

# An Investigation of the Determinants of Tax Compliance Among Yemeni Manufacturing SMEs Using the Fisher Model

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**ABSTRACT**---Tax compliance contributes to social and economic development by reducing government fiscal deficit, debt and generating finance for infrastructure. However, there are challenges resulting from corruption and low tax compliance behaviours among SMEs which hinders generation of adequate revenues by the government. Currently, the Yemeni tax authority is focused on the increasing tax revenue generation from the large number of SMEs in the country. Therefore, this study contributes towards such effort. The objective of the study is to investigate the effect of tax fairness, peer influence and perception of corruption on tax compliance behaviour among Yemeni manufacturing SMEs. The study utilized the socio-psychological theory, primarily the Fischer model as the underlying theory. This research employs a questionnaire survey technique. Survey instruments were circulated among 490 SMEs and the primary respondents were owner-managers of the businesses. Out of the survey questionnaire retrieved, 372 were found eligible for further analysis. The research hypotheses were subsequently tested utilizing the Partial Least Squares (PLS) software and the structural equation model (SEM) technique. Findings from the study show that tax fairness and peer influences are positively and significantly related to SMEs tax compliance behaviour. However, perception of corruption has an insignificant impact on tax compliance among Yemeni SMEs. The implication of the study is that the government and tax authority should update and provide new tax laws and policies that can ensure fairness among taxpayers and minimize corruption among government officials. There is need to create more awareness among SMEs on the importance of paying tax to the government. Based on findings from this study, if these measures are implemented, it is hoped that SMEs' owner-managers would improve their tax compliance.

**Keywords**---Tax Compliance, SMEs, Tax Fairness, Peer influence, Corruption, Yemen

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## I. INTRODUCTION

Taxes are seen as a primary source of income and a vital mechanism for financing most government programmes around the world. Unfortunately, low tax compliance among SMEs is a continuing problem that prevents various government from generating sufficient revenue, thus adversely affecting the financing of the public activities (Kirchler, 2007). The problem of low tax compliance is considered as a global menace because it affects both developed and developing

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economies (Hindriks et al., 2008). Tax compliance is an important obligation for individuals and firms in both developed and developing countries and taxpayers have the responsibility to report income and pay their tax liabilities correctly (Inasius, 2019). Taxes are one of the most important tools for providing social welfare because they are utilized in the financing of public expenditure such as health services, public infrastructure and education (Güzel et al., 2019). In Yemen, due to low tax compliance, the government finds it difficult to raise adequate tax revenue to cater for public expenditure (Al-Faseel, 2014; Al-Ttaffi, 2017). When compared with other countries, using the tax revenues to the GDP ratios as shown in Table 1, Yemen's ratio is very low.

Table I. Tax performance of Yemen compared to other countries using tax to GDP ratios

Countr y	2008	2009	2010	2011	2012	2013	Average (2008-2013)
UK	26.50	24.34	25.45	25.07	25.35	25.31	25.34
Australi a	24.20	25.39	25.55	26.05	26.53	25.78	25.58
Malaysi a	14.70	14.90	13.30	14.80	15.60	15.30	14.77
<b>Yemen</b>	<b>8.00</b>	<b>7.50</b>	<b>6.00</b>	<b>4.50</b>	<b>7.00</b>	<b>7.10</b>	<b>6.68</b>
Egypt	15.30	15.70	14.10	14.0	13.00	13.70	14.3
Jordan	17.80	17.00	16.00	15.00	15.30	15.20	16.05
Lebano n	16.40	16.80	16.90	16.30	15.20	14.30	15.98
Morocc o	26.50	23.50	22.80	23.30	23.00	23.50	27.60
Tunisia	20.50	20.00	20.10	21.20	21.20	21.20	20.70
Libya	2.60	3.60	3.60	1.40	0.70	1.00	2.15

Source: International Monetary Fund, 2014 p. 12; World Bank Indicators, 2018.

From Table 1, the average tax revenues proportion of Yemen amounted to only 6.68% to GDP for the period between 2008 and 2013, compared to 14.3% and 16% of GDP in countries that have similar economies such as Egypt and Jordan respectively. Some countries generate more than 20% of their GDPs as tax including Morocco, Tunisia and Lebanon (IMF, 2014; World Bank, 2018). An analysis by Bose, Haque & Osborn (2007) and IMF (2014) pointed out that Yemen, Sudan and Libya have the lowest share of tax revenue to GDP among developing countries. In Yemen, Tax non-compliance is a major issue and has reached a very alarming proportion (MPIC, 2018). The tax authority has undergone several reforms and enacted various tax laws to minimize the weaknesses in the tax system and to enhance revenue generation by way of increasing tax compliance. Tax revenues are regarded as important source of Yemen's national income after oil revenues. About 23.9% of the government budget is financed by tax revenue (Al-Faseel, 2014). However, the challenges of tax noncompliance remained a major issue of concern to the Yemeni's tax authority as well as the government (Al-Ttaffi & Abdul-Jabbar, 2016). For instance, the estimated amount of tax noncompliance from 2012, 2013

and 2014 were reported to have reached \$2.5 billion, \$3 billion and \$4 billion respectively (COCA, 2014; Al-Ttaffi & Abdul-Jabbar, 2016).

