Determinants affecting tax compliance: A case of business households in Ho Chi Minh City, Vietnam

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ABSTRACT

This paper aims to identify key factors influencing the tax compliance of business households in Ho Chi Minh City, Vietnam. The researchers surveyed 215 owners of business households in Ho Chi Minh City from June 2020 to July 2020. Analysis of the model includes the 4 phases following: (i) Applying the expert methodology; (ii) Cronbach’s test for reliability of the scale and exploratory factors analysis (EFA); (iii) Pearson correlation coefficient analysis; (iv) Regression analysis and hypothesis test of a model. The results of this study revealed that factors affecting tax compliance of business households in Ho Chi Minh City, Vietnam in descending order of importance: Tax Rate, Tax Knowledge, Tax Penalty, Personal Norm, and Perceived Fairness (of the system). Moreover, the tax rate had a negative relationship with tax compliance and the others had a positive one with tax compliance. Finally, the research also proposes some implications to enhance tax compliance of business households and directions for further research.

1. Introduction

In Vietnam, business households are also one of the important economic sectors contributing to Vietnam’s economy. However, the General Statistics Office of Vietnam showed that there were more than 5.6 million business households in 2018, but according to the General Department of Taxation’s data, the whole country had just over 1.7 million business households having tax payments in 2018. Statistics from the General Department of Taxation show that from 2015 to 2018, the tax revenue collected from business households only increased slightly over the years, while the proportion of contribution to the state budget decreased. Ho Chi Minh City is an economic, financial, commercial, and service center of the country, and is the nucleus of the southern key economic region. With a high economic growth rate, the city size accounts for only 0.6% of the area and 8.3% of the population but has contributed 20.2% of the gross national product and one-third of the State budget every year. Therefore, Ho Chi Minh City is home to many business households that provide accommodation services as well as other services related to the residents such as catering, entertainment, and essentials, etc.

Although tax compliance has been researched for a long time, the factors influencing tax compliance are very different among different countries and individuals. Moreover, most of the previous studies are done in developed countries having comprehensive infrastructure and a stable tax law system and the number of tax compliance research in developing countries like Vietnam is low in numbers. Particularly, no study has been reported to identify determinants impacting on
tax compliance of business households in Vietnam although the role of business households is important to Vietnam’s economy. Therefore, this study “Determinants affecting tax compliance: A case of business households in Ho Chi Minh City, Vietnam” is the first study on tax compliance of business households in Vietnam to fill the gap and is very necessary and meaningful in current Vietnam’s economic conditions. The results of the study provide a framework for assessing the impact of determinants on tax compliance of business households to help tax authorities to come up with appropriate tax management policies for business households. Moreover, the study also proposes some recommendations that can help the tax authorities propose solutions to enhance tax compliance of business households in Ho Chi Minh City in particular and in Vietnam in general. The main objective focuses on: (i) a literature review of factors affecting tax compliance, (ii) identifying determinants impacting on tax compliance of business households in Vietnam, and (iii) policy implications.

2. Literature review

2.1. The definition of tax compliance

For a long time, many researchers have tried to define tax compliance. For example, Allingham and Sandmo (1972) defined tax compliance as reporting all actual income. Andreoni, Erard, and Feinstein (1998) showed that tax compliance related to the willingness of taxpayers to accomplish the tax laws, to truly report tax bases to correctly calculate the tax liability, to file tax returns on time, to pay tax on time, and to fulfill all tax procedures and obligations without enforcement. Kirchler (2007) defined tax compliance as the willingness of taxpayers to pay their taxes. Similarly, according to the reports of IRS (2009), ATO (2009), LHDN (2009), tax compliance related that taxpayers comply with the tax law willingly, pay the tax fees on time, and declare correctly their income. In our research, tax compliance concerns that taxpayers comply with the tax laws willingly, declare their income correctly, file their tax report on time, and pay all their tax fees on time.

2.2. Tax compliance theories

2.2.1. The economic deterrence theory

The economic deterrence theory states that tax compliance is affected by the tax rate, the probability of audits and penalties, the evasion’s benefits (Allingham & Sandmo, 1972). The taxpayers only pay the tax because of their fears of punishment and detection. Conversely, with low penalties and low audit probabilities, tax evasion is high. Therefore, the tax administration needs to develop enforcement strategies to increase tax compliance.

