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# Voluntary tax compliance behavior of individual taxpayers in Pakistan

Ibn e Hassan[1,2*], Ahmed Naeem[1] and Sidra Gulzar[1]

*Correspondence:
ibnehassan@bzu.edu.pk
[1] Department of Commerce, Bahauddin Zakariya University, Multan, Pakistan
Full list of author information is available at the end of the article

## Abstract

Governments settle their financial obligations and pay for the public expenditures largely through finances generated from taxes. For many developing countries like Pakistan, the state authorities are still having difficulty to achieve tax compliance. Existing literature has yet to traverse individual's tax compliance behavior on developing countries. The current study, however, explores the relationships among voluntary tax compliance behavior of individual taxpayers with selected economic, social, behavioral and institutional factors. This individual tax compliance behavior is studied through the multi-perspective lenses of the theory of attribution, equity theory, expected utility theory, and social exchange theory. Quantitative design using the survey method was employed to collect data from 435 individual taxpayers through questionnaire. For testing linkage between constructs, through mediation and moderation tests, structural equation modeling technique was used. The results suggest that tax compliance simplicity has a larger impact on tax filing than perception about Government Spending and tax morale. Furthermore, perception of fairness significantly mediates the strengths between morale, simplicity, government spending and compliance behavior.

**Keywords:** Compliance behavior, Individual taxpayers, Pakistan, Perception of fairness, Tax compliance simplicity, Tax morale, Voluntary tax

## Introduction and background

The issue of tax compliance is as old as taxes itself. Distinguishing and describing the recorded patterns of tax noncompliance and finally finding ways to reduce it, are clearly a dominant feature of state governments around the world. The economics of tax compliance can be viewed as a problem of public finance, law enforcement, organizational design, labor supply, ethics, or a combination of all of these.

Literature has featured the constructs of tax compliance in various dimensions. Tax compliance is defined as the ability and willingness of taxpayers to comply with the tax laws, declare the correct income for each year and pay the right amount of taxes on time. Similarly, James and Alley (2004) state that tax compliance is viewed as the degree to which a taxpayer gratifies to tax rules and regulations. However, Voluntary tax compliance is the readiness of an individual and other entities to abide by the tax laws without the application of any enforcement (Kirchler 2007; Palil 2010; Alabede et al. 2011). Around the world, tax authorities are facing the challenges of financial management

pertaining to performance in the collection of tax revenues. Around the world tax authorities are facing the challenges of fiscal management pertaining to performance in the collection of tax revenue. The Tax non-compliance is an attitudinal tendency of taxpayers that may lead to tax behavior i.e. tax avoidance and/or tax evasion (Natrah 2012).

Pakistan is an emerging economy and faces unique tax-related challenges. An International Monetary Fund (IMF) working paper (2016) concluded the challenges faced by Pakistan regarding tax compliance; firstly; according to the data compiled by the Federal Board of Revenue (FBR) and the Ministry of Finance, the number of active individual tax filers is 1,156,984, but 5,700,000 people are reportedly earning above the minimum taxable income threshold. Secondly, the broad utilization of tax concessions and exemptions has resulted in a tax administration related issue. Thirdly, tax revenue was 12.4% of GDP in 2016 and is still significantly below Pakistan's tax revenue potential. Lastly; the structure of indirect tax revenues is to account for about 65% of total tax revenue. Individuals are not congenial with direct taxes, which indicates the low tax morale of individuals.

Additionally, Pakistan's large underground economy comprises of the large number registered taxpayers, which Kemal (2003) estimated at around 35–40% of GDP. Moreover, efficiency and fairness are not promoted by Pakistan's tax system. The performance of the Pakistan tax administration system is worse than average due to the corruption which has declined the efficacy of field audits and dropped the earnings of withholding tax on wages and salaries. Even after confirmed inefficiency in converting tax evaders to be in the tax net, tax amnesty schemes are popular with policymakers (Cyan et al. 2016). Similarly, interventions that highlight the contribution of taxes to the public good, contain normative appeals that have nil effects on tax compliance or even backfire in the sense that they reduce tax revenues (Cyan et al. 2017). Likewise, supportive tax treatment to limited interest groups creates an opportunity for tax evasion, corruption and substantial distortions in Pakistan's economy (Cyan et al. 2016).

Authors noted that Taxpayers come from different culture, income level, various background, with different level of education and different tax knowledge. So, the tax authority should present itself with simple and sufficient return, the tax compliance laws should be as simple as allowing taxpayers to complete the tax returns accurately (Mohd Rizal and Ahmad Fariq 2011). One of the factors leading to voluntary compliance in is simplification of tax payments (Saad 2014).In the same vein, authors suggested that voluntary tax compliance will increase, if the national revenue is spent wisely by the government on primary facilities like education, defense, health, and public transportation (Mohd Rizal and Ahmad Fariq 2011). Literature, though very limited on topics about individual tax compliance, draws attention towards the level of tax morale which undermines the high level of tax evasion and creates severe horizontal inequities between compliant taxpayers and tax evaders (Kemal 2003).

Broader empirical research regarding individual tax compliance behavior is scant in the Pakistani context. Past studies have investigated more about corporate income tax or constructs like political instability, corruption, underground economy, tax evasion, tax knowledge, tax education, age and sex. Such as, Awan and Hannan (2014) discuss anti-tax culture and amnesties in detail, Amin et al. (2014) wrote about corruption and political instability likewise, Inam and Khan (2016) review excise duties and sales taxes. It will be pragmatic to study the tax compliance behavior of the individual payers. Therefore,

the aim of this study is to investigate those variables which are least explored on the individual taxpayer in the context of Pakistan. Despite of the studies of various researchers (Palil and Mustapha 2011; Saad 2014; Kirchgassner 2011; Tehulu and Dinbem 2014; Gambo et al. 2014; Alabede et al. 2011) who elucidated the significance of these variables, studies on these variables are lacking in this contextual setting. Therefore, the major research questions of this study are first, how an individual's attribute towards tax morale, tax compliance simplicity, and perception about Government Spending, influence the voluntary tax compliance behavior? Secondly; considering the perception of fairness as a convincing corollary of tax morale, tax compliance simplicity and perception about Government Spending, this study aims to inquire whether the perception of fairness mediates the aforementioned triad and voluntary tax compliance behavior. Lastly, Owing to the dispute of research work about the influence of tax rate on voluntary tax compliance behavior, our study proposes to check if tax rate moderates the relation?

The current study used multiple theoretical optics of economic, social, institutional and behavioral factors. It attempts to explain the variance in voluntary tax compliance behavior by means of four exogenous variables, one mediating variable, and one interaction term. The main reason for the choice of below-mentioned variables is that recent studies in Pakistani context investigated mostly about corporate income tax or constructs like political instability, corruption (Amin et al. 2014), underground economy (Kemal 2007), tax education, age, and sex (Cyan et al. 2017). It was synthesized that multiple theoretical optics in a single study can explain voluntary tax compliance behavior more holistically than the above mentioned singular studies. The endogenous variable in this study is voluntary tax compliance behavior. Perception about Government. Spending (Exogenous variable) is understood through the theory of Social Exchange (Homans 1958).Tax Compliance Simplicity (Exogenous variable) is acknowledged through the Equity theory of Adams (1960). Tax Morale (Exogenous variable) is by applying the Altruistic Approach (Chung 1976).Tax Rate (Exogenous variable) is linked to the Optimal Tax Theory. Perception of Fairness (Mediator) is aligned with the Fairness Heuristic Theory. These constructs are most relevant, least investigated and are grounded in the multiple theoretical optics based on our literature review in the milieu of Pakistan.

