

Impact of Tax Knowledge and Tax System Complexity on Compliance Behavior of Salaried Taxpayers: The Mediating Role of Fairness Perception

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Abstract.

Taxation revenue contributes to the developmental finance of any state around the world. Recently International Center for Tax and Development (ICTD) estimated that taxation revenue is the 80% of total revenue in half of the countries in the world. Historically, tax collection from citizens has become critical policy issues. This research is conducted to find out the effect of tax system complexity and tax knowledge on taxation compliance among individual taxpayers, through individual's fairness perception about taxation. Population of the study comprises of salaried individuals (government employees) of Pakistan. 300 questionnaires were distributed, while 270 has been received with valid responses. Moreover, snowball sampling method is used. This empirical evidence has concluded that tax knowledge significantly improves the compliance behavior through building fairness perception about taxation. Another finding of this research is that Tax system complexity is not influencing individuals' attitude towards compliance. This study will help tax authorities and states to formulate their tax policies and tax administration accordingly, to improve taxation compliance and flourish tax culture through improved fairness perception about taxation.

Keywords: Fairness Perception, Intention to Compliance, Tax Knowledge, Tax System Complexity

JEL Codes: D63, D91, H26

1. Introduction

History demonstrates the importance of taxation revenue for countries to prosperous, as it is major contribution of developmental finance for almost all governments, whether they are democratic or autocratic (Slemrod, 2019). Recently International Center for Tax and Development (ICTD) estimated that taxation revenue is the 80% of total revenue in half of the countries in the world. (Ortiz-Ospina & Roser, 2016). For last two centuries, tax collections and tax rates has become critical policy issues (Sudiartana & Mendra, 2018; Farida & David, 2018). Tax collection in developing countries is half of that of developed countries. Developed countries have shown an bigger increase in tax to GDP Ratio in last two decades while emerging economies have shown negative trend (Ortiz-Ospina & Roser, 2016). This difference can be explained by many factors especially: simplicity and efficiency of tax collection mechanism and tax knowledge among citizens (Saad, 2014).

Traditional approach to tax reforms, enforcement model, has focused the audits, stiff fines and penalties to improve tax compliance. This notion was based on the rational economic calculus: stronger enforcement —increased perceived probability of audits and penalties— is the only way to improve tax compliance (Bruno, 2019). Over time, this enforcement model was complemented by service model that emphasized the importance of facilitation to taxpayers (Alm, 2019).

In spite of these tax reforms, question is still there whether modern tax reforms are sufficient to contribute to broader developmental gains. It is evident form literature that poor tax

revenue collection shows the limited trust of low-income world in its taxation system. Tax reformers are facing the challenge of fostering the strategies or policies that may strengthen the revenue mobilization through improving the public trust in taxation. Recent researchers suggest a paradigm shift from traditional enforcement and service paradigm towards trust-building. There is need to strengthen the morale of taxpayer by paying attention to taxpayers' empowerment and tailoring the tax reforms to local needs and context (Dom et al., 2022).

A group of researchers have suggested government and officials to develop their policies that incentivize them to make favorable decisions, instead of just conventional enforcements, command and control policies. A number of experimental studies have analyzed the heuristics and psychological elements and suggested that the incorporation of socio-psychological factors, while devising tax policies, will help to improve compliance behavior. Moreover, more than 150 governments have created and implemented the concept of nudging that can help individuals to make decisions in favor of society (Antinyan & Asatryan, 2020).

Extant literature have worked on huge number of socio-psychological factors, effecting compliance behavior among individuals. These factors include fairness perception (Bordignon, 1993), corruption perception (Litina & Palivos, 2016), social norms (Bobek et al., 2013), cultural values (Ariyanto et al., 2020), and personal values (Vehovar et al., 2018). This study will also follow the standard literature, as concepts under study are not novel. This study will help to identify that how facilitation to taxpayer improve fairness perception of taxpayer about taxation. Thus, perceived tax fairness as a mediator is the contribution of this study, as not tested in this respect in literature (Rakhmawati et al., 2020; Wang et al., 2020).

