

THE IMPACT OF TAXPAYER PERCEPTION ON TAX COMPLIANCE MODERATED BY ADOPTION OF E-TAX SYSTEM

Anum Shafique, Lecturer, University Institute of Management Sciences, Arid University Rawalpindi, Pakistan. Email: an_shafique@yahoo.com

Muhammad Shahab Abbasi, University Institute of Management Sciences, Arid University Rawalpindi, Pakistan. Email: shahababbasi03@gmail.com

Muhammad Noman Khalid, University Institute of Management Sciences, Arid University Rawalpindi, Pakistan. Email: nomankhalid304@gmail.com

Muhammad Awais, Bahria University, Islamabad, Pakistan.
Email: awaisabasy@gmail.com

Mehmood-ul-Hassan, Lecturer, Alama Iqbal Open University, Islamabad, Pakistan. Email: mehmmmodulhasan@aiou.edu.pk

Abstract. *The underlying study focuses on investigating that if the impact of taxpayer perceptions*

Received 9 April 2021
Accepted 11 December 2021

have on tax compliance with moderating impact of adopting of e-tax system in Pakistan where Fairness perception, tax knowledge and tax complexity are taken as independent variables, implementation of e-tax system as a moderating variable and tax compliance as dependent variable. This research follows deductive approach. The data for the research is collected with the help of a self-administered questionnaire. Sample of the study is 163 respondents selected through convenience sampling technique. SPSS has employed for data analysis. To know the prelateship among the variables, multiple regression technique has been applied on the data. The outcomes suggest that fairness perceptions and tax compliance have direct relationship. The findings of the study suggest that the moderation relationship between the variable named adoption of e-tax system and tax perceptions and tax compliance is insignificant. Besides this, tax knowledge and tax complexity does not have a significant positive impact on tax compliance in Pakistan.

Keywords: Taxpayer Perception; Fairness Perception; Tax Knowledge; Tax Complexity; Adoption of E-Tax System; Tax Compliance

Introduction

Tax is referred to as an obligatory contribution to the revenue of state imposed by the government over income of employees and profits generated by the businesses, or increased cost of transactions, services, and goods (Rosid et al.,

2018). It is considered as a mandatory financial charge or some other type of levy imposed upon a taxpayer (workers or business entities) by regulatory authorities for funding numerous public expenditures. A person is obligated to be punished in case of resistance or evasion to tax, or failure to pay tax (Ortega, et al., 2016). Taxes are highly significant for the government, as government might not be able to satisfy the needs and wants of societies in the absence of taxes. Throughout the world, taxation is very important, as governments mostly collect the amount of money in the form of tax in order to utilize it for financing of social projects (Mitu, 2016). Lack of tax collection would eventually result in causing serious negative influence over the health sector and contributions made by the government in improving this sector. Through taxes, aspects such as social security, medical research, and social healthcare, are funded by the government. Money collected from the taxation is also utilized for financing education sector (Casal et al., 2016). Majority of the portion of money collected from taxation is invested by governments in developing education and human capital. Similarly, taxation is highly important for a developing country such as Pakistan, as taxation is utilized for maintaining, furnishing, and funding public education system by Pakistani government. In addition, governance of Pakistan is improved through money collected in the form of taxation for handling country affairs in an appropriate manner. Taxation & its successful collection is making a valid contribution in economic growth and stability of Pakistan. Money collected through taxation is invested on postal system, members of parliaments, police officers, public servants and others, which work for public interest (Damayanti et al., 2015). It has been obvious that taxation always makes a valid contribution in economic growth and development of a country. In Pakistan, economic development is financed with the help of taxation. Taxation is helping the country in maintaining an economy to have a higher employment level, as it will significantly enhance people's income and saving capacity (Gubar et al., 2017). However, there has been dearth of the studies on the subject regarding the implementation of e-tax system and tax agreement in a developing country such as Pakistan (Night & Bananuka, 2019; Saad, 2014).

In a developing country such as Pakistan, tax collection is one of the major issues which government authority and regulatory body (Federal Board of Revenue) has to deal with. Due to a major contribution made by taxes paid by the taxpayers within country's economic stability, it is highly necessary to develop fairness perceptions amongst the tax payers in order to enhance their tax compliance. Amongst significant problems, lack of awareness regarding the importance of tax payment has been the biggest issue which government authorities and regulatory bodies have been experiencing for multiple decades and yet to find a solution for it (Gubar et al., 2017). Limited resources available

within Pakistan which does not provide a strong platform for developing significant knowledge amongst the taxpayers. On the other hand, there is a lack of research conducted within Pakistan regarding the perception of taxpayers and its influence on adoption of e-tax system and tax compliance (Night & Bananuka, 2019; Saad, 2014). Therefore, this study is led to recognize the relationship between taxpayers' perception (fairness perception, tax knowledge, and tax complexity), adoption of e-tax system, and tax compliance in Pakistan.