## Literature review and hypotheses

Like many developing countries, the Revenue Authorities in Pakistan, are still finding it difficult to achieve tax compliance. In the above section, major issues in Pakistani tax environment are presented. It can be easily deduced that the tax system in Pakistan is not efficient. Concessions and exemptions under various schemes leads to revenue loss (Pakistan Economic Survey 2016-17). The taxpayers do not perceive the tax calculation as fair because of the inequities between taxpayers and tax evaders and unplanned expenditure on different sectors (Kemal 2003; Awan and Hannan 2014). Furthermore, Bases of the most imperative taxes to be specific, general sales tax, corporate and individual income tax remain narrow. This depicts the complexity of the tax compliance in Pakistan. As mentioned above that there are limited number of registered taxpayers and major portion of tax revenues is comprise of indirect taxes (Federal Budget 2017-18). We as Pakistani citizens also observed that people working in the non-formal sector

consider that only civil servants should pay taxes. Also is the case with neighboring country India, which is among the low tax collection countries and it was seen that the main cause of the lower tax burden is low tax compliance, along with a complex tax structure (Mukhopadhyay 2016). The following section details the constructs which are most relevant and least investigated to sculpt a theoretical framework for this study. The endogenous variable in this study is voluntary tax compliance behavior, which is the variable of primary interest. This section attempts to explain the variance in voluntary tax compliance behavior by means of four exogenous variables, one mediating variable and one interaction term. Our literature review will track the sequence of describing the constructs, relate it with the appropriate theories and develop the hypothesis for further testing.

### Perception about government spending

Luttmer and Singhal (2014) stated that different types of government services which are financed by tax revenues affect an individual's willingness to comply. Voluntary tax compliance will increase if the government spends the national revenue wisely (Palil and Mustapha 2011). Similarly, according to Feld and Frey (2007), taxpayers pay their taxes honestly, if they get valuable public services in exchange. These behaviors could be explained by acknowledging the Social Exchange Theory and Expected Utility Theories. Expected Utility Theory (EUT) states that the decision maker compares the expected utility values and then choose between risky or uncertain prospects and Social Exchange Theory (Homans 1958) explains above observations as the exchange of activity, tangible or intangible, between two parties. Consequently, the tax payers will show compliance when they perceive that the tax amount is being exchanged with valuable public goods. Taxpayer's perception of Government Spending is meaningful in determining their fair compliance behavior (Palil 2010; Kirchgassner 2011). Taxpayer's sense of fairness will be encouraged by sufficient utilization of tax revenue on public goods (Dragojlovic 2008). Based on this sketch, the hypotheses are written as:

**H1**   Perception of Government Spendings is positively associated with the perception of fairness.

**H1A**   Perception of Government Spendings is positively associated with voluntary tax compliance behavior.

### Tax compliance simplicity

Slemrod and Bakija (2008) suggest that the ideal tax system should be fair, simple, enforceable and promote economic prosperity. Chattopadhyay and Das Gupta's (2002) study suggests that the simplification of tax legislation might have a significant impact in encouraging tax compliance behavior amongst taxpayers. Loo (2006) stated that the self-assessment system resultantly increases voluntary compliance and simplify the tax collection system. Taxpayers belong to various backgrounds, with differences in their culture, income, educational background and tax knowledge. Therefore, Richardson (2006) and Palil and1 Mustapha (2011) stated that simplicity in tax law is significantly

related to tax compliance. By simplifying the tax return, taxpayers will consider filing the tax return by themselves rather than deploying it to professionals (Baer and Silvani 1997). Chau and Leung (2009) observed that the complexity of the tax system has for long being determined as one of the main factors of tax evasion. The simplicity of taxes affects your opinion about proposed fair tax policies (Murphy 2009). Evidence shows that one of the factors leading to voluntary compliance is the simplification of tax payments (Saad 2014), which implies that a complex tax system can be a deterrent to voluntary tax compliance. Having tax laws that are consistent and stable in enactment and performance will make the tax system less complex and can encourage tax compliance (Ahangar et al. 2011). Equity Theory (1960) explains this phenomenon as when the tax system is complex, taxpayers raise a question about its fairness. More complex tax laws lead to the perception of inequity in the system. Based on these theoretical insight this study hypothesized that tax simplicity can have a positive effect on tax compliance.

**H2**  Tax Compliance Simplicity is positively associated with the Perception of Fairness.

**H2A**  Tax Compliance Simplicity is positively associated with voluntary tax compliance behavior.

### Tax morale

Numerous studies indicated significant positive effect of tax morale on tax compliance behavior (Halla 2012; Molero and Pujol 2012). Alm and Torgler (2011) argued that individuals do not always behave selfish, rational, and self-interested, rather, they are motivated by other "ethical" factors, such as morality, altruism, and fairness. Intrinsic motivation to pay tax by taxpayers is considered as tax morale (Alm and Torgler 2006). According to Altruistic Approach theory (Chung 1976), taxpayers are more concerned about the general welfare than their own. Given that ethics differ across individuals, the authors suggest that compliance studies should incorporate this dimension in the decision-making process. Therefore, Tax morale is an attitude of a group or the whole population of taxpayers regarding the question of accomplishment or neglect of their tax duties (Kirchler 2007). Lisi (2015) indorsed the any policy instrument for reducing the tax evasion depends on taxpayers' morality. Kirchgassner (2011) believes that low tax morale leads to low tax compliance. Vis-à-vis this background, the hypotheses are then made as:

**H3**  Tax morale is positively associated with the perception of fairness.

**H3A**  Tax morale is positively associated with voluntary tax compliance behavior.

### Perception of fairness

Tehulu and Dinbem (2014) found that the perception of a fair tax system significantly affects tax compliance behavior. Mukhlis et al. (2014) argued that tax compliance is the result of the overall fairness in the society. Palil and Mustapha (2011) stated that the taxpayer compliance behavior is significantly influenced by the fairness of tax structure.

Kirchler et al. (2008) defines procedural fairness, which focuses on the perception whether fair procedures and services are executed by the authority; and retributive fairness, which refers to the perception of taxpayers on suitable punishment on tax crime. Fairness Heuristic Theory comes up with a series of justice judgments. During the "judgmental phase," individuals observe fairness information. In the "use phase," they use their fairness judgment as input in their decision. Taxpayers can perceive the tax system as unfair if they believe that they are paying more than they receive from the government and or in relation to what other taxpayers are paying (Chau and Leung 2009). Society's perception of whether a tax system is fair and just is very important. If such a perception exists, voluntary compliance also increases (Gilligan and Richardson 2005). Some researchers verified that fairness has a significant correlation with tax compliance (Gilligan and Richardson 2005; Natrah 2012). Consequently, the following hypothesis is anticipated:

**H4**    Perception of fairness is positively associated with voluntary tax compliance behavior.

Perception of fairness is an endogenous variable in the model. Other latent constructs such as tax compliance simplicity, tax morale, perception about Government Spendings are hypothesized to influence the perception of fairness, which in turn affects voluntary tax compliance behavior. The potential mediating effect of perception of fairness on other constructs are of interest and hence the following hypotheses are developed:

**H4A**    Perception of Fairness mediates the relationship between Perception of Government Spendings and voluntary tax compliance behavior.