Furthermore, Yemen's tax revenue to GDP, between 2007 and 2015 range from 6% to 8% except in 2011 when it was 4.5% (World bank, 2018). Overall, it can be noted that the contribution of the tax revenues to the Yemenis government is less than 15% which is lower than which is recommended by the World Bank for tax revenue to GDP for developing countries (World Bank, 2018; MPIC, 2018). This leaves the country with low revenue which is largely due to low tax compliance behaviours among taxpayers. This may partly be because the tax authorities do not adequately investigate the determinants of taxpayer's non-compliance behaviours and this worsen the problem of low revenue generation by the government (COCA, 2018). Furthermore, low tax revenues in Yemen is much more linked to SMEs that do not fulfil their tax revenue obligations (Al-Adofi, 2015). It is reported that the tax revenue collected from SMEs does not exceed 5% of the total tax revenues even though they carry out a substantial portion of economic activities in the country (Al-Ttaffi, 2017).

Therefore, this research constitutes a significant contribution in several ways. First, the data were collected from manufacturing SMEs operating in Yemen. Nearly all of the researches related to tax compliance as well as non-compliance make use of annual reports that do not reveal the real behaviours of taxpayers. Secondly, the research analysed SMEs tax compliance in the Yemen context after Arab spring revolution which marked a turning point in the country's history. Finally, these researches incorporate economics as well as socio-psychological characteristics in investigating SMEs tax compliance behaviours. Additionally, SMEs tax compliance issues ought to be explored, in the Yemeni context as a developing nation. Therefore, this study is very important to determine the impact of tax fairness, peer influence and perception of corruption on tax compliance behaviour in Yemen. The remainder of the study proceeds as follows: the next section reviewed related literature and developed the hypotheses tested in the study. The subsequent section describes the methodology of the study. Next is data analysis and presentation of results. Finally, the last section offers discussions, conclusion, policy implications, limitations, and recommendations.

## II. LITERATURE REVIEW

In the current study, three variables were investigated, they are: peer influence, tax fairness perception and perception of corruption on SMEs tax compliance behaviour. Literature review of these variables was made, and relevant hypotheses were proposed.

### **Theoretical background**

Research on tax compliance began in the early 1970s. During that period, the decision to comply with tax law was framed as a completely economic decision (Alm et al., 2012). Thus, tax compliance is considered a comparatively new research topic (Alm & Torgler, 2011). Compliance studies are often focused on the neoclassical deterrence model that stems from Becker (1968). However, Jackson and Milliron (1986) and Alm (1999) suggest that tax compliance behaviour could be suitably explained by the psychological and social approach in understanding the factors influencing taxpayer's attitudes and compliance behaviours. Comprehensive reviews of past major tax compliance studies are provided by Jackson & Milliron (1986) and Richardson & Sawyer (2001), the earlier being well cited in the tax studies. Jackson & Milliron (1986) provide a review of 43 tax compliance studies carried out between the 1970s and 1985. From this effort, it can be found that there

are many theories regarded as more precise in understanding taxpayers' compliance behavioural factors, especially the social exchange and social influence theories. Equity Theory and Social Influence theory suggests that human association is formed and sustained by the use of comparison of alternatives based on subjective cost and benefit analysis.

Therefore, this paper investigates tax compliance through the equity theory (King & Sheffrin, 2002). The equity theory implies that taxpayers would conform to tax regulations, when they perceive the system determining the rules as equitable (O'Shaughnessy, 2014). Therefore, if the tax system is viewed as unfair or taxpayers perceive disparity between their own economic standing in comparison to others, tax evasion will occur to restore equity in the tax system (King & Sheffrin, 2002). Generally, there is a positive effect of perceived fairness in tax-related affairs, which suggests that the perception of fairness will strengthen tax compliance (Verboon & Van Dijke, 2012). In summary, several studies have used equity theory to explain tax compliance (Alshirah, 2018; King & Sheffrin, 2002; Saad, 2012). Thus, the theory was used in the current study to shed more light on the relationship between tax fairness and tax compliance behaviour. Moreover, social influence theory was also employed in the tax literature to explain the relationship between social norms (peers), perception of corruption and tax compliance. Based on the literature on tax compliance determinants, it was discovered that social norms have a significant relationship with the tax compliance (Richardson & Sawyer, 2001). Consequently, taxpayers' behavior is unintentionally or intentionally affected by their surrounding environment. Therefore, the various factors result in different attitudes and probably lead to the various behaviors among the taxpayers.