Research Questions

1. The research questions for this paper are mentioned as follows: Remove 1)
1. Does fairness perception impact on tax compliance in Pakistan?
2. Does Tax Knowledge impact on tax compliance in Pakistan?
3. Does tax complexity impact on tax compliance in Pakistan?
4. Does adoption of e-tax system moderates the relationship between fairness perception and tax compliance in Pakistan?
5. Does adoption of e-tax system moderates the relationship between tax knowledge and tax compliance in Pakistan?
6. Does adoption of e-tax system moderates the relationship between tax complexity and tax compliance in Pakistan?

Literature Review

Fairness Perception

Research studies on the subject of Fairness perception suggest that there are different forms in which fairness perception could have been made. For instance two famous forms are horizontal fairness and vertical fairness (Jimenez & Iyer, 2016). Horizontal fairness is considered as the equal treatment of equally circumstanced individuals. Similarly, it is also known as similar amount of tax must be paid by the taxpayers having similar economic positions (Gubar et al., 2017). Contrary to that, vertical fairness is defined as different amount to be paid by the taxpayers having different economic positions. This form of fairness reflects that taxpayers having higher economic positions must be paying higher tax in comparison to people having lower economic positions (Oladipupo & Obazee, 2016). Distributive Justice Theory (DJT) has helped in derivation of these two forms of fairness, as this theory helps in improving the fairness perception amongst taxpayers and treating taxpayers with complete fairness in order to avoid any negligence. This theory has suggested that a compromise is needed to be made amongst two forms of

fairness for accomplishing positive perceptions on the fairness of an income tax system (Kogler et al., 2015).

Fairness generally measures whether a person's decision (pay) tax framework is reasonable. The investigation of vertical fairness depends on the propensity to pay and the structure of the tax rate, both horizontal and dynamic. Retribution to fair management of the fairness of forced discipline (Mitu, 2016). Individual fairness is related to the individual's personal responsibility, and management fairness is again consistent with the tax law (method fairness) and the essence of technology used by tax law experts (procedural justice).

Choosing the tax system as a reason for relevance because it provides productive reasons for other important people because taxpayers can work with different taxpayers (those who are considered comparable and diverse) or expert figures (tax experts) to form a comparison. Fair work is a well-thought-out issue in companies that plan legal tax laws. An unusual purpose of research is that fairness is an incredible idea, and in this way, it becomes too difficult to consider defining accepted principles to assess the fairness of a particular plan. In any case, the individual's assessment is a factor other than the amount claimed. If only the weight of the claim is important, then in Europe, the tax evasion rate in Europe is much higher because the tax burden is usually higher than elsewhere (Saad, 2014). In addition, reasonable tax arrangements can also be attributed to reasonable concerns for administrative experts, as reasonable taxes can increase tax morale and can simplify tax revenue. Some argue that to develop an unyielding tax framework, two main conditions must be met: the tax framework must be reasonable, and the executive must be responsive. Regardless of whether the perception of fairness is strongly influenced by emotional sentiment, some of the main metrics are considered to be fundamental elements of the tax plan being considered reasonable (Muhammad & Dabor, 2016).

H1. Fairness perception has positive impact on tax compliance in Pakistan.

Tax Knowledge

In the prevalent tax system where compliance is voluntarily made, one of the crucial elements of this system is tax knowledge because of its significance in determination of accurate tax liability. Lack of tax knowledge could end up in causing non-compliance with tax laws by the taxpayers either unintentionally or intentionally (Mukhlis et al., 2015). A research study conducted by Ortega et al (2016) found that the small taxpayers lack tax knowledge which ultimately led them to unintentional non-compliance behavior.

The study of Fauziati et al. (2016) has emphasized over explaining the important contribution that tax knowledge makes in influencing fairness

perceptions. This study is conducted by making a comparison between taxpayers and tax preparers. The findings of this study have revealed that tax preparers were having far higher fairness perceptions in comparison to the fairness perceptions of taxpayers. The difference amongst tax payers and tax preparers regarding fairness perceptions is mainly based on the significant amount of tax knowledge that tax payers lack and tax preparers have. The findings of this study have been backed by Rosid et al. (2018) through a research survey highlighting the influence that tax knowledge has over attitudes of tax payers regarding fairness of the tax system.