**H4B**    Perception of Fairness mediates the relationship between Tax Compliance Simplicity and voluntary tax compliance behavior.

**H4C**    Perception of Fairness mediates the relationship between Tax Morale and voluntary tax compliance behavior.

### Tax rate

Kirchler (2007) viewed that the exact impact of the tax rate in determining tax compliance behavior is still unclear and questionable. Kirchler (2007) noted that Tax compliance behavior is not a spontaneous result of decreasing tax rates. Torgler (2002) concluded that people of Latin America try to evade tax due to higher rates of taxes. Park and Hyun (2003) in their empirical study found that the increase in tax rate fortifies the motivation to report less income to compensate for the reduced income. Negative or positive relationship predicted by tax rate on tax compliance (Modugu et al. 2012). Tax rates are negatively associated with tax compliance (Alm et al. 1995). Pommerehne and Weck-Hannemann (1996) expressed that the level of compliance decreases as the tax rate increases. An opposite relationship is found between voluntary tax compliance behavior and tax rates (Gambo et al. 2014). Hai and See (2011) found a direct

proportionate relationship between tax rates and tax compliance. Therefore, following hypotheses are proposed:

**H5**    Tax Rate is positively associated with voluntary tax compliance behavior.

**H6**    Interaction term $(TR \times PF)$ is negatively associated with voluntary tax compliance behavior.

### Voluntary tax compliance behavior

Palil and Mustapha ([2011](#)) defined voluntary tax compliance behavior "a combination of the readiness of taxpayers to comply with the tax laws, declare the correct income, claim the correct deductions, relief and rebates and pay all taxes on time". Psychological Theory of Attribution (1958) states that "Behavior is caused by internal or external influences. Internally influenced behavior is believed to be under the personal control of the individual, while the externally influenced behavior implies that individuals will have to behave because of the demands of the situation or the environment. The readiness of the taxpayer to abide by directives and regulations of the tax authority makes voluntary compliance possible (Kirchler [2007](#)). Voluntary compliance is the readiness to report tax obligations by a taxpayer without deceiving (McBarnett [2003](#)).

## Methodology and results

### Methodology

This study used a positivist's perspective which is a philosophical approach to test the proposed relations (Saunders et al. [2009](#)). Consequently, quantitative design was chosen where, the researcher had a lesser chance to manipulate factors that can influence respondents (Saunders et al. [2009](#)). The design was co-relational and the data was collected through a paper-based survey questionnaire. The objective of survey-based research was to evaluate and validate the theoretical model of the study. Fricker and Schonlau ([2002](#)) suggested that the survey is suitable for unique or large populations, saves time and cost and easy to administer. Although, they also mentioned that the survey lacks in detail of information and sometimes lack control on time and respondents truthfulness is a big challenge.

Cross-sectional data were collected from the individual tax payers of Southern Punjab, Pakistan. The self-reported questionnaire was personally distributed to 457 tax payers using convenience sampling. This method of sampling is recommended when the sample meets the objectives of research and is willing to participate in the study and the sample is easily accessible on time (Dörnyei [2007](#)). Convenience sampling technique is appropriate to both qualitative and quantitative design of studies (Explorable.com). This methods underscores generalizability of the findings on the population (Etikan, et al. [2016](#)).

The researcher rephrased the selected items for adequate content meanings. The survey consisted of 36 items on various tax-related issues. The participants were asked to indicate their degree of agreement in a five-point "strongly disagree-strongly agree" Likert Scale questions. These items were screened by the authors, who used the items most

relevant to the research question to formulate scales measuring tax morale, tax compliance simplicity, perception about Government, spending, tax rate, perception of fairness and voluntary tax compliance behavior, Tax Morale, Tax Compliance Simplicity and Perception about Government Spendings were assessed through World Values Survey (WVS) and Economic Values Survey (EVS) (1999–2001), Oberholzer (2008) and Dragojlovic (2008) respectively. Tax Rate construct was assessed through Kirchgassner (2011) instrument. Perception of Fairness was assessed through Murphy (2009) and Dragojlovic (2008) and Voluntary Tax Compliance Behavior was assessed through Wahl et al. (2010).

The population for this study was individual taxpayers in Southern Punjab, Pakistan with a sample size of 435 taxpayers across the region. Initially, data consisted of 457 respondents from the category of individual taxpayers. After the elimination of 22 missing data responses, finally, a sample size of 435 responses was considered. It has been reported that the average sample size in PLS-SEM studies published in the field of strategic management before the year 2000 is $N = 95$ and after that, it is reported to be $N = 207$ (Hair et al. 2012). In order to make the study representative, the sample is taken from different backgrounds, educational levels, sectors, age, and working experiences. Individuals representing different professions (services and sole proprietors), are selected as the respondents for the research. As such, the sole proprietors are retailer, wholesaler, government contractor, importer of different items, exporter of different items, distributor, manufacturer of different items, service provider, printing press, property dealer, commission agents, book centre, travel agent, goldsmith, paint store, mechanical works, general order supplier, pharmacy, animal feed, shoe store, cloth house, money changers, hair salon, food items, restaurants, textile, agriculture, pesticide etc.. Table 1 shows the demographic evaluation of sample.

The preliminary analysis of data was conducted with Statistical Package for Social Sciences (SPSS), version 20.0. The analysis included the screening of data, descriptive statistics, and normality test. Structural equation modeling (SEM) was employed with SmartPLS 3.0. to test the measurement and structural model. SEM allows to test mediation and moderation (interaction) of the relationships such as among voluntary tax compliance behavior and tax morale, tax compliance simplicity, perception about

**Table 1** Sample profile

| Variables | Classification | Number | Percentage (%) |
| --- | --- | --- | --- |
| Respondent's age | 26–30 years old | 45 | 10.34 |
| | 31–35 years old | 250 | 57.47 |
| | 36–40 years old | 80 | 18.39 |
| | 41–45 years old | 40 | 09.19 |
| | Above 45 years old | 20 | 04.59 |
| Respondent's qualification | High school | 100 | 22.98 |
| | College level | 149 | 34.25 |
| | University level | 186 | 42.75 |
| Experience in years | 1–10 | 200 | 45.97 |
| | 11–20 | 180 | 41.37 |
| | 21–25 | 40 | 9.19 |
| | Above 25 | 15 | 3.44 |

Government Spending, perception of fairness and tax rate including the reliability of the measurement scales. The following sections detailed the descriptive analysis as well as the evaluation of both measurement and structure model.

## Data analysis and results

Based on the descriptive study result, it can be observed that educated and younger people were engaged in businesses as self-employed. Similarly, most of the businesses are managed by owners instead of professional managers. Statistic values (Kurtosis and Skewness) are within the suggested range ($-2.5$ to $+2.5$) and normally distributed for advance analysis.

