa Tengah	-0.726*
	(0.421)
4. Kalimantan Timur	-0.310
	(0.485)
5. Kalimantan Utara	-0.579
	(0.526)
6. Lampung	-1.320***
	(0.405)
7. Sumatera Barat	1.265***
	(0.472)
8. Sumatera Selatan	3.852***
	(0.472)
9. Sumatera Utara	-0.298
	(0.543)
Constant	15.83***
	(0.452)
Observations	693
R-squared	0.159

Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5. Conclusion and Future Research

Our study is intended to analyze "Patur", a tax education program in Indonesia. As Indonesian government has been struggling to increase the country's tax ratio, a national tax education program is considered as a key solution. This education program targets school children as the future taxpayers and is intended to increase the students' tax awareness. In the long run, it is expected that the tax awareness will be translated into tax compliance.

We conducted a pre- and post- survey on Patur program's participants in 2020. In our first analysis, we found that students' tax awareness level changed after the Patur event. More specifically, we found that on average, students' tax awareness is higher after the Patur program. In our second analysis, we took into account students' access to taxation information to proxy students' familiarity with taxation. We found that the increase in tax awareness is greater for students that are familiar with tax authority website experience compared to other students. We also found the increase in tax awareness is greater for students that have learned about taxation compared to other students. In sum, our results indicate that the effectiveness of a tax education program will be affected by students' familiarity

Table 6. Regression Results
Cross-Sectional Variation in Students' Prior Taxation Knowledge

CONDITION	(1)	(2) Condition	(3)
	Website	Lesson	Family
Post*Condition	0.219**	0.153**	-0.115
	(0.0965)	(0.0744)	(0.0775)
Post	-0.0177	-0.0618	0.111*
	(0.0400)	(0.0553)	(0.0631)
Male	-0.150***	-0.138***	-0.138***
	(0.0523)	(0.0522)	(0.0523)
High School	0.151***	0.153***	0.151***
	(0.0447)	(0.0453)	(0.0448)
Lesson	0.0508	-0.0114	0.0569
	(0.0391)	(0.0521)	(0.0384)
Family	0.0701*	0.0831**	0.145**
	(0.0393)	(0.0390)	(0.0580)
Website	0.0377	0.118***	0.137***
	(0.0601)	(0.0450)	(0.0445)
2. DKI Jakarta	-0.227**	-0.0363	-0.147*
	(0.0975)	(0.0956)	(0.0832)
3. Jawa Tengah	0.134***	0.135***	0.131***
	(0.0381)	(0.0509)	(0.0377)
4. Kalimantan Timur	0.246***	0.241***	0.248***
	(0.0757)	(0.0790)	(0.0733)
6. Lampung	-0.0607	-0.0407	-0.0350
	(0.0542)	(0.0600)	(0.0507)
7. Sumatera Barat	0.358***	0.306***	0.352***
	(0.0512)	(0.0601)	(0.0526)
9. Sumatera Utara	0.127	0.139	0.135
	(0.0820)	(0.0881)	(0.0820)
Constant	-0.269***	-0.277***	-0.358***
	(0.0631)	(0.0698)	(0.0677)
Observations	294	294	294
R-squared	0.211	0.204	0.200

Note: Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

with taxation. Our results thus suggest that a continuous education program is necessary to increase tax awareness.

This study only focuses on the 2020 program that was conducted online. Further research can investigate the offline tax education program in the future to see whether there are any differences in the results between an online and an offline program. Moreover, the post-survey in this study was conducted right at the end of the event, while awareness can change over time. In order to investigate whether students' tax awareness changes since their participation in the tax education program, further studies may also conduct follow-up post-survey several months after the program. Furthermore, other than conducting survey, future studies may also employ other methods to examine students' tax awareness before and after a tax education program, such as interviews and focus group discussions. Although these methods might not be able to involve more participants than survey, these methods allow researchers to explore students' views on taxation more deeply. On top of the above, further research also can be conducted on the broader context of the Indonesian Tax Awareness Inclusion Program, whether in the primary level or university level of education. Lastly, this study focuses on the Indonesian tax education program. Future studies focusing on other countries would benefit tax educators and regulators to understand the variety of tax education program among countries and how different institutional setting affects the effectiveness of a tax education program.

References

Alm, J., & Martinez-Vazquez, J. (2007). Tax morale and tax evasion in Latin America. *International Studies Program Working Paper, 07-32*. Andrew Young School of Policy Studies, Georgia State University. Accessed on March 2, 2020 from https://icepp.gsu.edu/files/2015/03/ispwp0732.pdf.

Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. *Journal of Economic Literature, 36*(2), 818-860.

Bahari, A. B. M., & Ling, L. M. (2009). Introducing tax education in non-accounting curriculum in higher education: Survey evidence. *Journal of Financial Reporting and Accounting, 7*(1), 37-51. doi: https://doi.org/10.1108/19852510980000640.

Bardai, B. (1992). Tax illiteracy in Malaysia: Problems and solution.

Bornman, M., & Ramutumbu, P. (2019). A conceptual framework of tax knowledge. *Meditari Accountancy Research, 27*(6), 823-839.

Directorate General of Taxes. (2017). *Inklusi kesadaran pajak dalam pendidikan*. Directorate General of Taxes, Ministry of Finance of the Republic of Indonesia. https://edukasi.pajak.go.id/images/materi_publikasi/Booklet-Inklusi-Kesadaran-Pajak.pdf.

Eriksen, K., & Fallan, L. (1996). Tax knowledge and attitudes towards taxation; A report on a quasi-experiment. *Journal of Economic Psychology, 17*(3), 387-402. doi: https://doi.org/10.1016/0167-4870(96)00015-3.

Furnham, A. (2005). Understanding the meaning of tax: Young peoples' knowledge of the principles of taxation. *The Journal of Socio-Economics, 34*(5), 703-713. doi:

https://doi.org/10.1016/j.socec.2005.07.014.

Kasipillai, J., Aripin, N., & Amran, N. A. (2003). The influence of education on tax avoidance and tax evasion. *eJournal of Tax Research (eJTR), 1*(2), 134-136.

Kurniawan, D. (2020). The influence of tax education during higher education on tax knowledge and its effect on personal tax compliance. *Journal of Indonesian Economy and Business, 35*(1), 57-72.

Kwok, B. Y. S., & Yip, R. W. Y. (2018). Is tax education good or evil for boosting tax compliance? Evidence from Hong Kong. *Asian Economic Journal, 32*(4), 359-386. doi: https://doi.org/10.1111/asej.12163.

Lai, M. L., Zalilawati, Y., Amran, M. M., & Choong, K. F. (2013). Quest for tax education in non-accounting curriculum: A Malaysian study. *Asian Social Science, 9*(2), 154-155. doi: https://doi.org/10.5539/ass.v9n2p154.

Loo, E. C., & Ho, J. K. (2005). Competency of Malaysian salaried individuals in relation to tax compliance under self assessment. *eJournal of Tax Research (eJTR), 3*(1), 45-62.

Loo, E. C., McKerchar, M., & Hansford, A. (2005). An international comparative analysis of self assessment: What lessons are there for tax administrators? *Australian Tax Forum, 20*(4), 669-710.

Morgan, A., & Castelyn, D. (2018). Taxation education in secondary schools. *Journal of the Australasian Tax Teachers Association, 13*(1), 307-335.

Niemirowski, P., Baldwin, S., & Wearing, A. J. (2002). Tax related behaviours, beliefs, attitudes and values and taxpayer compliance in Australia. *Journal of Australian Taxation, 6*(1), 132-165.

OECD. (2020). *Revenue statistics in Asian and Pacific Economies 2020*. Accessed on May 21, 2021 from https://www.oecd.org/tax/tax-policy/revenue-statistics-in-asian-and-pacific-economies-26179180.htm.

Okello, A. (2014). Managing income tax compliance through self-assessment. *IMF Working Paper, WP/14/41*. International Monetary Fund. https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Managing-Income-Tax-Compliance-through-Self-Assessment-41415.

Putro, B. B. R. P. & Tjen, C. (2020). Analysis of tax education and tax knowledge: survey on university students in Indonesia. *Journal of the Australasian Tax Teachers Association, 15*(1), 232-250.

Sarker, T. K. (2003). Improving tax compliance in developing countries via self-assessment systems - What could Bangladesh learn from Japan? *Asia-Pacific Tax Bulletin, 9*(6), 3-34.

Torgler, B., & Schneider, F. (2007). What shapes attitudes toward paying taxes? Evidence from multicultural European countries. *Social Science Quarterly, 88*(2), 443-470. doi: https://doi.org/10.1111/j.1540-6237.2007.00466.x.

Gedung LPEM FEB UI
Jl. Salemba Raya No. 4, Jakarta 10430
Phone : +62-21 3143177 ext. 621/623;
Fax : +62-21 3907235/31934310
Web : http://www.lpem.org/category/publikasi/workingppers/