The study of Purnamasari and Sudaryo (2018) is only centered on tax knowledge, and prior studies divides tax knowledge into monetary mindfulness and expertise to observe the impact of various knowledge on fair perception. These findings reveal that various tax knowledge affects fair perception and thus affects compliance behavior. The study of Olaoye et al. (2017) suggested that formal taxation courses would enhance the knowledge of the objectives of legal and financial arrangements, thereby increasing the apparent fairness. Although proving fairness is a multidimensional construction, these early surveys generally focus on the impact of tax knowledge on the general fairness of the tax framework, rather than each element of fairness. In order to basically investigate the taxation knowledge about the fair perception of the tax framework, it is not only the basis for identifying various knowledge, but also the fairness factor affected by the type of knowledge. Having said that, this survey examines the impact of tax knowledge on the seven fair factors previously discussed (Ortega et al., 2016).

Tax knowledge is a fundamental part of deliberate compliance with the tax framework, especially when determining exact tax liabilities. Later surveys conducted in Malaysia by Damayanti, et al. (2015) found that while determining the taxpayer's compliance by using the self-assessment framework the component of tax knowledge plays a key role. The researchers confirmed this observation by conducting numerous surveys. A study by Deyganto (2018) also affirm this notion that the compliance rate is directly proportional to Tax knowledge.

H2. Tax knowledge has an impact on Tax Compliance in Pakistan

Tax Complexity

The complexity of taxation arises because of the modernity of tax law. Some experts agree that the specific level of complexity in the payroll tax framework is important to ensure the rationality of the framework (Borrego et al., 2015). As Borrego et al. (2016) suggests that this is particularly relevant to tax

experts. Tax experts tend to work against tax complexity, which increases their chances of winning relevant cases, while tax lawyers once again support tax complexity, which increases the likelihood that taxpayers will win the case. In addition, the tendency of the tax bookkeeper is also an abnormal state of tax complexity, as it will expand the interests of the tax administration. Whereas, Vaillancourt et al. (2015) suggests that tax experts tend to be in the lower dimension of tax complexity and tax experts may get when the dimension of complexity approaches zero. Although tax experts tend to pay tax, the complexity of taxation does lead to taxpayers' negative perceptions of fairness. As Casal et al. (2016) believes that complexity and fairness are unmistakable, but the payroll tax framework is contradictory.

Tax complexity can involve multiple structures. For instance, complexities in terms of compliance, framework and rule. As Casal et al. (2016) surveys of tax complexity in a relative survey of seven countries show that Japan, the United Kingdom, France, Italy and the United States have extremely complex tax frameworks. In New Zealand itself, since the mid-1980s, different tax reforms have been carried out to break the complexity of the tax framework. The study of Ulph (2015) has explained several determinants associated with “tax complexity” and resulting in having a positive impact over tax compliance. The study of Vaillancourt et al. (2015) has conducted a survey over taxpayers of Italy in order to identify that tax complexity is associated with the utilization of resources, as better the resources of a country utilized by its regulatory authorities, more taxpayers will be willing to pay taxes and less will be the tax complexity.

H3. Tax complexity impacts on tax compliance in Pakistan.

Adoption of E-Tax System

Research studies on the subject of E-tax system, such as one conducted by Soneka and Phiri (2019) found that the access of tax service through internet is the concept of electronic tax system. The tax services under this system include, the registration of tax returns, registration of applications regarding the payments and certifications. This history of electronic system began in US when the system of electronic tax returns was started through Internal Revenue Services (Alghamdi & Rahim, 2016).

Further, many research studies narrate that the electronic tax system ameliorates the tax compliance system. For instance, a study conducted by Barati and Bakhshayesh (2015) found that such improvement is caused because the electronic system makes the process quick. Individuals get faster access to the services related to Tax and they do not need to visit the offices in person. In addition to this, some researchers found that the system as is easy to use,

secure, reliable, user-friendly, provides convenient payment methods, thus can effectively improve tax compliance (Soneka & Phiri, 2019).

A research study conducted by Sondakh (2017) found that in the contemporary times, the electronic system has been introduced in many countries/cities such as Chile, Germany, France, Sweden, Netherlands etc. in addition to this, countries in Africa such as Rawanda, Nigeria etc. have also adopted Electronic Tax Systems (Soneka & Phiri, 2019).

Moreover, the research study conducted by Hammouri and Abu-Shanab (2017) reveal that the relationship between online tax filing and the level of tax compliance is positive and significant. The reason behind this may be convenience and simplicity of the tax filing system.

- H4. Adoption of e-tax system moderates the relationship between fairness perception and tax compliance in Pakistan.
- H5. Adoption of e-tax system moderates the relationship between tax knowledge and tax compliance in Pakistan.
- H6. Adoption of e-tax system moderates the relationship between tax complexity and tax compliance in Pakistan.