2.2.2. The fiscal exchange

The fiscal exchange theory suggests that government expenditures (such as public goods and services) may encourage tax compliance (Alm, McClelland, & Schulze, 1992). If individuals recognize that their tax fees are necessary both to help finance the public goods and services and to get others to contribute, they may pay tax fees (Fjeldstad & Semboja, 2001). Particularly, the existence of positive benefits, the taxpayers will comply voluntarily, without direct coercion.

2.3.3. Social influence theory

In social influence theory, tax compliance behavior is affected by the behavior and social norms of an individual’s reference group such as relatives, friends, and neighbors (Keith, 1990). Thus, taxpayers may evade taxes if they know many people in groups important to them who also have tax evasion. By contrast, a good social relationship may help deter individuals from evading tax because of fear of the social sanctions imposed situations discovered and revealed publicly.
2.2.4. Comparative treatment

The comparative treatment model shows that the equity theory and equity in the exchange relationship between government and taxpayers may lead to improving tax compliance (McKerchar & Evans, 2009). Citizens not only consider their relationship with the state but also compare the state’s treatment with them and their fellow citizens. Therefore, this theory highlights the importance of fairness treatment in the research of tax compliance.

2.3. Determinants of tax compliance

Previous studies have shown that many determinants affect tax compliance. Allingham and Sandmo (1972) established the basic economic tax compliance model based on some factors that are audit, penalty, and tax rate. Jackson and Milliron (1986) summarized 14 key factors that effecting on tax compliance. These factors are arranged into a single integrated model known as Fischer’s model (Fischer, Wartick, & Mark, 1992). It consists of demographic factors, noncompliance opportunity factors, attitudes and perceptions factors, and tax system structure. After that, this model was modified by Chau and Leung (2009) and it was supplemented with cultural factors and the relationship between the tax system and noncompliance opportunity. Kirchler (2007) indicated that the three main groups influencing tax compliance were social-psychological determinants (e.g., attitudes, norms, fairness perception); political determinants (e.g., complexity of law and tax system, fiscal policy); economic determinants (audits, fines, tax rate, income). Ngo, Vu, and Tran (2019) showed that 3 key factors influencing tax compliance of enterprises in Vietnam, including tax knowledge, tax penalty, and tax inspection. Based on a combination of previous studies and findings of our research, the authors have proposed a model for tax compliance of individual business households in Ho Chi Minh City, Vietnam including 5 groups: (i) Tax Knowledge, (ii) Tax Systems, (iii) Tax Administration, (iv) Norm, and (v) Perceived Fairness (of the tax system).

The research model is shown in the following Figure 1:

![Figure 1. The proposed research model](image)

2.3.1. Tax Knowledge (TK)

Tax Knowledge is also a key factor affecting tax compliance. Eriksen and Fallan (1996) indicated that “tax attitudes can be improved through better tax knowledge”, and as a result, tax compliance could be enhanced and tax evasion could be reduced. Niemirowski, Wearing, and Baldwin (2003) showed that there was a positive relationship between tax compliance and tax knowledge.

Some researchers revealed that higher tax knowledge led to rising tax compliance (Clotfelter, 1983; Groenland & Van Veldhoven, 1983; Wahlund, 1992; Kirchler & Maciejevsky, 2001; Park & Hyun, 2003). Based on the experimental study, Eriksen and Fallan (1996) indicated
that if the students were taught the tax laws in their class, they could be more compliant with the tax, and tax evasion could be decreased. Moreover, Kirchler, Hoelzl, and Wahl (2008), Palil and Mustapha (2011), and Ngo et al. (2019) also revealed that higher tax knowledge led to higher compliance.

Therefore, we had this hypothesis:

**H1: Tax Knowledge has a positive (+) impact on tax compliance**

2.3.2. Tax Rate (TR)

Clotfelter (1983) and Slemrod (1985) revealed a negative relationship between tax rate and compliance. Lower compliance at a high marginal tax rate is reported by Lang, Nöhrbaß, and Stahl (1997) for German taxpayers, by Weck-Hannemann and Pommerehne (1989), and by Pommerehne and Weck-Hannemann (1996) for Swiss taxpayers. Moreover, Hai and See (2011) and Tilahun (2018) found that the high rate cause high tax noncompliance.