Tax compliance behavior has studied by group of authors, with the role of tax system perception as its antecedent (Farrar et al., 2019; Gilligan & Richardson, 2005; Saad, 2014). These studies come up with the finding that fairness perception of taxpayers about taxation system of their country leads to their compliance behavior. However, some other factors have also been identified as factors contributing to compliance behavior, including tax system complexity, tax knowledge of taxpayer and attitude of individuals towards compliance (Gilligan & Richardson, 2005; Saad, 2010; Saad, 2014). This research identifies the role of taxation knowledge of individuals and tax system complexity -Independent variables- towards compliance behavior. However, this study is different from literature as sequential mediation is tested. The relationship between explained and explanatory variables is mediated by the fairness perception and attitude towards compliance.

Fairness perception is very difficult to define as a concept and sometimes it is viewed as arbitrary in its interpretations. However, taxation literature proves it as a very important element while discussing tax compliance behavior (Che Azmi et al., 2016; Farrar et al., 2019; Gilligan & Richardson, 2005). Thus, while devising taxation policies to improve tax compliance, fairness perception of individuals has been an important element for policy makers (Geberegbe et al., 2015). An empirical study found that there is a significant positive association of trust in government and tax compliance, with the mediation of tax justice perception (Guzel, 2019). Another study also conclude that the public perception about justice and fairness has a strong influence on tax compliance (Inasius, 2019). Theory of planned behavior (TPB) points out that fairness perception of individual taxpayer affects his/her general attitude towards compliance, which in turn leads to intention to compliance (Ajzen, 1993). Specifically in context of this paper, attitude towards compliance shape up the intention of individuals, whether or not to comply with their tax obligation (Kirchler, 2008).

Fairness perception is formulated through contextual factors. Moreover, extant literature supports the significant influence of tax system knowledge on fairness perception. Direct relationship between tax knowledge and fairness perception is supported with the argument that taxpayers, having tax knowledge, have positive fairness perception, as compared to those who do not have enough knowledge (Che Azmi et al., 2016; Kiow et al., 2017; Newman, Mwandambira, Charity, & Ongayi, 2018). In literature, tax system complexity has also proved to be a contributing factor to the fairness perception and compliance behavior (Saad, 2014).

According to report of International Centre for Tax and development (ICTD), Pakistan's tax to GDP ratio is 9.99%, which is at minimal level among developing countries. In Pakistan, Income taxes revenue is 11% of total tax revenue and 1.1% of GDP. Recently a report published by United Nations World Institute for Development Economics Research, Pakistan is one of those countries which have lost most of their tax revenue due to tax evasion. The tax revenue loss is 4.4% percent of GDP in Pakistan, which is higher than those of developed countries e.g. 1.13% in US and 0.75% in China. Most surprisingly, 2% of total working population is registered as taxpayer. According to Pakistan Punjab government, 80% of government employees are non-filers (Omer, 2019). Thus, a study is needed to highlight the major antecedents for compliance behavior at individual level (working population), especially non-filing attitude among salaried people. In result, the recommendations can be made to handle this policy issue regarding tax collection system. On the basis of extent literature and statistical figures, this study aims: a) to investigate the impact of tax knowledge on fairness perception of salaried individuals, b) to measure the effect of tax system complexity on fairness perception of the salaried individuals, c) to investigate the impact of fairness perception of the salaried people on Intention to compliance through attitude towards compliance.

Tax revenue is the most viable source of any government's revenue against its long-term expenditure all over the world. Countries have almost same taxation system with some minimal variations (Abdul & Wang, 2018; Subramaniam, 2019). According to IMF (2014), in developed countries, tax to GDP ratio is 30% to 40%, which is greater than those of developing countries, which ranges from 10% to 20%. Thus, developing countries are facing tax evasion as major policy issue (Abdul & Wang, 2018).

Tax compliance is a behavioral issue at the individual level. Individual behaviors can be better understood by psychological approaches. One of these approaches is the theory of planned behavior (Sudiartana & Mendra, 2018). This theory highlights the effect of subjective norms, attitude towards some specific behavior and perceived behavioral control on individuals' intention to compliance. Perceived behavioral control variable has no direct effects on individual's behavior towards tax compliance while the factor of intention to comply along tax compliance behavior is aligned with the theory of Planned Behavior (Sudiartana & Mendra, 2018). A group of researchers has used this theory to explain the tax compliance behavior (Al-Zaqeba & AL-Rashdan, 2020; Palil et al., 2020; Taing & Chang, 2021). Theory of planned behavior (TPB) helps to describe human behavior through intention which in turn is affected by subjective norms, attitude towards specific behavior and perceived behavioral control (Ajzen, 1991). Attitude is an important variable of TPB that directly affects behavioral intention. Attitude means "degree to which a person evaluation of appraisal of the behavior in question" (Ajzen 1991, p.188). Thus in context of tax compliance, attitude towards compliance has significant effect on intention to compliance (Kirchler, 2008).