Tax Compliance

Tax compliance is defined as the circumstance that causes the taxpayer to file the tax returns which are obligatory within the reasonable time. The filing of returns depends on the tax law applicable and the tax liability when the return is being filed. This definition is used by many researchers, as previous definition of tax compliance was almost similar except for the inclusion of court decisions based on which such definition was strongly criticized (Alm et al., 2015). The relationship between tax compliance and fairness perceptions is explained by numerous research studies, as the study of Castro & Scartascini (2015) has conducted a survey involving data from 1990-2010 and identified that tax rate is having lower influence over tax compliance in comparison to the influence that fairness perceptions has over tax compliance. Similarly, the study of Dwenger et al. (2016) has also provided empirical evidence for the influential relationship between tax compliance behavior and fairness perceptions. Numerous researchers within their research studies such as (Ortega et al., 2016; Purnamasari & Sudaryo, 2018), have found out the significant relationship amongst perceptions of an improved tax system and tax compliance.

Simple tax compliance implies taxpayers' satisfaction with their commitment to complete a tax return for a specific period of time and mentions salary and

survey results. For example, this must be submitted to all organizations, and most organizations have tax compliance benefits that also provide these management to organizations that do not have the opportunity to process the organizations they must submit to them (Dwenger et al., 2016). In order to fulfill the obligation to establish a decent society, training is a major force that makes extensive use of how to give and how to waive any excuse for tax compliance. Although tax compliance prompts unconditionally fully fulfill all tax commitments required by law. Tax compliance means submitting tax returns within the specified timeframe, accurately expressing compensation and survey results, covering government expenditures for maturity assessments, and fulfilling the required regulatory obligations (Rosid et al., 2018). Pakistan's tax arrangements have failed to meet expectations, especially in terms of its ability to raise sufficient income. The most important tax bases, such as personal and corporate income taxes and general sales taxes (GST), continue to be tight and the tax avoidance dimension remains high. In addition, as of now, there has been a significant decline in the ratio of taxes to gross domestic product (GDP) (Gubar et al., 2017).

Theoretical Framework

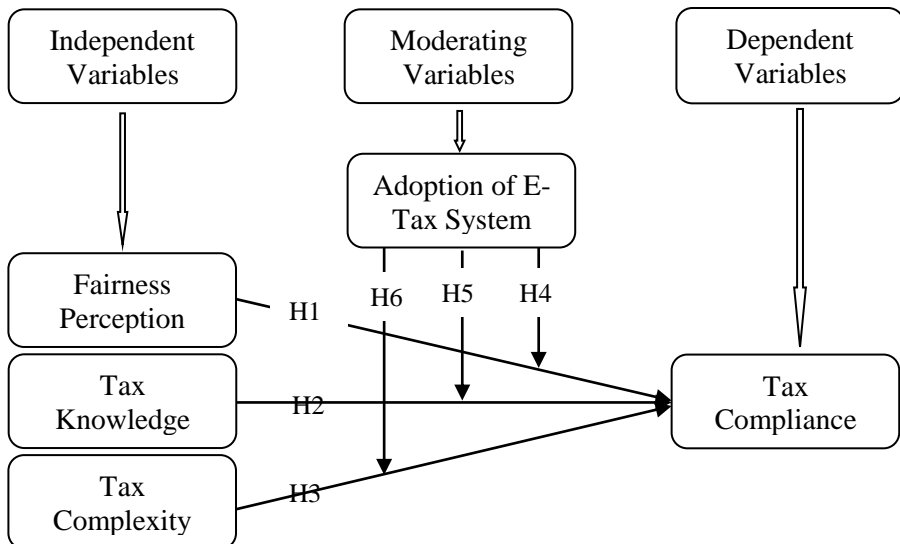


Figure 1: Theoretical Framework

Research Methodology: Sampling

This research employs the deductive approach. Population of the study is the salaries persons (taxpayers) in twin cities of Pakistan. Convenience sampling technique has been employed. This approach is in line with the researches of Coolen-Maturi (2013) and Yong et al. (2015). The selection of the sample size

was based on the research suggestions such as Sekaran (2003). Both of the leading researchers assert that the sample must be greater than 30 and less than 500 and a sample size of 100 to 200 is medium. Keeping this in mind, 180 questionnaires were distributed among the salaried persons (taxpayers) and received 163 questionnaires that were reliable for data analysis. A sample of 163 respondents (salaried persons), who are regular taxpayers and working in private or public sector of Pakistan, has been taken to represent entire population.

Data Collection and Analysis

A structured questionnaire has been adopted from previous research studies, as questionnaire for fairness perception, tax knowledge, tax complexity, and tax compliance have been adopted from Saad (2009) and questionnaire for adoption of e-tax system has been adopted from Night and Bananuka (2019). The final and assembled questionnaire with respect to the variables chosen for the purpose of the study was then provided to the respondents in order to collect data for the study. SPSS was employed for data analysis. The results of the reliability analysis are reported in Table 1 and 2.