### **SMEs Tax Compliance Behaviour**

Several studies have been conducted in both the developing and developed nations around the world regarding the issues of tax compliance. However, there is no universal standard in terms of factors that motivate taxpayers toward noncompliance behaviours (Yusof et al., 2014). Different authors have different perspectives in defining tax compliance behaviour. Tax compliance can be termed as an obligation upon citizens, both individuals and corporate entities. All citizens are required to as a matter of duty to comply with the relevant tax laws; but certain populace seems unable to comply (Kirchler et al., 2014). Corporate bodies and other segment of the society that do not comply with or pay their various taxes constitute a serious problem to tax authorities (Alm, 2019). Despite several attempts to tackle tax compliance, it is still a huge and continuing issue especially in developing countries (Obaid et al., 2020; Umar et al., 2017). Tax compliance is still regarded as being among the contemporary issues, specifically in the developing nations, that are seeking for the right mechanisms for generating tax revenue to boost and improve their public finance (Maseko, 2014). Tax compliance can as well be regarded as a game, that depends on mutual relations amongst taxpayer as well as tax agencies, coupled with the confidence of taxpayer in respect of tax laws, equality and the impartiality of a tax system (Kirchler et al., 2006). Tax compliance has multiple dimensions and procedures which taxpayers are expected to observe: there reports, payment and filings compliant (Brown & Mazur, 2003). Additionally, Palil et al. (2013) stated that tax compliance is an individual act in respect of filing one's tax returns. They author state that tax compliance involves reporting the entire taxable incomes correctly as well as disbursement of all payable taxes in a specified period while not necessarily waiting for action from the tax agencies or authorities. Harmonizing the various meanings from scholars, the author proffered their own definition as taxpayer's willingness to comply with the tax laws, declare the correct income, claim the correct deductions, reliefs and rebates and pay all taxes on time.

Some researchers are of the view that non-compliance can take several forms. These include failure to submit tax returns within the specified time, not submitting at all, understating the income; overstating deductions, and not paying the assessed taxes on or before the due date (James & Alley, 2002; Alabede, et al., 2011). Tax compliance, avoidance as well as evasion and fraud have been investigated severally in tax compliance studies, with numerous studies offering some differences between tax evasion as well as tax avoidance. Non-compliance with tax takes the form of both tax evasion as well as tax avoidance, depending on the category of taxpayers' businesses (Likhovski, 2007). Tax evasion involves of illegal and intentional acts performed by organisations and individuals to lower their legally due tax commitments, by under-reporting income, or wealth, by exaggerating deductions, expenses or loans, and by failing to file tax returns correctly and at the right time (Ritsatos, 2014). Tax evasion is seen as a deliberate act related to tax non-compliance resulting in the payment of taxes less than the outstanding (Kasipillai et al., 2003). Abdul-Jabbar & Pope (2008) stated that tax evasion consists of aspects of unlawful behaviour connected with the intentional acts of a taxpayer in distorting tax reports, misleading the tax agency so as to pay lower taxes than is actually owed. Tax evasion violates the tax laws. Additional, tax non-compliance can take the form of failure to present or render tax return at the appropriate time or the non-submission of tax returns, underestimation of accruable income, exaggeration of deductions, as well as failure to pay estimated taxes at the appropriate time (Kasipillai & Abdul-Jabbar, 2006). This makes the issue of non-compliance very worrisome especially in developing countries such as Yemen where the tax laws and enforcement agencies are weak, hence governments are deprived of substantial tax income that are useful for nation building.

### **Tax Fairness**

Tax fairness is one of main factors of a good tax system (Thomas, 2012). Tax fairness is believed to be one of the major determinants of tax compliance (Jackson & Milliron, 1986). It is largely understood by tax officials, and also by the taxpayers that an increasing discontent with regards to the fairness on the part of tax administration is the main reasons for decreased tax compliance (Chau & Leung, 2009). Tax fairness consists of two factors. Firstly, vertical fairness involves the fairness in terms of the benefits gotten for tax paid. Distributive tax fairness focuses on the sharing of tax burden among the individuals by comparing one's own tax with others in relation to amount paid in tax and the benefit received from the state. Secondly, horizontal tax fairness focuses on taxpayer's assessment of their tax burden when compared to the amount paid by other taxpayers on the same level (Wenzel, 2003).

Solano-Garcia (2017) reported that voters' reactions to policies strongly depend on their perception of tax fairness and this also determine their tax compliance. Ubig (2002) and Samuel & Dieu (2014) stated that fairness of tax agencies and the administrative process give confidence to the public and persuade the taxpayers, that tax laws are fair, and invariably lead to tax compliance. The finding is reinforced by previous researches (Alshira'h & Abdul-Jabbar, 2019; Woodward & Tan, 2015). Whereas, Ajaz & Ahmad (2010) indicated that national authority can ensure tax fairness that in turn can lead to increased tax compliance. They went on to argue that public governance creates a reliable tax system. Similarly, Maseko (2014) indicate that SMEs perception of tax fairness affect their tax compliance decisions. On the contrary, previous researches discovered that tax fairness has an inconsequential relationship with tax compliance (Abdul-Jabbar, 2009; Engida & Baisa, 2014; Faizal & Palil, 2015). In the view of Saad (2011) which investigated various dimensions of fairness by including vertical fairness, horizontal fairness, exchange fairness, retributive fairness, personal fairness, administrative fairness and general fairness, on tax compliance, except for horizontal fairness, all other dimensions of fairness are

insignificant in terms of their effect on tax compliance. The findings are backed by another previous research conducted (Abdul-Jabbar, 2009; Engida & Baisa, 2014). Conversely, Tumwesigye (2011) showed a substantial negative relationship between tax fairness and tax compliance.