Fairness Heuristic Theory states that individuals tend to comply, if they perceived tax to be fair (Al Zaqeba & AL-Rashdan, 2020). Fairness Perception besides self-interest seems to be

more significant factor towards tax compliance (Awadh Bin-Nashwan et al., 2020; Heinemann & Henninghausen, 2015). Similarly a study conducted in Pakistan show that people, who consider taxes as social and moral obligation, have reservations regarding transparency of tax system (Ullah, Khan & Sharif, 2018). Fairness perception of people about taxation system is shaped up by the interactional fairness, which means that how the taxation system is presented to them. Wenzel (2003) studied a framework of fairness that is composed of three level of justice: retributive justice, procedural justice and distributive justice (Tyler & Smith, 1998). However, tax fairness can be viewed in different perspectives. All these perspectives tend to show positive linkage with attitude towards compliance and intention to compliance (Febrian, 2020; Slemrod, 2007). Thus, fairness perception is proved as an important factor for encouraging tax compliance.

Fairness perception of individual taxpayer develops through a number of factors such as trust in governments ((Febrian, 2020), tax knowledge (Mukasa, 2008; Tan & Chin-Fatt, 2000) and tax system complexity (Che Azmi et al., 2016b). A group of researcher has studied the association of tax knowledge and compliance behavior (Che Azmi et al., 2016; Newman, 2018; Saad, 2014). They argued that people should be well informed about rules and procedural requirements for tax compliance and information play important role in motivating individuals to tax compliance (Alm, 2019). Awareness of tax system significantly leads to tax compliance behavior, even if the system is complex (Azmi, Zainuddin, Mustapha & Nawi, 2016). Only few studies have verified the association between tax knowledge and fairness perception. A study conducted in New Zealand indicates that tax knowledge (Understanding about tax system) positively influence fairness perception and tax compliance (Tan & Chin-Fatt, 2000). Among all above considerations, Complexity of tax compliance (paper work requirement) and cost of compliance are most important factors while studying compliance behavior (Evans, 2003). Tran-Nam (2008) draws the attention of researchers towards additional perspectives including policy and compliance complexity. Thus, the relationship between tax system complexity and fairness perception of individual taxpayer need to be tested.

In context of above literature, tax knowledge and tax system complexity are found as contributing factors to the compliance behavior. However, only few researchers have worked on the contribution of these factors to the fairness perception of individual taxpayers. Thus in this study, sequential mediation model is used. In other words, we are going to test the mediating role of fairness perception between the association of explanatory variables (tax knowledge and tax system complexity) and outcome variable (intention to compliance), through attitude towards compliance.

H₁: Fairness perception significantly mediates the association between tax knowledge and intention to compliance.

H₂: Fairness perception significantly mediates the association between tax system complexity and intention to compliance.

H₃: Fairness perception significantly mediates the association between tax knowledge and intention to compliance, through attitude towards compliance.

H₄: Fairness perception significantly mediates the association between tax system complexity and intention to compliance, through attitude towards compliance.

2. Research Elaborations

2.1. Conceptual framework

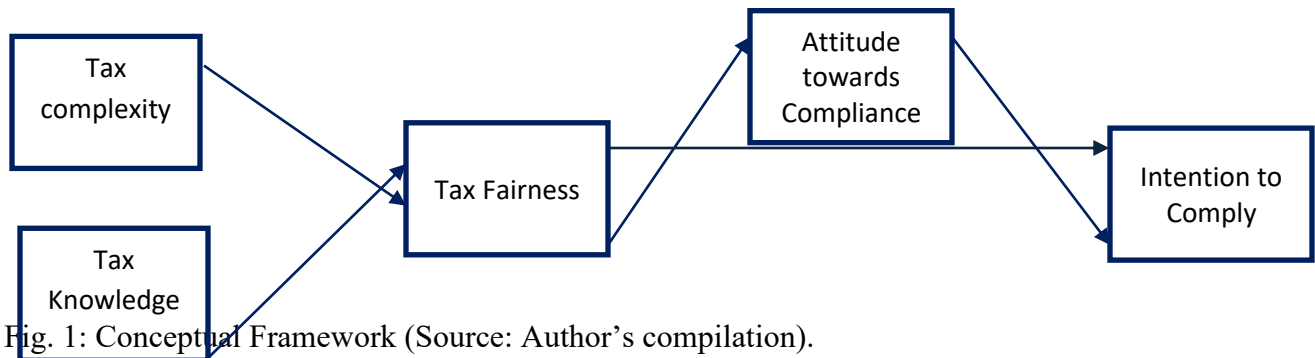


Fig. 1: Conceptual Framework (Source: Author's compilation).