Table 1 *Reliability Statistics (Collective)*

Cronbach's Alpha	N of Items
0.91	35

Table 2 *Reliability Statistics*

Variable	Cronbach's Alpha	N of Items
Fairness Perception	0.70	11
Tax Knowledge	0.74	9
Tax Complexity	0.67	3
Adoption of E-Tax System	0.92	8
Tax Compliance	0.82	4

Table 1 presents that Value of Cronbach's alpha is 0.91 which is very close to 1 that demonstrates the reliability of questionnaire used as well as the reliable responses provided by respondents. Whereas Table 2 presents that the reliabilities of fairness perception, tax knowledge, tax complexity, adoption of e-tax system, and tax compliance are 0.70, 0.74, 0.67, 0.92, and 0.82.

Operational Definition and Measurement of Variables

Fairness perceptions were measured in terms of perception of tax compliance by the individual tax payers. In order to measure this, four dimensions were used such as general fairness, retributive fairness, personal fairness and administration fairness. It was measured through three questions in each

dimension of used to measure this variable. However, two questions were used to measure the last dimension that was administrative fairness. Hence, in total 11 questions were adapted from Saad (2009). Further, Tax knowledge was measured in terms of general knowledge, legal knowledge and technical knowledge of an individual regarding the tax system of the country. In order to measure this variable 9 questions were adapted from Saad (2009) the first dimension of General knowledge 2 questions were adapted, for legal knowledge three questions were adapted and for technical knowledge four questions were adapted. Tax complexity was measured in terms of difficulties faced by the individual tax payers regarding the compliance of tax. Three questions were adopted in order to measure this variable from Saad (2009) scale. Tax compliance was measured in terms of timeliness of meeting the tax obligations by the individual tax payers. Four questions were adapted in order to measure this variable. Finally Adoption of E-tax system was measured in terms of usage of electronic system for the purpose of filing tax and the ease of use. Eight questions were adapted from the scale of Night and Bananuka, (2019).

Data Analysis and Discussion

Results/information of the demographics regarding the respondents are presented in table 3.

Table 3 *Respondents' Demographic Statistics*

Description		Frequencies	Percentages
Gender	Male	113	69
	Female	50	31
Marital Status	Single	68	42
	Married	95	58
Employment	Public	29	18
	Private	125	77
	Self-Employed	4	2
	Others	5	3
Age	20 – 25 years	17	10
	26 – 30 years	56	34
	31 – 35 years	37	23
	36 – 40 years	19	12
	41 – 45 years	21	13
	Over 45 years	13	8
Education	Diploma	3	2
	Graduate	42	26
	Masters	89	55
	M.Phil	18	11

	PhD	2	1
	Others	9	5
Income	30,000 – 60,000	65	40
	60,000 – 90,000	40	24
	90,000 – 120,000	19	12
	120,000 – 150,000	19	12
	150,000 – 180,000	9	5
	Over 180,000	11	7

The Table 3 provides details regarding the demographics of the respondents chosen for the purpose of the study. The segregation and the frequencies have been made on different categories, these include Gender, Marital Status, Employment, Age, Education and Income. Each category is further classified into maximum possible divisions in order to highlight the demographic characteristics of the sample selected. For instance, the total sample shows that 69% of the population constitutes male respondents and remaining 31% holds female respondents. Similar explanations in terms of different categories have been highlight further. It pertinent to note here that major chunk of the respondents held master's degree and were in the age bracket of 26 to 30 years having income of 30,000 to 60,000. Employment status is married and work in private institutes.

Table 4 *Descriptive Statistics (N=167)*

	Minimum	Maximum	Mean	Std. Deviation
FP	2.09	5	3.39	0.57
T_K	1.67	5	3.51	0.63
T_CC	1	5	3.40	0.92
AETS	1	5	3.54	0.91
T_C	1	5	3.67	0.86

The mean values of fairness perception, tax knowledge, tax complexity, adoption of e-tax system, and tax compliance, are 3.3938, 3.5115, 3.3967, 3.5422 and 3.6702 respectively. No mean value is closer to +ve or -ve extreme. Whereas, mean value for tax compliance has been the highest.

Correlation Analysis

Results of the correlation analysis are reported in table 5.

Table 5 *Correlations Matrix*

Pearson Correlation	FP	TK	TCC	AETS	TC
TK	0.66**	1.00			
TCC	0.50**	0.39**	1.00		
AETS	0.40**	0.35**	0.37**	1.00	
TC	0.42**	0.32**	0.36**	0.66**	1.00

** . Values of the correlation analysis are significant at the 0.01 level (2-tailed).

The results of the analysis indicates the strength of the relationship between variables and the direction of that relationship. All the variables reflect significant and positive relationship. For instance, the value .664** shows that the magnitude of the relationship. It also tells about the direction of the relation. Since all the results were significant as all the p-values were less than 0.05, only the coefficient is reported in order to see the magnitude and the direction of the relation.