Overall, the relationship between tax fairness and tax compliance is still not well defined as a result of the varied outcomes in the literature. Most studies on tax fairness and tax compliance have centred on individuals, whereas the relationship between SMEs' tax compliance and tax fairness has gotten only a modest attention. Consequently, a lot of researches need to be undertaken to determine the relationship between tax fairness and SMEs tax compliance. Thus, more researches are needed to ascertain the relationship between tax fairness and tax compliance. The current study investigates tax fairness as a key element in the determination of tax compliance. To the best of the researcher's knowledge, there have been little research on the influences of tax fairness in relation to tax compliance behaviour among SMEs in Yemen. Therefore, in this study, the relationship between tax fairness and SMEs tax compliance in Yemen was investigated. Therefore, the following hypotheses is proposed:

*H<sub>1</sub>: There is a positive relationship between tax fairness and SMEs tax compliance behaviour.*

### **Peer Influence**

Peer influence is one of the variables that determines tax compliance in the Fischer's model. Past literature has ascertained the importance of peer influence. The term peers refer to taxpayers' associates which could be relatives, friends, co-workers as well as contemporaries. They are believed to regularly communicate or deliberate on the tax compliance choices amongst themselves (Bidin & Sinnasamy, 2018; Jackson & Milliron, 1986). Peer influence is regarded as the effect of people who are significant for SMEs' owner-managers as well as the social influences such as close friends, family members, current or future manager and spouse and significant others (Hanno & Violette, 1996). Several of the preceding literatures found peer influence as having a significant impact in the determination of compliance decision (Blanthorne & Kaplan, 2008; Bobek, et al., 2007). Furthermore, Wenzel (2002) argued that peer influence has 'significant effect' on tax compliance behaviour. Hence, Lefebvre et al. (2015) reported the significance of not ignoring the presence of peer impact when examining the tax compliance behaviour. Among SMEs, peers have influences on the tax compliance behaviour of their counterparts and SMEs will evade tax payment if they feel that their peers were evading without punishment (Alshira'h, 2019; Bidin & Sinnasamy, 2018; Maseko, 2014). Therefore, this study defines peer influence as the effect of people who are significant for SMEs' owner-managers on their tax compliance decision, thus contributing in shaping their attitude towards tax compliance.

Prior literatures on tax compliance behaviour found a positive relationship between tax compliance and peer influence (Bobek et al., 2013; McGee et al., 2011; Tusubira & Nkote, 2013). On the other hand, some other studies on tax compliance behaviour found a negative relationship between tax compliance and peer influence (Alon & Hageman, 2013; Frey & Torgler, 2007; Palil et al., 2012). However, some other studies declared that the peer influence has no impact on the tax reporting decisions (Borrego et al., 2013). In Malaysia, Bidin and Sinnasamy (2018) found that peer influence has a significant negative relationship with excise duty compliance. On other hand, some other studies on tax compliance behaviour found a negative relationship between tax compliance and peer influence (Alon & Hageman, 2013; Torgler, 2012; Frey and Torgler, 2007). Moreover, Alshira'h (2019) indicated that there are inconsistent results regarding peer influences and sales tax compliance.

From the perspective of the indirect tax, past literature pointed out that there is an insignificant relationship between peer influence and sales tax compliance amongst Jordanian SMEs.

In general, the relationship between peer influence and tax compliance showed inconsistency in the literature. Many prior studies have investigated peer influence and tax compliance based on the behavior of individuals whereas SMEs' tax compliance and its relationship with peer influence has received a limited interest. Consequently, more studies are needed to investigate the association between peer influence and SMEs tax compliance behaviour since peer influence is one of the primary factors influencing tax compliance behaviour. Because no study has been conducted on the relationship between peer influence and tax compliance behaviour of SMEs in Yemen, this study investigated the relationship amongst peer influence and SMEs tax compliance in Yemen. Therefore, it was hypothesized as follows:

*H<sub>2</sub>: There is a positive relationship between peer influence and SMEs tax compliance behaviour.*

### **Perception of Corruption**

Perception of corruption is one of the variables investigated in this study. The problem of corruption is probably as old as government itself (Campbell, 2013). Corruption is an intricate socio-political and economic issue that is widespread in all nations to a differing degree (Rohwer, 2009). Corruption can be termed as gross abuse of power for personal benefit (Aguilera & Vadera, 2008). Alm et al. (2016) state that the relationship between corruption and tax compliance is not new, but both are significant problems facing today's economies. Akdede (2011) posited that the magnitude of corruption among tax officials intensifies the scale of tax non-compliance among taxpayers. Similarly, Okpala (2013) studied factors that lead to tax evasion and avoidance in Nigeria. Finding of the study shows that the level of corruption among tax officials has a positive and significant relationship with tax evasion. It can also be argued that an upsurge in the magnitude of corruption will result in increased tax non-compliance (Alm et al., 2016).