This hypothesis was then constructed:

**H2: Tax rate has a negative (-) impact on tax compliance**

2.3.3. Tax Penalty (TP)

According to Allingham and Sandmo (1972), increasing the penalties led to enhancing tax compliance. A significant relationship between the severity of criminal sanction and tax compliance was found by Witte and Woobury (1985), and by Hasseldine, Hite, James, and Toumi (2007). Ngo et al. (2019) indicated that there was a positive relationship between tax compliance and tax penalty.

This hypothesis was then constructed:

**H3: Tax penalty has a positive (+) impact on tax compliance**

2.3.4. Personal Norm (PN)

Personal norms include personality factors, moral standards, values, religious beliefs, authoritarianism, and Machiavellianism, etc. The moral standards on tax were improved and developed as a result of voluntary compliance (Baldry, 1987; Jackson & Milliron, 1986; Trivedi, Shehata, & Lynn, 2003). Empirical studies show that Machiavellianism furthers tax evasion (Adams & Webley, 2001; Kirchner & Berger, 1998; Webley, Cole, & Eidjar, 2001), but tax compliance is enhanced by community values and altruistic orientation or personal norm (Braithwaite, 2003; Blamey & Braithwaite, 1997).

Therefore, this hypothesis was constructed:

**H4: Personal norm has a positive (+) impact on tax compliance**

2.3.5. Perceived Fairness (of the tax system) (PF)

Wenzel (2003) indicated that three dimensions of perceived fairness of the tax system impact tax compliance including procedural justice, distributive justice, and retributive justice. The taxpayers are more compliant when the tax system is perceived to be fair (Alm, Jackson, & McKee, 1993; Azmi & Perumal, 2008; Richardson, 2005; Tilahun (2018), while if taxpayers perceive that the tax system is unfair, they tend to evade tax. (Allingham & Sandmo, 1972; Etzioni, 1986; Spicer & Lundstedt, 1976; Scott & Grasmick, 1981).

Therefore, this hypothesis was then constructed:


3. Research methodology

The process of our research for determinants influencing tax compliance of business households in Vietnam has 4 phases following:

Phase 1: The expert methodology was used and we invited 20 lecturers training tax and 20 experts as group discussion to improve the scale and design of the questionnaire. After that, we created a list of determinants gathered from the literature review as mentioned in the above studies.

Phase 2: In this phase, a reliability scale was tested with Cronbach’s Alpha coefficient and exploratory factor analysis EFA. Data were collected by using completed questionnaires distributed randomly to business households at Ho Chi Minh City from June 2020 to July 2020. Regarding sample size for factor analysis, the minimum is to have at least five times the number of observation variables (Hair, Black, Babin, Anderson, & Tatham, 2006). So, with 20 observation variables in this study, the sample size is at least 100. For regression analysis, Tabachnick and Fidell (2013) indicated that the sample size, N, should be equal to or exceed $50 + 8p$, where $p$ equals the number of predictor variables. Therefore, with 5 predictor variables, the sample size is at least 90. Moreover, Comrey and Lee (1992) showed about the sample size: very poor for 50 cases, poor for 100 cases, fair for 200 cases, good for 300 cases, very good for 500 cases, and excellent for over 1,000 cases. We chose that the sample size for our study was 200 but we enhanced 40% to prevent invalid answering. Therefore, the final of our sample size was 250. Every respondent spent about 20 minutes answering the questionnaire. After surveying, we had approximately 92% of the collected data. Of those returned, approximately 6% were incomplete. Thus, the analysis is based on the 215 usable surveys and represents a response rate of 86% of the distributed survey. The questionnaire’s statements were used in this research to measure each variable. Variables were measured through the respondent’s perception of tax compliance, Tax Knowledge, Tax Rate, Tax Penalty, Personal Norm, and Perceived Fairness (of the tax system). Respondent’s perception was measured by using a 5-point Likert scale to determine the agreement’s level (1 = highly disagree, 2 = disagree, 3 = not certain, 4 = agree, 5 = highly agree). We coded all data collected and used SPSS 25 to analyze. According to Tabachnick and Fidell (2013), to ensure the reliability of the scale is any observational variables with a total correlation coefficient greater than 0.3 and Cronbach’s Alpha coefficient greater than 0.6. Based on the Eigenvalue, the appropriate factorial analysis, and the observed variables in the whole are correlated when the Eigenvalues criteria value is greater than 1. Average Variance Extracted is $>50\%$, the KMO coefficient is within 0.5 to 1, Sig. coefficient is $\leq 5\%$, the loading factor of all observational variables is $>0.5$ (Hair, Black, Babin, Anderson, & Tatham, 1998).