We mean-centered the independent variables and moderator variables to minimize the possibility of multicollinearity. Multicollinearity appears when a correlation exists between independent variables. In the presence of a high degree of multicollinearity, it is problematic to attain reliable results for each estimate (Hair et al. 2009). Multicollinearity estimated through Variance Inflation Factor (VIF) in SPSS 23.0 by ($1/(1-R2)$) with $p < 0.05$. Thus, the results of multicollinearity among independent variables through VIF were less than the threshold value 5.

The relationship between multiple blocks of variables was analyzed through PLS-SEM approach. A combination of two sub-models (measurement model and structural model) composed a new path model in PLS. As such, this structure provides a strong relationship between higher order constructs and its sub-dimensions because of sharing a large number of measurement items in the reflective type, therefore, making PLS path model is more parsimonious (Hair et al. 2014).

### *Evaluation of measurement model*

The following four criteria were used to examine the measurement model for reflective blocks.

1. Internal Consistency (composite reliability)
2. Indicator Reliability
3. Convergent Validity
4. Discriminant Validity

The construct's reliability (internal consistency) was assessed by traditional measure, Cronbach 's alpha. Value of all constructs declared greater than acceptable level of Cronbach 's alpha, i.e. $\geq 0.6$.

The composite reliability results also indicated that the measures were robust in terms of internal consistency reliability. The indexes of composite reliability ($\geq 0.6$) showed satisfactory level.

The convergent validity investigated by perceiving AVE values which were greater than the minimum value of 0.4. This pointed out that all constructs operationalized in the research had explained more than 40% of the variance in their observed measures (Hair et al. 2014).

Discriminant validity was evaluated by using three criteria, which were Cross Loadings, Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (Hair et al. 2014).

Factor loadings of the items on their respective construct were generated by SmartPLS 3.0. Each factor loading (Table 2) should be greater than 0.6 (Hair et al. 2014).

To analyze cross loadings criterion, loadings and cross loadings matrices were obtained by using SmartPLS. All loadings should be greater than the cross loadings (Götz et al. 2010). Table 3 shows the results as follows:

Fornell-Larcker test (square root of AVE values) were greater than corresponding latent variable correlations (LVC) and indicating satisfactory discriminant validity (Fornell and Larcker 1981).

Discriminant validity was checked through Heterotrait-Monotrait Ratio which was less than threshold value 0.90.

**Table 2** Factor loadings

| Scale items | PF | PGS | TCS | TM | TR | VTCB |
|---|---|---|---|---|---|---|
| PF1 | 0.779 | | | | | |
| PF2 | 0.768 | | | | | |
| PF3 | 0.762 | | | | | |
| PF4 | 0.663 | | | | | |
| PF5 | 0.610 | | | | | |
| PF6 | 0.652 | | | | | |
| PF7 | 0.755 | | | | | |
| PF8 | 0.764 | | | | | |
| PF9 | 0.754 | | | | | |
| PGS1 | | 0.736 | | | | |
| PGS2 | | 0.762 | | | | |
| PGS3 | | 0.690 | | | | |
| PGS4 | | 0.707 | | | | |
| TCS1 | | | 0.670 | | | |
| TCS2 | | | 0.650 | | | |
| TCS3 | | | 0.725 | | | |
| TCS4 | | | 0.737 | | | |
| TCS5 | | | 0.709 | | | |
| TCS6 | | | 0.652 | | | |
| TCS7 | | | 0.696 | | | |
| TM1 | | | | 0.667 | | |
| TM2 | | | | 0.699 | | |
| TM3 | | | | 0.725 | | |
| TM4 | | | | 0.740 | | |
| TM5 | | | | 0.727 | | |
| TM6 | | | | 0.612 | | |
| TR1 | | | | | 0.764 | |
| TR2 | | | | | 0.757 | |
| TR3 | | | | | 0.742 | |
| VTCB1 | | | | | | 0.731 |
| VTCB2 | | | | | | 0.757 |
| VTCB3 | | | | | | 0.683 |
| VTCB4 | | | | | | 0.606 |
| VTCB5 | | | | | | 0.626 |
| VTCB6 | | | | | | 0.713 |
| VTCB7 | | | | | | 0.755 |

**Table 3** Cross loadings

| Scale items | PF | PGS | TCS | TM | TR | VTCB |
|---|---|---|---|---|---|---|
| PF1 | 0.779 | 0.527 | 0.470 | 0.481 | 0.331 | 0.479 |
| PF2 | 0.768 | 0.469 | 0.428 | 0.374 | 0.464 | 0.418 |
| PF3 | 0.762 | 0.470 | 0.522 | 0.475 | 0.496 | 0.443 |
| PF4 | 0.663 | 0.554 | 0.501 | 0.451 | 0.318 | 0.400 |
| PF5 | 0.610 | 0.543 | 0.590 | 0.537 | 0.378 | 0.432 |
| PF6 | 0.652 | 0.435 | 0.459 | 0.506 | 0.372 | 0.584 |
| PF7 | 0.755 | 0.407 | 0.468 | 0.505 | 0.382 | 0.429 |
| PF8 | 0.764 | 0.627 | 0.395 | 0.386 | 0.388 | 0.431 |
| PF9 | 0.754 | 0.443 | 0.397 | 0.393 | 0.448 | 0.487 |
| PGS1 | 0.397 | 0.736 | 0.459 | 0.430 | 0.593 | 0.375 |
| PGS2 | 0.447 | 0.762 | 0.486 | 0.458 | 0.471 | 0.312 |
| PGS3 | 0.394 | 0.690 | 0.429 | 0.391 | 0.335 | 0.228 |
| PGS4 | 0.664 | 0.707 | 0.433 | 0.435 | 0.349 | 0.425 |
| TCS1 | 0.437 | 0.418 | 0.670 | 0.443 | 0.319 | 0.484 |
| TCS2 | 0.499 | 0.424 | 0.650 | 0.542 | 0.338 | 0.459 |
| TCS3 | 0.324 | 0.340 | 0.725 | 0.365 | 0.340 | 0.461 |
| TCS4 | 0.461 | 0.438 | 0.737 | 0.456 | 0.380 | 0.463 |
| TCS5 | 0.473 | 0.480 | 0.709 | 0.511 | 0.366 | 0.445 |
| TCS6 | 0.510 | 0.473 | 0.652 | 0.559 | 0.358 | 0.500 |
| TCS7 | 0.431 | 0.434 | 0.696 | 0.413 | 0.358 | 0.407 |
| TM1 | 0.366 | 0.418 | 0.434 | 0.667 | 0.300 | 0.328 |
| TM2 | 0.364 | 0.374 | 0.503 | 0.699 | 0.341 | 0.378 |
| TM3 | 0.471 | 0.472 | 0.484 | 0.725 | 0.335 | 0.379 |
| TM4 | 0.441 | 0.438 | 0.435 | 0.740 | 0.352 | 0.451 |
| TM5 | 0.445 | 0.375 | 0.476 | 0.727 | 0.331 | 0.478 |
| TM6 | 0.530 | 0.419 | 0.529 | 0.612 | 0.360 | 0.518 |
| TR1 | 0.365 | 0.420 | 0.375 | 0.293 | 0.764 | 0.385 |
| TR2 | 0.357 | 0.598 | 0.356 | 0.339 | 0.757 | 0.395 |
| TR3 | 0.495 | 0.351 | 0.410 | 0.441 | 0.742 | 0.489 |
| VTCB1 | 0.363 | 0.317 | 0.511 | 0.435 | 0.347 | 0.731 |
| VTCB2 | 0.444 | 0.369 | 0.531 | 0.496 | 0.361 | 0.757 |
| VTCB3 | 0.316 | 0.280 | 0.451 | 0.343 | 0.288 | 0.683 |
| VTCB4 | 0.473 | 0.344 | 0.378 | 0.370 | 0.450 | 0.606 |
| VTCB5 | 0.612 | 0.384 | 0.390 | 0.440 | 0.455 | 0.626 |
| VTCB6 | 0.320 | 0.247 | 0.424 | 0.352 | 0.366 | 0.713 |
| VTCB7 | 0.395 | 0.297 | 0.438 | 0.425 | 0.381 | 0.755 |