Regression Analysis

Table 6 *Model Summary*

Model	R	R²	Adjusted R²	Std. Error of the Estimate	Durbin Watson
1	0.69a	0.47	0.46	0.63	1.59

a. Predictors: (Constant), AETS, TK, TCC, FP

The R Square value in model shows that fairness perception, tax knowledge, tax complexity, and adoption of e-tax system accounted for 45.8% variance in tax compliance. The Durbin Watson value is 1.587, which is within the acceptable range of 0 to 4.

Table 6 *ANOVA*

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	55.87	4	13.97	35.18	.000
Residual	62.72	158	0.40		
Total	118.59	162			

a. Dependent Variable: TC

b. Predictors: (Constant), AETS, T_K, T_CC, FP

Value in table 6 reflects that the model is fit because the value of F is greater than 4 and level of significance is less than 0.05.

Table 7 *Coefficients*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	0.77	0.32		2.36	0.02		
FP	0.26	0.13	0.17	2.08	0.04	0.48	2.09
TK	-0.03	0.11	-0.03	-0.32	0.75	0.55	1.83
TCC	0.07	0.06	0.07	1.08	0.28	0.71	1.40
AETS	0.54	0.06	0.57	8.83	0.00	0.79	1.26

a. Dependent Variable: T_C

Above table shows dimensions which have positive influence on tax compliance. In model, significance value of fairness perception and adoption of e-tax system is below 0.05. This reflects the not only the existence of positive relationship but also tells that this relationship is significant as well. On the other hand, the values of value of tax knowledge and tax complexity is higher than 0.05 which demonstrate that the relationship among these variables are statistically insignificant. Fairness perception ($b = 0.259$) shows that this value is significant ($p = 0.039$). The value for coefficient is positive which indicates that high fairness perception is related to high tax compliance. Whereas, tax knowledge ($b = 0.034$) is insignificant ($p = 0.748$), and the coefficient is negative which indicates that high tax knowledge is related to low tax compliance. Whereas, tax complexity ($b = 0.069$) is insignificant ($p = 0.281$), and the coefficient value is positive which again indicates that tax complexity has no relationship with tax compliance. Finally, adoption of e-tax system ($b = 0.539$) is significant ($p = 0.000$), and the coefficient value is positive that indicates that high adoption of e-tax system is related to high tax compliance.

Moderation Analysis

Table 8 *Model Summary*

R	R2	F	df1	df2	p
0.69	0.48	48.47	3.00	159.00	0.000

Model

	Coeff	se	t	p
Constant	-1.28	1.17	-1.09	0.28
AETS	1.08	0.30	3.62	0.00
FP		0.93	0.93	0.93
int_1	-0.17	0.09	-1.80	0.07

Interactions: int_1 = FP x AETS

Outcome Variable: TC

Hayes (2013) method has been used in order to conduct the moderation analysis. The results of fairness perception (X) in table 8 indicates the existence of significant relationship with tax compliance (Y) (Coeff. 0.93, $p < 0.05$). Adoption of e-tax system (M) and tax compliance (Y) has significant relationship (Coeff. 1.08, $p > 0.05$) and Interaction term (FP x AETS) is insignificant (Coeff. 0.17, $p > 0.05$). On the basis of these values, we can say that AETS is playing an insignificant moderating variable in this model because only FP is significant with TC, but when we test AETS as an interaction term by multiplying with FP, then it is insignificant. So, we can conclude that our finding does not support moderation of adoption of e-tax system between fairness perception and tax compliance.

Table 9 *Model Summary*

R	R2	F	df1	df2	p
0.68	0.46	44.50	3.00	159.00	0.000

Model

	Coeff	Se	t	p
Constant	-0.60	1.02	-0.59	0.56
AETS	1.04	0.26	3.96	0.00
TK	0.66	0.31	2.14	0.03
int_1	-0.14	0.08	-1.76	0.08

Interactions: int_1 = TK x AETS; Outcome Variable: TC

The results of tax knowledge (X) shows significant relationship with tax compliance (Y) (Coeff. 0.66, $p < 0.05$). Adoption of e-tax system (M) and tax compliance (Y) has significant relationship (Coeff. 1.04, $p > 0.05$) and Interaction term (TK x AETS) is insignificant (Coeff. 0.14, $p > 0.05$). On the basis of these values, we can say that AETS is playing an insignificant moderating variable in this model because only TK is significant with TC, but when we test AETS as an interaction term by multiplying with TK, then it is insignificant. So, we can conclude that our finding does not support moderation of adoption of e-tax system between tax knowledge and tax compliance.