Other researchers have also indicated that corruption is negatively related to tax compliance (Imam & Jacobs, 2007; Joulfaian, 2009; Nur-tegin, 2008). Many studies have found that taxpayers are more sceptical about corrupt practices of public officials and this could be one of their main reasons for not complying with the tax provisions and paying their taxes (John & Slemrod, 2008; Alm et al., 2016). Taxpayers are of the opinion that the high level of corruption among the tax personnel and inefficient tax system and administration, could encourage both individuals as well as corporate taxpayers to hide their income and thus, fall into the trap of tax non-compliance (Wadhwa & Pal, 2012). In addition, SMEs are of the view that the soaring scale of corruption among the tax personnel and a corrupt tax system and administration encourage them to hide their income, thus motivating them toward tax non-compliance (Imam & Jacobs, 2007; Alon & Hageman, 2013). Furthermore, Muhrtala & Ogundeji (2013), in their study discovered a positive relationship between corruption and tax compliance. They further concluded that corruption contributes and motivates taxpayers towards tax non-compliance behaviours.

In general, the relationship between perception of corruption and tax compliance still needs further investigation. However, corruption and tax compliance had been investigated at the level of individuals, but SMEs' tax compliance and the influence of corruption has been overlooked as noted by Dbwan (2014). The author stated that corruption is a social

factor that has a great influence on the behaviour of taxpayers because the individuals and organizations are affected by the general societal behaviour. Hence, further researches need to be conducted to investigate the relationship between perception of corruption and tax compliance behaviours. Additionally, to the best of the researcher's knowledge, there is a lack of study in Yemen that investigate the relationship between perception of corruption and tax compliance behaviours of SMEs in the country. Therefore, in this research, the relationship between perceived corruption and SMEs tax compliance in Yemen was investigated. Hence, the research hypothesized as follows:

*H<sub>3</sub>: There is a negative relationship between perception of corruption and SMEs tax compliance behaviour.*

### Conceptual Framework

From the foregoing discussion and as demonstrated in previous literatures, the conceptual framework of the research is shown in Fig. 1

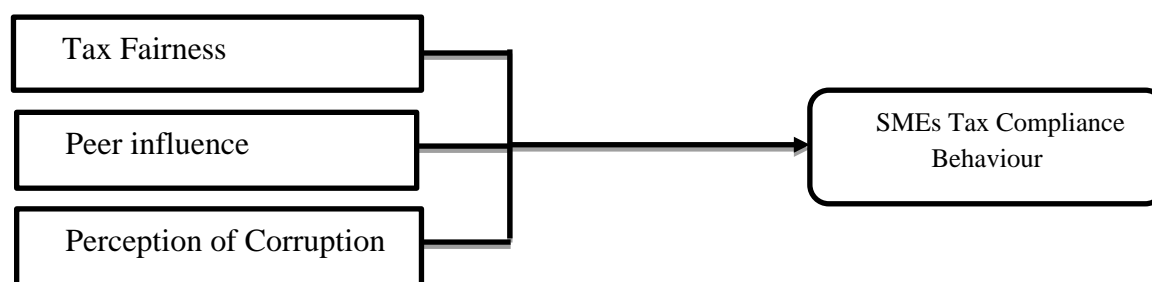


Fig.1 Research Model

## III. METHODOLOGY

### Design, population and sample

This research is quantitative in design and it investigated the relationships between independent and dependent constructs. The study takes into consideration registered SMEs in Yemeni ministry of industries and trade (YMIT) from a sampling frame of 27,796 Yemeni manufacturing SMEs registered in the country (YMIT, 2014). The unit of analysis of the research is the SMEs (Abdullah et al., 2018). The sample size in this research is 377 as enunciated by Krejcie & Morgan (1970). To mitigate the effect of low response rate typical in several researches involving SMEs, there is a need to expand the sample size by 30%. This can be attributed to previous literature that revealed a non-response rate of 67% among businesses in Yemen (Al-Ttaffi, 2017). Based on the issues raised above, the sample size of this research was increased to 490 manufacturing SMEs. According to YMIT (2014), 82.95% of manufacturing SMEs in Yemen are located in these ten governorates. This is followed by identifying the number of manufacturing SMEs in each governorate based on the proportions of manufacturing SMEs in each governorate. Table 1 shows the calculation of the sample size in ten Yemeni governorates.