2.2. Measurement scale

Measurement scale was adopted. The whole description of constructs with their operational definitions is given below:

Variables	Operational Definition	Adapted from
Tax System Complexity	Perception about difficulties in compliance procedures such as filing of returns and tax payment, filling the forms, understanding of relevant documents, tax laws, and record maintenance	(Saad, 2011)
Tax Knowledge	Awareness about tax rates, general tax laws and tax collection procedures (Rajmane, 2014).	(Rajmane, 2014)
Fairness Perception	Perception regarding fair share of taxpayer in tax burden against average taxpayer (Gilligan and Richardson, 2005).	(Gilligan and Richardson, 2005)
Attitude towards Compliance	The degree to which performance of the behavior is positively or negatively valued (Ajzen, 1985, 1991, 2013; Saad, 2011).	(Saad, 2011)
Intention to Compliance	Degree of willingness of taxpayers to comply with tax policies and laws (Ajzen, 1985, 1991, 2013; Saad, 2011).	(Saad, 2011)

2.3. Sample selection and data collection

This empirical study is done on salaried group (government employees) of Pakistan. Total number of questionnaire distributed was 300, while 270 has been received with valid responses. As the population is unknown in this study, the rule of calculating sample size is (number of items in the questionnaire*10) (Wilson Van Voorhis & Morgan, 2007). Respondents were approached physically as well as online through Google doc. Moreover, snowball sampling method is used (Akram, 2018).

3. Results and Discussions

PLS-SEM appeared to be exceptionally proficient for whole evaluation of the hypothetical model. Frequently, PLS-SEM outcomes are introduced into two stages: first stage includes estimating the model goodness, for example, reliability as well as validity. Thought process behind these checks is to examine whether the construct is true representative of variables, if not such measures ought not to be used for the evaluation of model. Second phase is to statistically test the theoretical model.

3.1. Goodness of measures

Reliability

The value of cronbach’s alpha indicates the scale reliability and values ranged is between 0 and 1. However, least threshold is 0.7. So, In following Table # 1, results are supporting the internal consistency of the scale items, as the Cronbach’s alpha value of all variables is larger than threshold 0.7“(Hair, Hult, Ringle, & Sarstedt, 2014)”. Based upon the outcomes described in Table # 1, as compared to the threshold 0.6 all five constructs have high internal consistency.

Table 1. Reliability (Construct and Composite)

Cronbach's Alpha		Composite reliability
ATC	0.836	0.901
FP	0.895	0.923
IC	0.907	0.942
TC	0.786	0.840
TG	0.800	0.843

Validity Analysis

Table 2. Discriminant Validity (HTMT)

	ATC	FP	IC	TC	TG
ATC					
FP	0.398				
IC	0.750	0.513			
TC	0.094	0.055	0.039		
TG	0.205	0.179	0.144	0.129	

Hetrotrait-Monotrait (HTMT) Ratio used to check the Discriminant validity. Results reported in above table # 2 shows that values are less than standard value 0.85 as proposed by Kline (2011) and (Hair, Hult, Ringle, & Sarstedt, 2017). Similarly, another threshold value of 0.9 as proposed by Gold, Malhotra and Segars (2001) also provide the indication of discriminant validity of instrument used in this study.