Table 10 *Model Summary*

R	R2	F	df1	df2	P
0.68	0.46	44.63	3.00	159.00	0.00

Model

	Coeff	Se	t	P
Constant	-0.66	0.56	1.17	0.24
AETS	0.73	0.16	4.67	0.00
TCC	0.31	0.18	1.73	0.09
int_1	-0.05	0.05	-1.08	0.28

Interactions: int_1 = TCC x AETS; Outcome Variable: TC

The results of tax complexity (X) shows insignificant relationship with tax compliance (Y) (Coeff. 0.31, $p > 0.05$). Adoption of e-tax system (M) and tax compliance (Y) has significant relationship (Coeff. 1.08, $p < 0.05$) and Interaction term (TCC x AETS) is insignificant (Coeff. 0.73, $p > 0.05$). On the basis of these values, we can say that AETS is playing an insignificant moderating variable in this model because not only TCC is insignificant with TC, but when we test AETS as an interaction term by multiplying with TCC, then it is also insignificant. So, we can conclude that our finding does not support moderation of adoption of e-tax system between tax complexity and tax compliance.

Data Findings

Table 11 *Hypotheses Summary*

Hypothesis	Statement	Accepted/Rejected
H1	Fairness perception has positive impact on tax compliance in Pakistan.	Accepted
H2	Tax knowledge has positive impact on tax compliance in Pakistan.	Rejected
H3	Tax complexity has positive impact on tax compliance in Pakistan.	Rejected
H4	Adoption of e-tax system moderates the relationship between fairness perception and tax compliance in Pakistan.	Rejected
H5	Adoption of e-tax system moderates the relationship between tax knowledge and tax compliance in Pakistan.	Rejected
H6	Adoption of e-tax system moderates the relationship between tax complexity and tax compliance in Pakistan.	Rejected

Conclusion and Recommendation

After the careful analysis of the data, the results reveal that the relationship between fairness perception and tax compliance is positive. Whereas the other variables of the study such as Tax Knowledge and Tax Complexity does not hold positive relationship with tax compliance. Further, the adoption of e-tax system does not moderate the relationship between fairness perception, tax knowledge, tax complexity and tax compliance.

The study may prove helpful for the policy makers towards understanding the relationship between perception of tax payers (fairness perceptions, tax knowledge and tax complexity), adoption of e-tax system and tax compliance.

It is worth mentioning that the underlying study was conducted in Rawalpindi and Islamabad for data collection. Future research can be expanded not only in terms of the area covered for the purpose of data collection but also in terms of sample size.

References

- Alghamdi, A., & Rahim, M. (2016). Development of a measurement scale for user satisfaction with e-tax systems in Australia. In *Transactions on Large-Scale Data-and Knowledge-Centered Systems XXVII* (pp. 64-83). Springer, Berlin, Heidelberg.
- Alm, J., Bloomquist, K. M., & McKee, M. (2015). On the external validity of laboratory tax compliance experiments. *Economic Inquiry*, 53(2), 1170-1186.
- Ayers, B. C., Seidman, J. K., & Towery, E. (2017). Taxpayer behavior under audit certainty. Available at SSRN 2609134.
- Barati, A., & Bakhshayesh, S. (2015). Electronic tax system and the facing challenges (Case Study: Kermanshah Province Tax Payers). *Indian Journal of Fundamental and Applied Life Sciences*, 5(S1), 480-497.
- Bhuasiri, W., Zo, H., Lee, H., & Ciganek, A. P. (2016). User Acceptance of e-government Services: Examining an e-tax Filing and Payment System in Thailand. *Information Technology for Development*, 22(4), 672-695.
- Borrego, A. C., Loo, E. C., Mota Lopes, C. M., & Ferreira, C. M. S. (2015). Tax professionals' perception of tax system complexity: some preliminary empirical evidence from Portugal. *eJTR*, 13, 338.
- Casal, S., Kogler, C., Mittone, L., & Kirchler, E. (2016). Tax compliance depends on voice of taxpayers. *Journal of Economic Psychology*, 56, 141-150.
- Castro, L., & Scartascini, C. (2015). Tax compliance and enforcement in the pampas evidence from a field experiment. *Journal of Economic Behavior & Organization*, 116, 65-82.
- Coolen-Maturi, T. (2013). Islamic insurance (takaful): demand and supply in the UK. *International Journal of Islamic and Middle Eastern Finance and Management*, 6(2), 87-104.
- Damayanti, T. W., Sutrisno, T., Subekti, I., & Baridwan, Z. (2015). The role of taxpayer's perception of the government and society to improve tax compliance. *Accounting and Finance Research*, 4(1), 180.