Table 2. Determining the Number of Subjects in the Sample for the Ten Governorates in Yemen

Governorates	Number of SMEs	The proportion of SMEs in the strata	The proportion of each stratum in the sample	Number of respondents in the
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governorates		(Adjusted rates)		Sample
Sana'a	6190	22.27%	27%	132
Ta'izz	3871	13.93%	17%	83
Dhamar,	2237	8.05%	9.7%	47
Hadramaut,	2082	7.49%	9%	44
Ibb	3402	12.24%	14.8%	73
Al Hudaydah	1911	6.88%	8.3%	41
Adan	735	2.64%	3.2%	16
Shabwah	802	2.89%	3.5%	17
Lahij	717	2.58%	3.1%	15
Amran	1051	3.78%	4.5%	22
other	4798	17.3%	-	-
Governorates				
<b>Total</b>	<b>27,796</b>	<b>100%</b>	<b>100%</b>	<b>490</b>

Source: Prepared by the author based on the statistics provided by YMIT (2014)

### Questionnaire and measurements

Questionnaire with closed-ended questions was used in the collection of Data from the respondent. The study's respondents are owners/managers of SMEs because of their knowledge of taxation and capacity to respond to the questions and provide the required information. Thus, a systematic random sampling technique was utilized in this study to select 490 respondents from the list provided by YMIT. The study adopts a survey research design. Whereas, Five-point Likert-scale questionnaire starting with 1=strongly disagree (SD), 2=disagree (D), 3=neutral (N), 4=agree (A), and 5=strongly agree (SA). The items for all the constructs adapted in this study are from previous literatures. For reasons of parsimony, the indicators are formulated to suit owners/managers of SMEs. The coefficients showed that the measurements are reliable to a large extent. Questionnaires were self-administered and the data collection process took place over a span of three months to give the respondents enough time to complete the questionnaire. Within a period of three months, 385 questionnaires were retrieved from the SMEs. Out of which 6 were found not complete and subsequently deleted or expunged from the analyses and 7 were discovered to be outliers. Hence, the effective response rate for this research was (372) 76% is acceptable.

### PLS data analysis and results

This research employed partial least square structural equation modelling (PLS-SEM) in order to test the recommended hypotheses. Numerous scholarly works argue that PLS-SEM would perform effectively within certain circumstances or situations (Hair et al., 2016; Hair et al. 2012). PLS-SEM is recommended as being a useful and a suitable analytical tool in a situation where the recommended model involves higher-order latent variables (Becker et al., 2012; Hair et al., 2011).

## IV. FINDINGS

### Assessment of measurement model

#### Discriminant Validity

The measurement model assesses the relationship between the indicators as well as the constructs. Two kinds or forms of validity were analysed to evaluate the measurement model. First is the convergent validity followed by discriminant

validity. Convergent validity is determined by examination of the indicators loadings, average variance extracted (AVE) as well as composite reliability. As shown in Table 3, indicator loadings for the items exceeded the threshold value of 0.50 as recommended by Hair et al., (2016). However, the loadings for items of peer influence (item 5 and 6) and perception of corruption (item 4) were deleted due to low loading. The composite reliability was greater than the recommended value of 0.70 while, AVE values are higher than cut-off point of 0.50 as suggested by Hair et al. (2016).

**Table 3.** Convergent validity

Construct	Item	Loadings	Cronbach's Alpha	CR	AVE
SMEs Tax Compliance Behaviour (STCB)	STCB1	0.807	0.820	0.871	0.531
	STCB2	0.774			
	STCB3	0.766			
	STCB4	0.677			
	STCB5	0.741			
	STCB6	0.585			
Tax Fairness (TFA)	TFA1	0.746	0.836	0.876	0.504
	TFA2	0.686			
	TFA3	0.744			
	TFA4	0.732			
	TFA6	0.735			
	TFA7	0.681			
Peer Influences (PIN)	TFA8	0.635	0.722	0.825	0.544
	PIN1	0.790			
	PIN2	0.823			
	PIN3	0.667			
Perception of Corruption (PCO)	PIN4	0.656	0.856	0.913	0.777
	PCO1	0.850			
	PCO2	0.926			
	PCO3	0.866			

Note: CR= Composite reliability; AVE average variance extracted

### Discriminant Validity

With the convergent validity established, the next phase is testing the discriminant validity going by Fornell and Larcker and Heterotrait-Monotrait ratio (HTMT) criterion. In this method, the Fornell-Larcker criterion, discriminant validity is established when the value of the square root of the AVE of the individual constructs are higher than the highest correlation of the construct with other constructs (Hair et al, 2019; Henseler et al., 2015). Table 3 shows that all the square roots of AVE ranged between 0.710 and 0.881 and are greater than their correlations with the other latent constructs. As shown in Table 4, the square root of AVE's is higher than all cases as well as the diagonal values in the respective rows and columns. Therefore, this shows or signifies that sufficient discriminant validity was attained.