Phase 3: We tested the Pearson correlation coefficient. In terms of the strength of the relationship, the value of the correlation coefficient varies between +1 and -1, and the sig (2-tailed) value is less than or equal to 0.05 (Hair et al., 2006). A correlation of 0 indicates no relationship, a correlation of 1 indicates a perfect positive correlation, and a correlation of -1 indicates a perfect negative correlation (Pallant, 2010).

Phase 4: Multiple linear regression was applied to evaluate the relation between the dependent variable and independent variables and to test this study’s hypothesis. The regression of our model is:

$$TC = \beta_0 + \beta_1 TK + \beta_2 TS + \beta_3 TA + \beta_4 NORM + \beta_5 PER + \varepsilon$$

(1)
Where:

\[ \beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5 : \text{Coefficients} \]

TC: Tax Compliance (dependent variable)
TK: Tax Knowledge
TR: Tax Rate
TP: Tax Penalty
PN: Personal Norm
PF: Perceived Fairness (of the tax system)

\[ \varepsilon : \text{Classical random error term} \]

To warrant the reliability of our scale for tax compliance, we adopted from previous researches. The research scale is shown in the following Table 1.

### Table 1
Summary of research scale

| No | Scale               | Symbol | Source                                      |
|----|---------------------|--------|---------------------------------------------|
| I  | Tax Knowledge       | TK     | Niemirowski et al. (2003); Ngo et al. (2019) |
|    | I understand the rules of the tax law | TK1     |                                             |
|    | I understand the regulations relating to tax rights and obligations | TK2     |                                             |
|    | I understand the tax rate that applies to my business | TK3     |                                             |
|    | I understand the regulations on tax declaration and payment | TK4     |                                             |
| II | Tax Rate            | TR     | Tilahun (2018)                             |
|    | The tax rate applying to my business is high | TR1     |                                             |
|    | The tax rate that I’m paying is not suitable for my ability | TR2     |                                             |
|    | The tax rates of my business area are higher than in other ones | TR3     |                                             |
|    | I am not satisfied with my tax rate and tax fee | TR4     |                                             |
| III| Tax Penalty         | TP     | Hasseldine et al. (2007); Ngo et al. (2019) |
|    | The tax authority’s ability to detect and punish tax fraud and fraud is high | TP1     |                                             |
|    | The sanctions for tax non-compliance, tax fraud, or tax evasion are very strict | TP2     |                                             |
| No | Scale | Symbol | Source |
|----|-------|--------|--------|
| IV | Personal Norm | PN | Braithwaite, 2003; Wenzel (2003) |
|    | The fines for tax non-compliance are high | TP3 |        |
|    | Tax evasion or tax fraud will be condemned by society | PN1 |        |
|    | Compliance with tax regulations is right with human morality | PN2 |        |
|    | Tax evasion or tax fraud is shameful and wrong | PN3 |        |
| V  | Perceived Fairness | PF | Tilahun (2018) |
|    | The tax fee that I must pay is fair compared to others in the same field | PF1 |        |
|    | Tax officers treat me fairly like other taxpayers | PF2 |        |
|    | I receive fair benefits from Government spending | PF3 |        |
| VI | Tax Compliance | TC | Ngo et al. (2019) |
|    | I always declare and pay taxes on time | TC1 |        |
|    | I always make accurate and complete tax declaration and payment | TC2 |        |
|    | I always comply with regulations on invoices and accounting voucher | TC3 |        |