### *Evaluation of the structural model*

The structural model estimates the relationship between constructs through the following criteria as stated by Hair et al. (2014).

1. Path Coefficients (β) for strength and direction of relationships between latent variables
2. Coefficient of determination ($R^2$)
3. Effect Size ($f^2$) of predictive accuracy

**Table 4** Relative effect size

|  | Relative effect size ($f^2$) | Assessment |
|---|---|---|
| Perception of fairness |  |  |
| Perception about Government Spendings | 0.213 | Medium |
| Tax compliance Simplicity | 0.067 | Small |
| Tax morale | 0.059 | Small |
| Voluntary tax compliance behavior |  |  |
| Perception of fairness | 0.069 | Small |
| Tax rate | 0.086 | Small |
| Perception about Government Spendings | 0.038 | Small |
| Tax compliance simplicity | 0.114 | Small |
| Tax morale | 0.038 | Small |
| Moderating effect: |  |  |
| TR × PF | 0.121 | Small |

**Table 5** Direct Effects

| Path | Path coefficient | Standard deviation (STDEV) | t-value | p-value | Decision |
|---|---|---|---|---|---|
| PGS → VTCB | 0.221 | 0.059 | 3.746 | 0.000 | Accepted |
| TCS → VTCB | 0.463 | 0.056 | 8.309 | 0.000 | Accepted |
| TM → VTCB | 0.288 | 0.054 | 5.287 | 0.000 | Accepted |

All β values were greater than 0.20 accompanied with $R^2$ values which indicates that the resultant equation explains more than 50% variance. All factual t-values were greater than 1.96 at (p < 0.05) which indicates the confirmation of all hypothesized relationships for the study (See Table 8).

Hair et al. (2014) states findings that for the assessment of $f^2$ effect size, the values of 0.02, 0.15; and 0.35 are considered small (S), medium (M) and large (L) sizes respectively. The effect size of Perception about Government Spendings on Perception of Fairness was medium and effect size of all other exogenous constructs on endogenous constructs were small (See Table 4).

### *Mediation effects*

The study also showed that tax morale, tax compliance simplicity, and perception about Government Spendings (IVs) were associated positively to the mediator (perception of fairness) variable. Mediator variable was positively related to voluntary tax compliance behavior (DV). Therefore, it was decided to test the mediation effect of the mediator variable.

To start with, the path model was estimated via bootstrapping, without the interaction of a mediator (See Table 5;  See Fig. 1). The results reveal that direct paths are statistically significant.

To ascertain the significance of these indirect paths, we computed the value of standard deviation in MS Excel, in order to obtain the t-value of the indirect paths (Table 6).
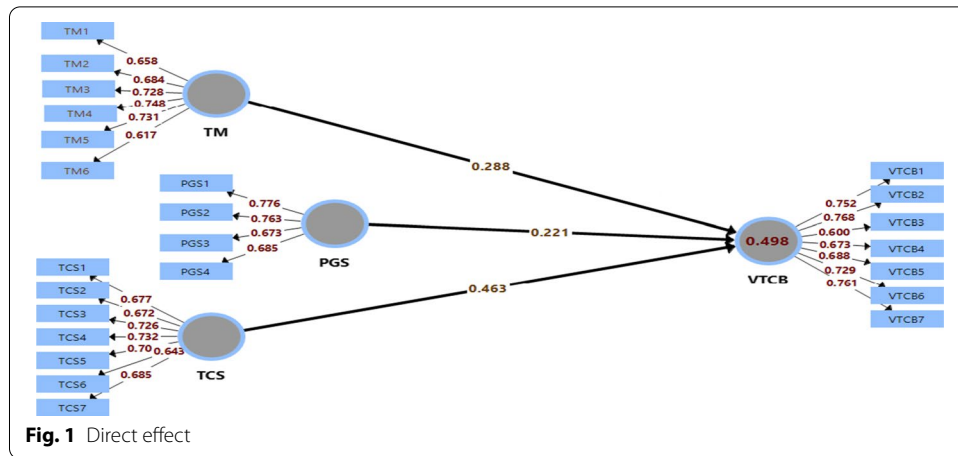
**Fig. 1** Direct effect

**Table 6** Mediation Analysis in PLS-SEM

| Effects | Path | Path coefficient | Indirect effect | Standard deviation | Total effect | VAF | t-value | p-value | Decision |
|---|---|---|---|---|---|---|---|---|---|
| Direct without mediator | TM → VTCB | 0.288 | Not Applicable | | | | 5.287 | 0.000 | Accepted |
| Indirect with mediator | TM → VTCB | 0.219 | Not Applicable | | 0.354894 | 38.29% | 5.9084 | 0.000 | Accepted |
| | TM → PF | 0.426 | 0.135894 | 0.023 | | | | | |
| | PF → VTCB | 0.319 | | | | | | | |
| Direct without mediator | TCS → VTCB | 0.463 | Not applicable | | | | 8.309 | 0.000 | Accepted |
| Indirect with mediator | TCS → VTCB | 0.372 | Not applicable | | 0.514912 | 27.75% | 4.7637 | 0.000 | Accepted |
| | TCS → PF | 0.448 | 0.142912 | 0.030 | | | | | |
| | PF → VTCB | 0.319 | | | | | | | |
| Direct without mediator | PGS → VTCB | 0.221 | Not applicable | | | | | 0.000 | Accepted |
| Indirect with Mediator | PGS → VTCB | 0.100 | Not applicable | | 0.2276 | 56.06% | 3.8667 | 0.000 | Accepted |
| | PGS → PF | 0.400 | 0.1276 | 0.033 | | | | | |
| | PF → VTCB | 0.319 | | | | | | | |

The t value of the indirect path (TM → PF → VTCB) is 0.135894/0.023 = 5.9084, with a p value of 0.000, (TCS → PF → VTCB) is = 0.142912/0.030 = 4.7637, with a p value of 0.000 and (PGS → PF → VTCB) is 0.1276/0.033 = 3.8667, with a p value of 0.000. Hence the t value of each indirect path was greater than 1.96 and significant.