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Table 4. Fornell-Lacker Discriminant Validity Analysis

	PCO	PIN	STCB	TFA
PCO	<b>0.881</b>			
PIN	0.216	<b>0.737</b>		
STCB	0.160	0.276	<b>0.729</b>	
TFA	0.309	0.435	0.428	<b>0.710</b>

In the second approach, the HTMT value over 0.90 indicates an absence of discriminant validity. When the constructs with regards to the path model are practically distinctive, a lesser and perhaps a more moderate threshold value of 0.85 appears reasonable (Henseler et al., 2015). Furthermore, the HTMT should be able to serve as the base for a statistical discriminant validity test (Hair et al., 2016). Table 5 shows that all the square roots of HTMT ranged between 0.186 and 0.500. Generally, the measurement model showed the satisfactory convergent validity as well as discriminant validity.

Table 5. Heterotrait-Monotrait Ratio (HTMT)

	PCO	PIN	STCB	TFA
PCO				
PIN	0.252			
STCB	0.186	0.344		
TFA	0.360	0.556	0.500	

### Assessment of Structural Model

The predictive power of research model evaluated by  $R^2$  (coefficient of determination) showed the joint impact of exogenous variables on endogenous variable (Wong, 2013). In this study, Smart PLS algorithm function was employed to find the  $R^2$  value in order to evaluate the amount of variance explained by the exogenous variables (Hair et al., 2019). The result indicates that  $R^2$  value for SMEs tax compliance behaviour is 0.193 suggesting that 19.3 % of the variance in the SMEs tax compliance behaviour was explained by tax fairness, peer influence and perception of corruption. The bootstrapping function with 5000 resampling from 372 cases was performed. Moreover, the path estimates and t-values calculated in respect of the hypothesized association. Table 6 illustrates the findings of the structural model's analysis. The findings indicate that tax fairness ( $\beta=0.374$ ,  $p<0.005$ ), is positively and significantly related to SMEs tax compliance behaviour which supported H1. Peer influence ( $\beta=0.109$ ,  $p<0.05$ ) is positively and significantly related to SMEs tax compliance behaviour which supported H2 and perception of corruption ( $\beta=0.021$ ,  $p<0.336$ ) is insignificant related to SMEs tax compliance behaviour which does not support H3.

Table 6. Result of Hypotheses Testing

H	Relationship	Path coefficient	T –Value	P – Value	Decision
H1	TFA-> STCB	0.374	6.600	0.000***	Supported
H2	PIN-> STCB	0.109	1.863	0.032*	Supported
H3	PCO-> STCB	0.021	0.425	0.336	Not Supported

Note: Significant at \*  $p < 0.05$ , \*\*\* $p < 0.001$

## V. Discussions

The research's objective is the investigation of the relationship between tax fairness, peer influence and perception of corruption with SMEs tax compliance behaviour. The findings revealed that tax fairness was found to have a significantly positive relationship with SMEs tax compliance behaviour. Hence, it supports H1. The finding aligns with postulation of socio-psychological theories of tax compliance (Adams, 1965) which suggests that fairness of tax structure influences taxpayer behaviour positively. The outcome is in line with existing literature which maintains that there is a significantly positive relationship between tax fairness and tax compliance in respect of SMEs (Woodward & Tan, 2015; Alshira'h & Abdul-Jabbar, 2019). Consequently, being part of the first objective related to the study, the finding provides evidence that tax fairness is a positive determinant of SMEs' tax compliance in Yemen.

The result demonstrates that peer influence positively relates to SMEs tax compliance. The finding falls in line with preceding researches (Çevik, & Yeniçeri, 2013; McGee et al., 2011; Tusubira & Nkote, 2013). Peer influence will not influence the level of tax compliance of those who do not identify with the group. However, taxpayers are compliant if they believe others are compliant. Furthermore, peer influence would make SMEs compliant or non-compliant. And also, the result could be explained by the characteristics of the Yemeni culture. Yemenis are by nature social and influenced by their surroundings, thus, they may be impacted by their peers. In conclusion, Yemeni SMEs in this survey considered peer influence as having a direct effect on their decision to comply with tax. Therefore, peer influence plays an important role in promoting SMEs tax compliance behaviour among Yemeni SMEs.

This study operationally defines SMEs perception of corruption as giving bribes to the government or tax officials to get things done (Rohwer, 2009). H3 hypothesized a negative influence of perception of corruption on SMEs tax compliance behaviour. Contrary to this postulation, the finding did not support the hypothesis. The finding showed that corruption among tax officials did not considerably increase tax compliance among SMEs. This finding is inconsistent with some previous tax compliance studies (Joulfaian, 2009). However, the result is in line with the finding of Imam and Jacobs (2014) and Musa (2018). Because of the history of political instability in Yemen after Arab spring of 2011, the government encouraged the Supreme National Authority of Combating Corruption (SNACC) (2016). The strong political will and implementation of anti-corruption policies in the new government perhaps was key to changing the perceptions of taxpayers.