Source: The researcher’s data analysis

4. Results and discussion

4.1. Descriptive statistics

Table 2
Sample description

| Item        | Frequency | Percentage |
|-------------|-----------|------------|
| Gender      |           |            |
| Male        | 103       | 47.9       |
| Female      | 112       | 52.1       |
| Age         |           |            |
| Under 30    | 42        | 19.5       |
| 30 - 40     | 94        | 43.7       |
| 40 - 50     | 62        | 28.8       |
| Item                     | Frequency | Percentage |
|-------------------------|-----------|------------|
| Over 50                 | 17        | 7.9        |
| **Education level**     |           |            |
| Under High School       | 21        | 9.8        |
| High School             | 149       | 69.3       |
| Bachelor Degree         | 45        | 20.9       |
| **Business type**       |           |            |
| Manufacturing           | 9         | 4.2        |
| Trading                 | 166       | 77.2       |
| Services                | 40        | 18.6       |
| **Business experiment** |           |            |
| Under 2 years           | 36        | 16.7       |
| 2-5 years               | 56        | 26.1       |
| Over 5-10 years         | 74        | 34.4       |
| Over 10 years           | 49        | 28.8       |

Source: The researcher’s data analysis

The female group amounted to 112 out of 215 participants or 52.1% of the total answers. 103 male participants accounted for 47.9% of the total answers.

The main age-group of our survey-participants was “30-40” which counted for 43.7% of the total answers. The second one frequently used answer for the category “age group” was “41-50” with 28.8% of the total answers. The minor age group of our participants was “over 50” which included 17 out of 215 participants and accounted for 7.9%.

The major number of participants picked a “high school diploma” as the education level, which accounted for 69.3% of the total answers. The second one frequently used answer for the category was “bachelor degree” with 45 participants out of 215 (20.9%). The minor education level group of our participants was “under high school” which included 21 participants (9.8%).

There are 3 main business types of individual business households namely manufacturing, trading, and services. From the total sample taken, 77.2%, 18.6%, and 4.2% were trading, services, and manufacturing respectively.

The majority of participants had “2-5 years” about the business experience, which accounted for 34.4% of the total answers. The second one had “over 5-10 years” with 26.1%. The minority of participants had only 16.7% of the total answers.
4.2. Cronbach’s Alpha test for reliability of the scale and exploratory factors analysis (EFA)

Table 3
The scale reliability test for factors affecting tax compliance of business households in Vietnam

| Item | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach’s Alpha if Item Deleted |
|------|---------------------------|-------------------------------|---------------------------------|---------------------------------|
| TK1  | 11.18                     | 6.149                         | 0.670                           | 0.766                           |
| TK2  | 11.18                     | 6.588                         | 0.589                           | 0.803                           |
| TK3  | 11.27                     | 5.994                         | 0.652                           | 0.775                           |
| TK4  | 11.13                     | 6.138                         | 0.679                           | 0.762                           |

Cronbach’s Alpha for Tax Knowledge (TK) = 0.823

| Item | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach’s Alpha if Item Deleted |
|------|---------------------------|-------------------------------|---------------------------------|---------------------------------|
| TR1  | 6.70                      | 6.399                         | 0.588                           | 0.762                           |
| TR2  | 6.71                      | 6.730                         | 0.590                           | 0.759                           |
| TR3  | 6.79                      | 6.213                         | 0.679                           | 0.715                           |
| TR4  | 6.80                      | 6.684                         | 0.591                           | 0.759                           |

Cronbach’s Alpha for Tax Rate (TR) = 0.799

| Item | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach’s Alpha if Item Deleted |
|------|---------------------------|-------------------------------|---------------------------------|---------------------------------|
| TP1  | 7.32                      | 2.871                         | 0.538                           | 0.553                           |
| TP2  | 7.29                      | 3.122                         | 0.485                           | 0.621                           |
| TP3  | 7.30                      | 2.885                         | 0.491                           | 0.615                           |

Cronbach’s Alpha for Tax Penalty (TP) = 0.690

| Item | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach’s Alpha if Item Deleted |
|------|---------------------------|-------------------------------|---------------------------------|---------------------------------|
| PN1  | 6.77                      | 3.310                         | 0.579                           | 0.698                           |
| PN2  | 6.73                      | 2.971                         | 0.621                           | 0.651                           |
| PN3  | 6.67                      | 3.333                         | 0.584                           | 0.693                           |

Cronbach’s Alpha for Personal Norm (PN) = 0.763

| Item | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach’s Alpha if Item Deleted |
|------|---------------------------|-------------------------------|---------------------------------|---------------------------------|
| PF1  | 7.21                      | 3.225                         | 0.646                           | 0.804                           |
| PF2  | 7.35                      | 2.985                         | 0.713                           | 0.738                           |
| PF3  | 7.47                      | 2.933                         | 0.704                           | 0.747                           |