Finally, it was important to find out the strength of mediation. The strength of mediation was computed via variance accounted for (VAF), as suggested by (Hair et al. 2014). Table 6 reveals that 38.29%, 27.75%, and 56.06%, of the effect of tax morale, tax compliance simplicity and perception about Government. spending on voluntary tax compliance behavior respectively. Since the value of VAF was between 20 and 80%, we assumed the perception of fairness partially mediates the relationships.

**Table 7** Mediating effects

| Path | Path coefficient | Standard deviation (STDEV) | t-value | p-value | Decision |
|---|---|---|---|---|---|
| PF → VTCB | 0.319 | 0.073 | 4.364 | 0.000 | Accepted |
| PGS → PF | 0.400 | 0.048 | 8.342 | 0.000 | Accepted |
| PGS → VTCB | 0.100 | 0.056 | 1.785 | 0.074 | Accepted[a] |
| TCS → PF | 0.448 | 0.064 | 3.872 | 0.000 | Accepted |
| TCS → VTCB | 0.372 | 0.068 | 5.477 | 0.000 | Accepted |
| TM → PF | 0.426 | 0.055 | 4.110 | 0.000 | Accepted |
| TM → VTCB | 0.219 | 0.053 | 4.122 | 0.000 | Accepted |

[a] At 10% significance level



**Fig. 2** Mediating effect
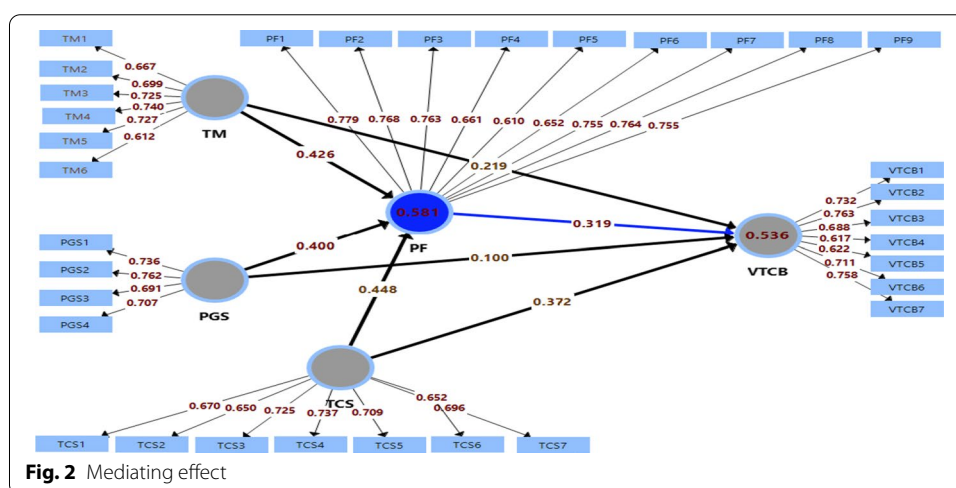
Therefore, the inclusion of the perception of fairness as a mediator was meaningful. We required the significance of indirect paths in order to verify that perception of fairness mediates the relationship between tax morale and voluntary tax compliance behavior, between perception about Government. spending and voluntary tax compliance behavior and between tax compliance simplicity and voluntary tax compliance behavior (Table 7; Fig. 2).

### Moderating effect of tax rate

The interaction effect (TR × PF) in Table 8 is negative in sign. Negative interaction effect means that when tax rate becomes higher (i.e. tax rate is increased by one standard deviation point), this would imply that the relationship between perception of fairness and voluntary tax compliance behavior would be decreased by the size of the interaction term. Figure 3 shows the moderating effects of the tax rate in the path model.

Figure 4 shows positive relationship of Perception of Fairness and Tax Rate with the Voluntary Tax Compliance Behavior but the interaction term (TR × PF) is negative. So, the result showed that, tax rate dampers the positive relationship between PF and VTCB. In other words, tax rate negatively moderated the relationship of PF and VTCB in present study.

**Table 8** Results of hypotheses

| Hypotheses | | Statistical analysis without moderator | | | | Statistical analysis with moderator | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Path coefficient (β) | Standard error (Se) | t-value | p-value | Path coefficient (β) | Standard error (Se) | t-value | p-value | |
| H1 | PGS → PF | 0.400 | 0.047 | 8.441 | 0.000 | 0.400 | 0.048 | 8.333 | 0.000 | Supported |
| H2 | TCS → PF | 0.248 | 0.063 | 3.912 | 0.000 | 0.248 | 0.063 | 3.936 | 0.000 | Supported |
| H3 | TM → PF | 0.226 | 0.054 | 4.166 | 0.000 | 0.226 | 0.053 | 4.264 | 0.000 | Supported |
| H4 | PF → VTCB | 0.277 | 0.069 | 4.029 | 0.000 | 0.267 | 0.069 | 3.869 | 0.000 | Supported |
| H1A | PGS → VTCB | 0.295 | 0.054 | 5.462 | 0.000 | 0.227 | 0.055 | 4.127 | 0.000 | Supported |
| H2A | TCS → VTCB | 0.337 | 0.064 | 5.260 | 0.000 | 0.402 | 0.066 | 6.090 | 0.000 | Supported |
| H3A | TM → VTCB | 0.295 | 0.051 | 5.784 | 0.000 | 0.248 | 0.051 | 4.862 | 0.000 | Supported |
| H5 | TR → VTCB | 0.267 | 0.041 | 6.551 | 0.000 | 0.251 | 0.042 | 5.976 | 0.000 | Supported |
| H6 | Moderating effect: TR × PF → VTCB | | | | | -0.243 | 0.025 | -9.72 | 0.000 | Supported |