Table 3. Validity (Convergent)

Average Variance Extracted (AVE)	
ATC	0.752
FP	0.705
IC	0.843
TC	0.516
TG	0.520

The value of AVE used to estimate Convergent Validity. Results described in table 3, the AVE values for first three variables are larger than 0.5, as suggested by Fornell and Larcker (1981). On the other hand last two variables values are less than 0.5 which looked to be weak in terms of convergent validity. **Model Evaluation**

Table 4. Inner VIF Values

	ATC	FP	IC	TC	TG
ATC			1.139		
FP	1.000		1.139		
IC					
TC		1.004			
TG		1.004			

3.2. Model Fit Assessment

Table 5. Model Fit Summary

	Estimated Model
SRMR	0.081
d_ ULS	1.512
d_ G	0.786
Chi-Square	997.797
NFI	0.664

Table 5 represents the model fitness summary as provided by PLS-SEM. The value of standardized root mean square (SRMR) must fall between 0 and 1. The SRMR value in estimated model is 0.079 which is the indication of acceptance of the model, value of SRMR should be less than 0.8 (Ali & Qazi, 2018).

After the model acceptance in table 5, value of R Square is the important to represents the explanatory power of the endogenous and latent variables. The R Square value range is between 0 and 1. However more it is closer to zero, better the path model estimation. Moreover, Stone-Geisser Q² is used to estimate the predictive relevance of the model (Ali et al., 2020). Thus, the effect size of outcome variable i.e. intention to compliance is large, while mediating variables have small effect size.

Table 6. R Square

	R Square	R Square Adjusted	Q ²	Effect Size
ATC	0.122	0.118	0.083	Small
FP	0.039	0.031	0.023	Small
IC	0.497	0.493	0.392	Large

“Effect Size: Small: 0.0 < Q² effect size < 0.15; Medium: 0.15 < Q² effect size < 0.35; Large: Q² effect size > 0.35 (Ali, Farooq, & Naqvi, 2020)” (Source: Author’s Analysis)

PLS Path Model Analysis

Table 7 provides the summary of coefficients with significance level. Results shows that path coefficients are supporting hypothesized relationships with the exception of Tax Complexity (TC). P value (Significance level) for tax complexity is more than 0.05. These outcomes are in compliance with literature.

Table 7. Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
ATC -> IC	0.564	0.566	0.072	7.807	0.000
FP -> ATC	0.349	0.348	0.068	5.149	0.000
FP -> IC	0.270	0.268	0.061	4.426	0.000
TC -> FP	-0.063	-0.052	0.115	0.548	0.584
TG -> FP	0.191	0.206	0.076	2.518	0.012

Bootstrapping

To enhance more accuracy in outcomes, the methodology of bootstrapping is utilized. Ali and Qazi (2019) claimed that bootstrapping is essentially the nonparametric methodology which serves to more exact assessment. In this program, t statistics for both outer and inner model is produced for significance testing. Moreover, the outcomes out of bootstrapping approximate the normality of data. Figure # 1 addresses the underlying model assessed through strategy of bootstrapping.

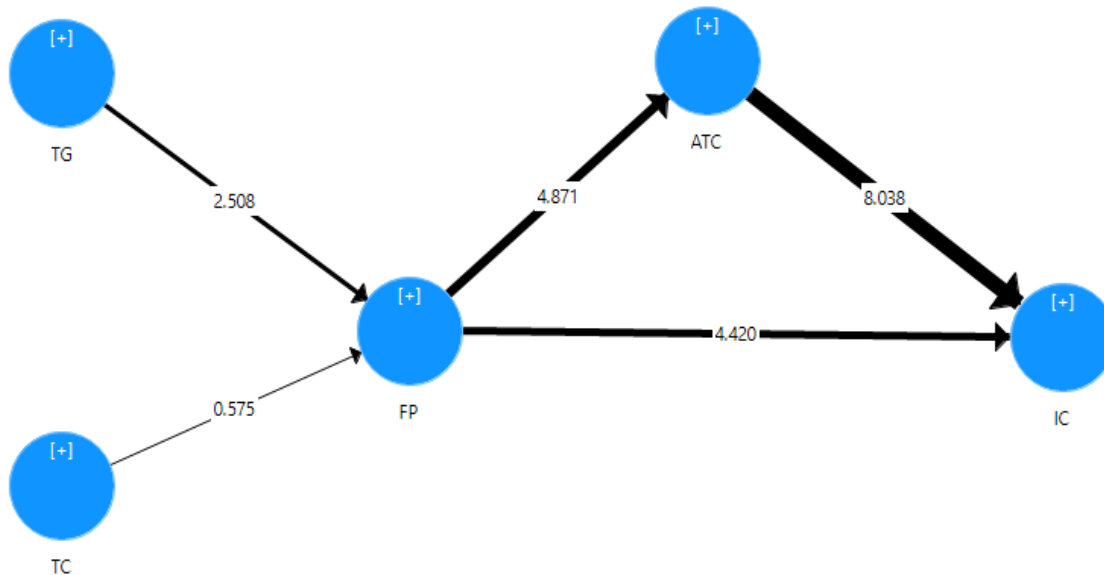


Fig 2. Bootstrap (Path Analysis)