Cronbach’s Alpha for Perceived Fairness (PER) = 0.829

| Item | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach’s Alpha if Item Deleted |
|------|---------------------------|-------------------------------|---------------------------------|---------------------------------|
| TC1  | 7.37                      | 1.290                         | 0.578                           | 0.704                           |
| TC2  | 7.34                      | 1.309                         | 0.645                           | 0.625                           |
| TC3  | 7.30                      | 1.436                         | 0.565                           | 0.714                           |

Cronbach’s Alpha for Tax Compliance (TC) = 0.763

Source: The researcher’s data analysis

Table 3 showed that all scales in the second test met reliability requirements. Specially, all Cronbach’s Alpha coefficients were greater than 0.6, with a Corrected item-total Correlation greater than 0.5. All observed variables consistently measured specific, statistically, and
analytically significant. After that, the scales were evaluated by Exploratory Factor Analysis (EFA) to test the unidimensionality of the scales to eliminate inappropriate measurement criteria.

**Table 4**
KMO and Bartlett’s test for factor affecting tax compliance of individual business households in the second test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | 0.747 |
|-----------------------------------------------|------|
| Bartlett’s Test of Sphericity                  |      |
| Approx. Chi-Square                             | 1230.077 |
| Df                                             | 136  |
| Sig.                                           | 0.000 |

| Pattern Matrix                                  |
|-----------------------------------------------|
| Component                                      |
| 1    | 2    | 3    | 4    | 5    |
| TK4   | 0.837|
| TK3   | 0.790|
| TK1   | 0.761|
| TK2   | 0.749|
| TR3   | 0.836|
| TR2   | 0.802|
| TR4   | 0.717|
| TR1   | 0.710|
| PF2   | 0.883|
| PF3   | 0.869|
| PF1   | 0.812|
| PN2   |       | 0.833|
| PN3   |       | 0.820|
| PN1   |       | 0.801|
| TP1   |       |       | 0.814|
| TP2   |       |       | 0.781|
| TP3   |       |       | 0.743|

Source: The researcher’s data analysis

Table 4 showed that all 17 items of five independent factors loaded on five factors with Eigenvalues greater than 1, the cumulative percent of 67.309% and KMO values = 0.747>0.5. Bartlett’s test is significant at p = 0.000<0.05 for the variables measuring five factors, including Tax Knowledge, Tax Rate, Tax Penalty, Personal Norm, and Perceived Fairness (of the tax system), which were all appropriate. The observed variables of factors were strongly correlated.
Moreover, all 3 items of the dependent variable loaded on 1 factor with Eigenvalues greater than 1, the cumulative percent of 67.971%, KMO values = 0.686>0.5, and Bartlett’s test is significant at p = 0.000<0.05. Therefore, exploratory factors analysis was suitable for data and the observed variables of factors were strongly correlated.

4.3. Pearson correlation coefficient analysis

Table 5
Pearson correlation matrix for dependent and independent variables

|     | Variable | 1   | 2   | 3    | 4    | 5    | 6    |
|-----|----------|-----|-----|------|------|------|------|
| 1   | TC       | 1   |     |      |      |      |      |
| 2   | TK       | 0.604** | 1   |      |      |      |      |
| 3   | TR       | -0.550** | -0.418** | 1   |      |      |      |
| 4   | TP       | 0.376** | 0.127 | 0.082 | 1   |      |      |
| 5   | PN       | 0.285** | -0.043 | 0.040 | -0.022 | 1   |      |
| 6   | PF       | 0.158*  | -0.022 | 0.002 | 0.082 | 0.107** | 1   |

Dependent variable - TC

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Source: The researcher’s data analysis

Table 5 presented the Pearson correlation matrix for dependent and independent variables. Results showed that Tax Knowledge (TK), Tax Rate (TR), Tax Penalty (TP), and Personal Norm (PN) were significantly correlated with Tax Compliance (TC) at a 1% significant level (as P<0.01), while perceived fairness (PF) was significantly correlated with tax compliance (TC) at 5% significant level (as P<0.05). Therefore, this result suggested that Tax Knowledge, Tax Rate, Tax Penalty, Personal Norm, and Perceived Fairness (of the tax system) were significantly correlated with tax compliance.