In the last decade, Yemen has been considered one of the most corrupt countries with the high level of corruption in the public sector. Dbwan (2014) stated that the corruption is a social factor that has a great influence on the behaviour of taxpayers as the individuals and organizations are affected by the general societal behaviour. Moreover, the low ranking of the country by Transparency International as 175<sup>th</sup> of 180 countries indicates the level of corruption in the country (TIQN, 2017). However, since its inception, SNACC has been seriously fighting corruption and trying to reinstall efficiency in the public sector by prosecuting corrupt government officials and appointing uncorrupted personalities. To be specific, the new government has appointed a new leader for SNACC who has pledged to rake in more tax revenue. This may likely involve more aggressive tax revenue collection. Moreover, plausible explanation for the result could be explained by the characteristics of the Yemeni Islamic culture. Yemenis place great importance on individualism, self-confidence and self-autonomy and respect of Islamic culture which is anti-corruption (bribery). In conclusion, Yemeni SMEs in this survey

considered perception of corruption as not having a direct effect on their tax compliance decision, thus, perception of corruption did not play an important role in determining tax compliance behaviour among Yemeni SMEs.

The research attempts to investigate tax compliance determinants in a direct tax context. Moreover, based on the understanding as a pioneer study in Yemen which underlined SMEs tax compliance behaviour centred on tax fairness, peer influence and perception of corruption. The study utilized the Fischer's model as its underlying theory. Fischer's model is considered as a comprehensive model which incorporates economic, sociological and psychological factors in investigating tax compliance behavior. Furthermore, the research's findings provide or stress the effects of SMEs tax compliance as well as tax authorities and policy makers. This disclosed that taxpayer anticipate a friendlier treatment rather than imposition of penalty. Hence, Yemeni tax authorities should place much emphasis on fairness of the tax system laws by conducting training for taxpayers. Hence, as a result of the objective of the study, the finding presents evidence which showed that both tax fairness and peer influence are a positive determinant of SMEs tax compliance behaviour in Yemen.

## **VI. Conclusion, Policy Implications, Limitations and Recommendations**

Generally, this study's findings showed that tax fairness, peer influence is significantly and positively related to SMEs tax compliance behaviour thus, the proposed hypotheses 1 and 2 were supported. Contrary to the expectations of this study, perception of corruption lacks any significant influence on SMEs tax compliant behaviour in Yemen hence hypothesis 3 was not supported. It adds to the accounting literature in connection with SMEs tax compliance as well as tax fairness, peer influence in the MENA region. Few or scanty researches have been conducted in respect of SMEs tax compliance, and this involved study of Jordan and its context in sales tax compliance (Alshira'h, 2019). Whereas, no research has been undertaken or carried out on SMEs tax compliance and perception of corruption in Arab nations as well as the Middle Eastern countries, particularly Yemen. Therefore, this study can be regarded as a pioneer that was carried out within the context of SMEs tax compliance as well as tax fairness, peer influence and perception of corruption in the Arab peninsula, especially in Yemen. Hence, this research was intended to fill an existing gap in SMEs tax compliance behaviour literature. Findings of the research provide evidence that improving tax fairness and peer influence increase the level of SMEs tax compliance. In discussing tax fairness and peer influence issues, tax fairness influences SMEs tax compliance where SMEs recognize that compliance in respect of tax is justified with regards to the fairness of the tax administration. In order to enhance SMEs tax compliance, the study recommends that tax authorities should make the process of registration fair and lessen tax compliance costs for businesses. Additionally, the study contributes to current literature by providing a first evidence that perception of corruption has an insignificant impact on the tax compliance behaviour of Yemeni SMEs.

Though the research contributes to finding or discovering certain main or key predictors of SMEs tax compliance behaviour, there exist some limitations. The major limitation is that the structured questionnaire may not generate accurate responses of SMEs real and genuine behaviour. Thus, a mixed method approach may be required for generalization of the outcomes or result of the study. Moreover, the limitations of this study provide an avenue for future researchers to explore. Consequently, this research model was able to identify 19.3% of the total variance in SMEs tax compliance. It shows the potentials of more variables which can significantly explain the variance in SMEs tax compliance. Put differently, the remaining 80.7% of the variance in SMEs tax compliance may possibly be explained by more latent variables. Thus, future research is required considering the other probable constructs which may well influence SMEs tax compliance behaviour, for instance, tax information, religiosity, external auditing, tax morale, tax compliance costs as well

as tax service quality are variables that may be considered in future endeavours. This research can be regarded as a pioneer in SMEs tax compliance in the Arab peninsula particularly on SMEs tax compliance behaviour in Yemen. The research can be utilized as a theoretical support by scholars especially in Gulf Cooperation Council (GCC). Nevertheless, this study is restricted to the limited geographical sphere where it was conducted. Therefore, future research should extend the model of the study to other Arab nations as well as the entire Middle East.

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