Significant at $p < 0.05$

**Fig. 3** Moderating effect



**Fig. 4** R2 adjusted with moderating effect
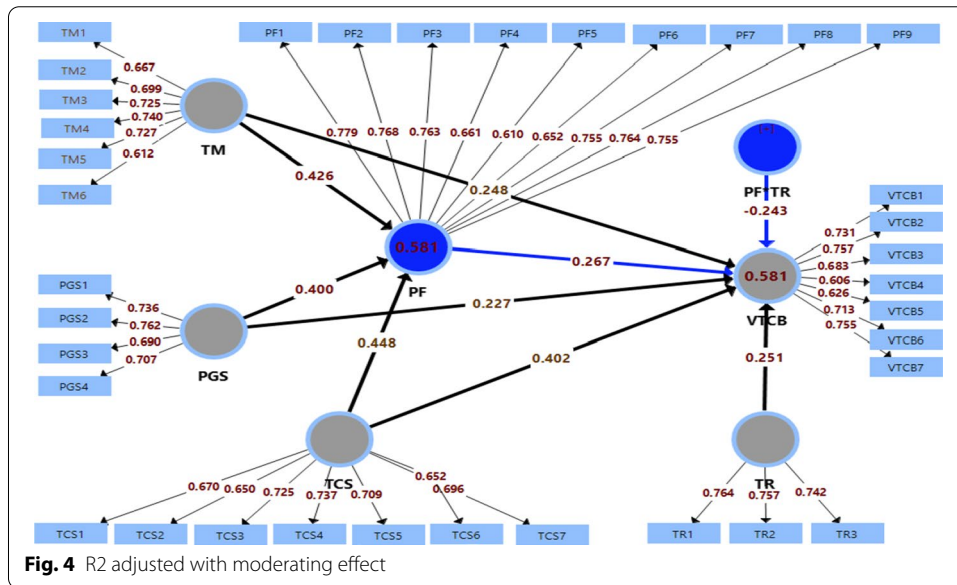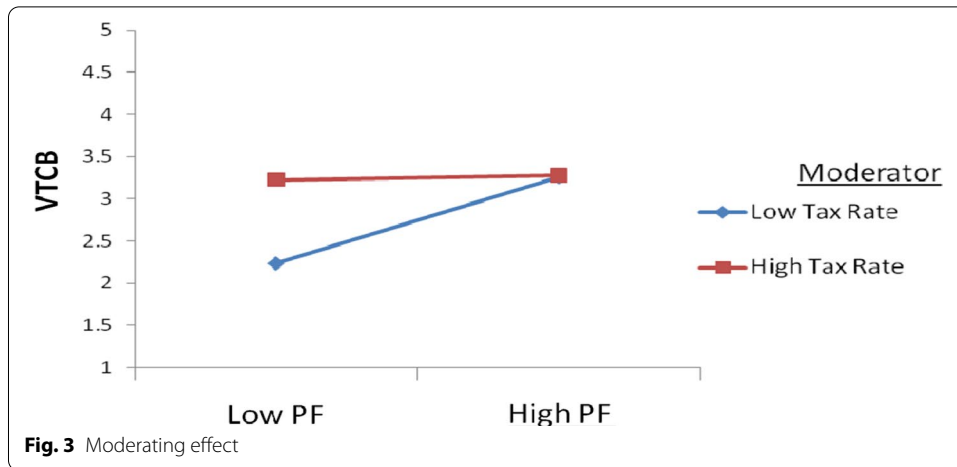
The present model is designed as:

$$PF = a + \beta1 \times (PGS) + \beta2 \times (TCS) + \beta3 \times (TM) + e$$

$$PF = a + 0.400 \times (PGS) + 0.448 \times (TCS) + 0.426 \times (TM) + e$$

$$
\begin{aligned}
VTCB = {}& c + \beta4 \times (PGS) + \beta5 \times (TCS) + \beta6 \times (TM) \\
& + \beta7 \times (PF) + \beta8 \times (TR) - \beta9 \times (PF \times TR) + e
\end{aligned}
$$

$$
\begin{aligned}
VTCB = {}& c + 0.227 \times (PGS) + 0.402 \times (TCS) + 0.248 \\
& \times (TM) + 0.267 \times (PF) \\
& + 0.251 \times (TR) - 0.243 \times (PF \times TR) + e
\end{aligned}
$$

## Discussion

First question was designed to know, "How the individual's attribute towards tax morale, tax compliance simplicity and perception about Govt. spending, influencing the voluntary tax compliance behavior?" The objective was to evaluate the role of these variables in our context as previous researches indicated that these three constructs significantly influenced the tax compliance behavior. Furthermore, the available evidence so far on the effectiveness of behavioral nudges utilized by tax administrators is mixed (Alm and Torgler 2011). Although, Alm and Torgler (2006) found that tax morale in the USA has occupied more than 20% of the total portion that can explain tax compliance behavior. Loo (2006) claimed that, in general, the reasons for implementing the self-assessment system (SAS) in Malaysia are to simplify the tax collection system and increase voluntary compliance. Voluntary tax compliance behavior may also be affected by the types of government services that are funded by tax revenues and how these are viewed by the taxpayer in the USA (Luttmer and Singhal 2014).

The current study found that Pakistani individual taxpayer's morality is positively associated with voluntary tax compliance behavior ($\beta = 0.248$, $p < 0.05$). Our respondent's morality behests that everyone should pay the correct amount of tax so that poor get the benefits and they believed that individual must restrain to conceal the right income. Individual Respondents were not inclined to evade or cheat on taxes. Kirchgassner (2011) in his study in Switzerland stated when tax morale is low, the tax compliance would be low. Aligning current study findings with other developed countries, it can be inferred that Pakistani individuals consider tax disbursement as a moral act.

This study further concluded that Tax compliance simplicity is positively associated with voluntary tax compliance behavior ($\beta = 0.402$, $p < 0.05$). Respondents consider tax filing easy and simple as long as the services of tax professionals are available. For instance, Slemrod (1989) in the USA states that simple tax return increases compliance.

Our study also examined the effect of government spending on tax compliance and found that Perception about Government Spending is positively associated with voluntary tax compliance behavior ($\beta = 0.227$, $p < 0.05$). This finding resembles the findings of Feld and Frey (2007), who observed that if taxpayers get valuable public services in exchange, they will be more inclined to pay their taxes honestly. The respondents believed that taxes are spent to fight corruption in the country as well as on public goods for the welfare of masses. Individuals held the thoughts that benefit from taxes offset the cost of taxes.

The results provided empirical support for tax morale as a complementary mechanism to enhance voluntary tax compliance in Pakistan. The detailed examination supported that taxpayers considered that tax compliance is their commitments to pay taxes and as a repayment to the community (Cummings 2006) and individuals do not always behave as selfish, rational, and self-interested, but rather motivated by other "ethical" factors, such as morality, altruism, and fairness (Alm and Torgler 2011).

The results also provided empirical support for difficulties in tax compliance. The effect of tax compliance simplicity is found positive to anticipate the voluntary tax

compliance behavior. The detailed examination drew attention to the Chattopadhyay and Das Gupta (2002) study which suggests that the simplification of tax legislation might have a significant impact in encouraging tax compliant behavior amongst taxpayers and one of the factors leading to voluntary compliance is the simplification of tax payments (Saad 2014).

Further, the results also indicate the significance of Government Spending. The effect of perception about Government Spending is found positive to anticipate the voluntary tax compliance behavior. The detailed examination suggests that if the government wisely spends the national revenue on the basic facilities like health, education, and public transportation, it will increase the voluntary tax compliance as proposed by Palil and Mustapha (2011) in the Malaysian context.

The second research question, "whether perception of fairness mediates between the aforementioned triad and voluntary tax compliance behavior?" was considered on the basis of various recommendations of authors who thought fairness as a strong predictor of tax compliance, such as Tehulu and Dinbem (2014) in Ethiopia found that the perception of fair tax system significantly affects tax compliance behavior. Similarly, Palil and Mustapha (2011) in Malaysia stated that tax structure fairness effects tax compliance significantly. Therefore, in order to resolve the problem related to the tax system in Pakistan, fairness was considered for this study. The perception of fairness stems from the theory of equity which was proposed by John Stacey Adams in 1960. The main presumption of this theory is that if individuals identify inequities they will seek to adjust. Thus if tax is considered unfair that might be the consequence of inequity perception about government spending, perception of injustice regarding the taxes and tax complexity. Our results, therefore, predict that Perception about Government Spending ($\beta = 0.400$, $p < 0.05$) is positively associated with Perception of Fairness. This result is similar to the findings in the USA, which concluded that a sufficient usage of tax revenue on public goods will encourage the sense of fairness (Dragojlovic 2008). Our respondents trusted that the government spends on welfare, fighting corruption and other vices of the society. Correspondingly, Tax Morale ($\beta = 0.426$, $p < 0.05$) and Tax Compliance Simplicity ($\beta = 0.448$, $p < 0.05$) are also positively associated with the Perception of Fairness. As mentioned in the study conducted in Switzerland, low tax morale leads to low tax compliance (Kirchgassner 2011).