4.4. Regression analysis

Table 6
Results of multiple regression analysis

|     | Variable | Coefficient | T     | Sig.  | Tolerance | VIF   |
|-----|----------|-------------|-------|-------|-----------|-------|
|     | (Constant) |            | 7.906 | 0.000 |           |       |
| TK  |          | 0.395       | 9.521 | 0.000 | 0.798     | 1.253 |
| TR  |          | -0.428      | -10.351 | 0.000 | 0.806     | 1.241 |
| TP  |          | 0.361       | 9.504 | 0.000 | 0.953     | 1.049 |
| PN  |          | 0.313       | 8.299 | 0.000 | 0.968     | 1.033 |
| PF  |          | 0.085       | 2.249 | 0.026 | 0.962     | 1.039 |

Model fit

R    | 0.844
R²   | 0.713
Adjusted R² | 0.706
St. Error   | 0.29741
Based on Table 6, estimated regression showed that standardized coefficients for Tax Knowledge (TK), Tax Rate (TR), Tax Penalty (TP), Personal Norm (PN), and Perceived Fairness (PF) were statistically at a 5% level (P-value < 0.05). The TK, TP, PN, and PF variables had a positive impact on tax compliance while the TR variable had a negative one.

The adjusted R² was 0.713 indicating that 71.3% of tax compliance’s variance (dependent variable) was explained by the independent variables’ variance. The F statistic in regression (F = 103.658, p = 0.000) was affirmed at a 1% significant level, indicating that the estimated regression was efficient for prediction. Durbin-Watson = 1.983, which was in the acceptable range of 1.5-2.5, and the Tolerance value was also in the acceptable range.

Results also revealed that there was no multicollinearity among the independent variables as variance inflation factors (VIF) was also low (less than 1.253). Therefore, the regression model for business households’ tax compliance in Vietnam could be established as follows:

\[
\text{Tax compliance} = -0.428 \text{ Tax Rate} + 0.395 \text{ Tax Knowledge} + 0.361 \text{ Tax Penalty} + 0.313 \text{ Personal Norm} + 0.085 \text{ Perceived Fairness (of the tax system)}
\]  

(2)

4.5. Hypothesis test of model

Based on the results of the multiple regression analysis, the result of hypothesis testing was shown in Table 7.

Table 7
Result of the hypothesis test

| No. | Hypothesis                                           | Standardized Coefficients Beta | Result |
|-----|------------------------------------------------------|--------------------------------|--------|
| H1  | Tax Knowledge has a positive (+) impact on tax compliance | 0.395                          | Accepted |
| H2  | Tax Rate has a negative (-) impact on tax compliance  | -0.428                         | Accepted |
| H3  | Tax Penalty has a positive (+) impact on tax compliance | 0.361                          | Accepted |
| H4  | Personal Norm has a positive (+) impact on tax compliance | 0.313                          | Accepted |
| H5  | Perceived Fairness (of the tax system) has a positive (+) impact on tax compliance | 0.085                          | Accepted |

Source: The researcher’s data analysis

Accordingly, the result of this study, the Tax Rate (β = -0.428) had a negative and strongest impact on tax compliance, thus hypothesis H2 is accepted. This is consistent with studies by Hai
and See (2011) and Tilahun (2018). This result also provides evidence that a high tax rate led to lower tax compliance of business households in Ho Chi Minh City, Vietnam. Therefore, decreasing the tax rate for business households can enhance tax compliance of business households.

Regarding Tax Knowledge ($\beta = 0.395$), the result of this study shows a significant positive impact on tax compliance. Thus, hypothesis H1 is accepted. This result is as like as results of Niemirowski et al. (2003); Ngo et al. (2019). This result also suggests that Tax Knowledge is a key factor influencing tax compliance of business households. It means that providing and training knowledge about tax to business households can help to prevent tax evasion and enhance tax compliance of business households.

Regarding Tax Penalty ($\beta = 0.361$) had a significant positive impact on tax compliance. Thus, hypothesis H3 is accepted. This result is consistent with Hasseldine et al. (2007) and Ngo et al. (2019) that increasing the tax penalties led to increasing tax compliance of business households.