- Deyganto, K. O. (2018). Factors Influencing Taxpayers' Voluntary Compliance Attitude with Tax System: Evidence from Gedeo Zone of Southern Ethiopia. *Universal Journal of Accounting and Finance*, 6(3), 92-107.
- Dwenger, N., Kleven, H., Rasul, I., & Rincke, J. (2016). Extrinsic and intrinsic motivations for tax compliance: Evidence from a field experiment in Germany. *American Economic Journal: Economic Policy*, 8(3), 203-32.
- Fauziati, P., Minovia, A. F., Muslim, R. Y., & Nasrah, R. (2016). The impact of tax knowledge on tax compliance case study in kota padang, Indonesia. *Journal of Advanced Research in Business and Management Studies*, 2(1), 22-30.
- Gubar, E., Kumacheva, S., Zhitkova, E., & Kurnosykh, Z. (2017). Evolutionary behavior of taxpayers in the model of information dissemination. In 2017 *Constructive Nonsmooth Analysis and Related Topics*, (pp. 1-4). IEEE.
- Hallsworth, M., List, J. A., Metcalfe, R. D., & Vlaev, I. (2017). The behavioralist as tax collector: Using natural field experiments to enhance tax compliance. *Journal of Public Economics*, 148, 14-31.
- Hammouri, Q., & Abu-Shanab, E. (2017). Exploring the factors influencing employees' satisfaction toward e-tax systems. *International Journal of Public Sector Performance Management*, 3(2), 169-190.
- Hayes, A. F. (2013). *An Index and Simple Test of Moderated Mediation*. Working paper.
- Kogler, C., Muehlbacher, S., & Kirchler, E. (2015). Testing the “slippery slope framework” among self-employed taxpayers. *Economics of Governance*, 16(2), 125-142.
- Mitu, N. E. (2016). Taxpayer behaviour: typologies and influence factors. *Revista de Științe Politice. Revue des Sciences Politiques*, (49), 77-87.
- Mohammed, F., & Dabor, A. O. (2016). Fairness Perception and Compliance Behaviour of Salaried Taxpayers in Nigeria. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 33(2592), 1-15.
- Mukhlis, I., Utomo, S. H., & Soesetio, Y. (2015). The role of taxation education on taxation knowledge and its effect on tax fairness as well as tax compliance on handicraft SMEs sectors in Indonesia. *International Journal of Financial Research*, 6(4), 161-169.
- Night, S., & Bananuka, J. (2019). The mediating role of adoption of an electronic tax system in the relationship between attitude towards electronic tax system and tax compliance. *Journal of Economics, Finance and Administrative Science*.

- Oladipupo, A. O., & Obazee, U. (2016). Tax knowledge, penalties and tax compliance in small and medium scale enterprises in Nigeria. *IBusiness*, 8(1), 1-9.
- Olaoye, C. O., Ayeni-Agbaje, A. R., & Alaran-Ajewole, A. P. (2017). Tax information, administration and knowledge on tax payers' compliance of block moulding firms in Ekiti State. *Journal of Finance and Accounting*, 5(4), 131-138.
- Ortega, D., Ronconi, L., & Sanguinetti, P. (2016). Reciprocity and willingness to pay taxes: evidence from a survey experiment in Latin America. *Economía*, 16(2), 55-87.
- Purnamasari, D., & Sudaryo, Y. (2018). The effect of knowledge taxpayer, moral taxpayer and tax sanctions on taxpayers compulsory. *International Journal of Trade, Economics and Finance*, 9(5), 115-129.
- Rosid, A., Evans, C., & Tran-Nam, B. (2018). Tax Non-Compliance and Perceptions of Corruption: Policy Implications for Developing Countries. *Bulletin of Indonesian Economic Studies*, 54(1), 25-60.
- Saad, N. (2014). Tax knowledge, tax complexity and tax compliance: Taxpayers' view. *Procedia-Social and Behavioral Sciences*, 109, 1069-1075.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students* (5th Ed.). Rotolito Lombarda, Italy.
- Sekaran, U. (2003). *Research Methods for Business a Skilling-Building Approach* (4th Ed.). New York: Jhon Wiley and Sons.
- Sondakh, J. J. (2017). Behavioral intention to use e-tax service system: An application of technology acceptance model.
- Soneka, P. N., & Phiri, J. (2019). A Model for Improving E-Tax Systems Adoption in Rural Zambia Based on the TAM Model. *Open Journal of Business and Management*, 7(2), 908-918.
- Ulph, D. T. (2015). *Measuring Tax Complexity*. Kluwer Law International.
- Vaillancourt, F., Roy, M., & Lammam, C. (2015). Measuring tax complexity in Canada. *Fraser Research Bulletin*, 1-10.
- Yong, T. W., Chong, L. M., Looi, P. W. K., See, J. H., & Yew, S. Y. (2015). *Determinants of Demand on Life Insurance in Perak. Comparison between Rural and Urban Areas* (Doctoral dissertation, UTAR).