Table. 8 shows the summary statistics of indirect path coefficients. According to threshold of significance (P Value <0.05) all indirect path coefficients are significant except the paths from tax complexity (TC) to Attitude towards compliance (ATC) through fairness perception (FP), tax complexity (TC) to intention to comply (IC) through fairness perception (FP) and tax complexity (TC) to intention to comply (IC) through fairness perception (FP) and Attitude towards

compliance (ATC) are insignificant. So, the results in table 7 and table 8 are providing the evidence for full mediation.

Table 8. Specific Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics	P Values
TC -> FP -> ATC	-0.022	-0.018	0.041	0.539	0.590
TG -> FP -> ATC	0.067	0.071	0.030	2.212	0.027
TC -> FP -> ATC -> IC	-0.012	-0.010	0.024	0.525	0.600
FP -> ATC -> IC	0.197	0.198	0.050	3.936	0.000
TG -> FP -> ATC -> IC	0.038	0.041	0.018	2.075	0.038
TC -> FP -> IC	-0.017	-0.014	0.032	0.537	0.591
TG -> FP -> IC	0.052	0.055	0.025	2.082	0.038

4. Discussion and Conclusion

This study investigated the impact of tax knowledge and tax system complexity on compliance behavior of individuals. However, the relationship between independent and dependent variable is mediated by fairness perception of individuals. Furthermore, relationship between fairness perception and compliance behavior is mediated by attitude towards compliance. Attitude theory reflects that perception of individuals about fairness of tax system leads to attitude development about taxation system in individuals, which will in turn results into compliance behavior.

This study come with the finding that tax knowledge has positive impact on fairness perception and this finding is consistent with literature (Newman, 2018 ; Saad, 2014). So, this study has answered its first research question. However, our second research question about the effect of tax system complexity on fairness perception of individuals is still unanswered. The relationship between tax system complexity and fairness perception is negative but insignificant. Furthermore, sequential mediation is proved by indirect path coefficients and their significance level. The association between fairness perception and intention to compliance is mediated by attitude of taxpayer towards compliance, which in turn is consistent with the attitude theory (Ajzen, 1993).

This empirical evidence has come up with the conclusion that tax knowledge is the most important antecedent of compliance behavior through fairness perception. Perception fairness and compliance behavior can be improved by creating awareness about tax system among individuals and helping them to understand that how to use this taxation system. More and more the people are having basic knowledge of taxation system, better will be the fairness perception, which will come up with positive outcomes of tax compliance. Moreover, this study come up with the conclusion that Tax system complexity is not influencing taxpayer's attitude towards compliance.

In short, awareness about complex system is found to be important factor. Awareness of tax system significantly leads to tax compliance behavior, even if the system is complex. This finding is consistent with that of a recent study conducted by Azmi et al. (2016). Moreover, tax complexity can be researched with its further decomposition into: tax compliance complexity and content complexity.

This study is expected to contribute to literature on taxation, with the aim of helping policy makers to improve taxation system through behavioral changes among individuals. People behavior towards compliance is the most important factor that leads to tax compliance in any

country. Furthermore, this study will help policy makers in considering the factors affecting the compliance behavior of individuals and how it can be improved. Moreover, this study has come up with the factors that lead to fairness perception among individuals. Among these factors, tax knowledge is the important one. This study falls an assertion on the importance of basic tax knowledge and awareness of taxation system in any country.

In spite its significant contribution to the literature; this study is not free form limitation. First, small sample size of 270 -in comparison with other relevant studies- is the hurdle in generalizing the results. Secondly, this study is conducted only on a specific group of taxpayers that consists of government employees in Pakistan. It would be very interesting, if future researches cover other groups of taxpayers like individuals or corporations. Moreover, study can be conducted by further decomposing fairness perception into its different levels of justice i.e.: distributive justice, procedural justice and retributive justice. Moreover, tax compliance cost can be another important factor to study especially in developing countries. Penalty regimes can be another potential factor that can come up with valid contribution to the literature of taxation system.

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