It is also observed by Murphy (2009) in Australia that simplicity of tax compliance affects the decision of an individual about proposed fair tax policies. Our respondents had faith that tax is an obligation to be paid for, so that poor may get benefits and misrepresent of tax liability is a crime. Our respondents also have the conviction that if proper professional assistance is given, then the taxes are easy to file and are not complex. Resultantly, due to the triad effect of perception about Government Spending, tax morale and tax compliance simplicity, perception of fairness ($\beta = 0.267$, $p < 0.05$) is developed in the minds of taxpayers, which in turn resulted in the tax compliance behavior. Similar to a studies in Indonesia argued that tax compliance can be built on the operation of tax fairness in society (Mukhlis et al. 2014). Similar findings were reported from Malaysia (Palil 2010).

The results also provided empirical support for fairness in tax compliance. The effect of perception of fairness is found positive to anticipate the voluntary tax compliance behavior. The detailed examination drew attention to the fairness which has a significant correlation with tax compliance as found in the studies of (Gilligan and Richardson 2005; Natrah 2012) regarding comparison New Zealand v/s Malaysia and by (Chau and Leung 2009) in China. A recent study by Faizal et al. (2017) concluded that tax payer in Malaysia showed significant compliance when they received the just and fair treatment from the tax system and had developed trust on the tax authorities.

The third research question was suggested by the work of Kirchler (2007) who viewed that exact impact of the tax rate in determining tax compliance behavior was unclear and needed further inquiry. However in our context, tax rate ($\beta = 0.251$, $p < 0.05$) was positively associated with voluntary tax compliance behavior akin to the findings of the study by Hai and See (2011). Subsequently, the interaction term (TR × PF) ($\beta = -0.243$, $p < 0.05$), was negatively associated with voluntary tax compliance behavior which is comparable to the findings of Gambo et al. (2014), who concluded that a negative relationship exists between tax rates and tax compliance. Other studies from USA by Alm and Torgler (2006), the outcome of Modugu et al. (2012) from Nigeria and the study of Pommerehne and Weck-Hannemann (1996) from Switzerland as well as the results of Alm et al. (1995) from Spain, have shown the similar relationship among the constructs.

The researcher applied optimal tax theory to understand the influence of tax rate. The central supposition of this theory is that if a taxpayer has to choose between two mutually exclusive economic projects that have the same pretax risk and returns, the one with the lower tax rate would be chosen by a rational actor. Our study found that the tax rate is a significant predictor of voluntary tax compliance behavior. Further, respondents believed that personal income tax rate is too high and more people would be inclined to pay taxes if tax rates are rationalized according to the income of the individual.

## Conclusion

From this study, we concluded that various economic (tax rate and perception about Government Spending), social (perception of fairness), institutional (tax compliance simplicity) and behavioral (tax morale) factors affect individual voluntary tax compliance behavior. Traditionally, individual tax compliance has been modeled using primarily economic factors only. No or very little research has been carried out about tax compliance in Pakistan. This study helps to analyze the determinants of tax compliance and finds a solution to further improve the voluntary compliance behavior of individuals. As the Revenue Authorities in Pakistan are still having difficulty to achieve tax compliance. The results indicate that these factors have a significant influence on the taxpayer's behavior.

In order to enhance taxpayer compliance, it can be argued that behavioral and economic factors are of the most importance. This study explains the individual tax compliance behavior through the lenses of the theory of attribution, altruistic theory, equity theory, expected utility theory, fairness heuristic theory, intrinsic motivation theory, social exchange theory, and optimal tax theory.

Compliance simplicity seems to be more important for filing behavior than other factors. Further, the marginal effects reported here suggest that tax compliance simplicity

has a larger impact on tax filing than perception about Government. spending and tax morale.

Perception of fairness is not a single-dimension factor. Instead, it is mostly affected by tax compliance simplicity and tax morale, followed by perception about Government. spending. So, the government should allocate resources to improve the triplet which consequently influences the perception of fairness. This is endorsed by the work of Luttmer and Singhal (2014) on Chinese tax payers. They identified that fairness operates through the channel of morality, reciprocity and perception about the government's actions and services.

This research shows that perception of fairness significantly mediates the between morale, simplicity and spending and compliance behavior. This means that if the taxpayers are dissatisfied, they may not commit compliance even if the morale is high. As a result, the government should not simply focus on simplicity or fair spendings; it would be more important for them to understand their customer's needs, respond to their concerns, and keep them satisfied.

### Recommendations

Information gathered from this study can assist the government, particularly the tax authorities, when formulating tax policies. On the basis of the findings of this study it can be suggested that taxpayer compliance could be improved mainly by enhancing the positive attitudes of taxpayers towards the psychological costs in the form of complexity of the tax system. Through the findings the authorities must learn that the taxpayers' education is an important factor in creating a taxpaying culture. Authorities can organize talks in colleges and universities so as to ensure that the future taxpayer's generation has the proper mindset towards taxes. In addition, balanced spending on publicly provided goods and services might serve as an antidote against non-compliance behavior. This study shows that services provided by the tax administration can foster tax compliance if they increase taxpayer's perceptions of fairness by increasing their morale, positive perception about spendings and by decreasing their perception about complexity of tax filing procedure. Tax authorities could, for instance, circulate information on compliance procedures via educational programs, media campaigns or by cooperating with opinion leaders such as the chamber of commerce. This circulated information should not only build awareness of the importance of tax compliance but inform taxpayers of their right to obtain a transparent and coherent assessment of tax liability, ways to defend themselves against corrupt officials, and how to obtain refunds owed.

### Limitations and future research

Few important limitations of this study are: firstly, the choice of the sample which was only taken from taxpayers' population, non-taxpayer's views could also be added for more insightful findings. Secondly, the scope of tax compliance simplicity and perception about Government spending' questions were limited to the basic knowledge of the respondent, more professional queries could spot the gap in the policies which affect compliance behavior. Thirdly, the respondents could misinterpret or be untruthful to the survey questions as tax non-compliance is not straightforward. Lastly, the sample size

was small as compared to previous studies and was limited to three cities of Southern Punjab. Nevertheless, caution was taken while generalizing the results of the study.

Future research should consider conducting in-depth interviews as a complement to surveys, as they would be useful in providing a deeper understanding and explanation of the relationship between the variables. The use of case studies may provide better quality responses to some issues of interest, including probing the impact of lower compliance costs on compliance decisions. Future studies might consider the use of the experimental method, where the non-compliance behavior of taxpayers is measured through a controlled experiment. Future studies may also consider other specific types of non-compliance behavior, such as failure to submit a tax return and/or failure to remit taxes by the due date. Other predictors such as cashless payments and tax rebates (Mukhopadhyay 2016) may be studies in the context of Pakistan.

### Author details
[1] Department of Commerce, Bahauddin Zakariya University, Multan, Pakistan. [2] College of Business Administartion, University of Hail, Hail, Kingdom of Saudi Arabia.

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