Regarding Personal Norm ($\beta = 0.313$), this study found a positive and significant relationship between Personal Norm and tax compliance. Thus, hypothesis H4 is accepted. This finding is similar to the following studies Braithwaite (2003); Wenzel (2003) that the more developed the moral reasoning or tax ethics, the more likely it is voluntary tax compliance of business households.

Regarding the Perceived Fairness (of the tax system) ($\beta = 0.085$), this study found that a positive and slight relationship between Perceived Fairness and Tax Compliance. Thus, hypothesis H5 is accepted. This result is consistent with Tilahun (2018). The result also suggests that if business households think that the tax system is fair, Tax Compliance is more likely to occur. For example, if a business household feels that their tax burden is similar to the same income group, their Tax Compliance probably increases.

6. Conclusions and recommendations

This paper focuses on identifying determinants affecting Tax Compliance of business households in Ho Chi Minh City, Vietnam. The results of qualitative research proposed a model for Tax Compliance with 5 factors and 17 observed variables: Tax Knowledge, Tax Rate, Tax Penalty, Personal Norm, and Perceived Fairness. Quantitative research used a 5-point Likert scale to evaluate observed variables. The valid sample size for quantitative research was 215 and SPSS 25 was used for data processing. The results of EFA showed that 17 observed variables were measuring 5 factors as the proposed model. After analyzing regression, Tax Knowledge, Tax Penalty, Personal Norm, and Perceived Fairness had a positive relationship with tax compliance while the tax rate had a negative one. These determinants are organized according to the level of influence from high to low following: Tax Rate, Tax Knowledge, Tax Penalty, Personal Norm, and Perceived Fairness respectively.

According to business households in Ho Chi Minh City, Vietnam, the “Tax Rate” had the strongest and negative impact. To enhance tax compliance of business households, the tax authorities need to reduce tax rates and the local authorities need to improve the responsibility of the Local Tax Consultative Council for determining taxable income and tax rate of business households and avoiding omitting business households that have not been included in the tax administration.

Because “Tax Knowledge” had a second impact on tax compliance of business households in Ho Chi Minh City, Vietnam, the government in general and tax authorities, in particular, should
develop professional training programs related to tax laws, tax issues, and modes of tax payment and collection for business households. With the help of tax education, business households can improve compliance with tax.

Despite the “Tax Penalty” had the third impact on tax compliance of business households in Ho Chi Minh City, Vietnam, there are 2 solutions to enhance tax compliance. Firstly, the tax authorities need to publicize the list of individual business households having high tax risks and tax debts in the media like making with companies in Vietnam. As a result, other business households may be more active in tax compliance. Finally, the tax authorities should strictly punish those cases that deliberately file incorrect returns or evade tax, or commit tax fraud to increase tax compliance of business households.

“Personal Norm” had a fourth impact with a positive impact on tax compliance of business households in Ho Chi Minh City. Therefore, the tax authorities should set up good propaganda groups to communicate how to behave correctly about tax and to disapprove non-compliance behaviors. Especially, these groups can help business households by sharing tax experiments. Moreover, legal education should be included in all level educational programs in Vietnam.

Although the least impact on tax compliance of business households in Ho Chi Minh City was “Perceived Fairness” (of the tax system), there were also some solutions concerning this. Firstly, the government must build transparent, non-bureaucratic, and responsible institutions and must use the collected tax wisely for the benefits of the public such as good infrastructure facilities. Secondly, the tax authorities should assess the taxable income based on the information provided by business households and checked by the Local Tax Consultative Council. Finally, the tax authorities should consider the available market condition, inflation, and fairness among business households. Therefore, the tax authorities and the Local Tax Consultative Council need to coordinate closely and work seriously and fairly.

In conclusion, this study focused on bringing evidence that some determinants do have an impact on tax compliance of business households in Ho Chi Minh City, Vietnam. However, this research also has some limitations. First of the survey ample has trust been limited to 215 observations conducted in Ho Chi Minh City, so further research can broaden this study to cover some other provinces and cities of Vietnam or the whole country. Moreover, this study only researched some factors affecting tax compliance. Some other factors need to be considered in future further studies, such as tax compliance cost, income level, income source, tax audit, etc.

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