

Investigating the Determinants Influencing the Tax Administration Efficiency in Pakistan

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Abstract— Governments around the globe are striving for the socio-economic development of their countries and well-being of the people. Revenue generated through tax collection plays an important role in this regard. Tax collection is directly linked with tax administration efficiency. However, many countries especially in developing world are far-lagging behind their optimal capacity of tax collection due to many reasons including tax administration inefficiency. Therefore, it is paramount to investigate the determinants of tax administration efficiency to increase not only the tax volume but also the tax net. This study investigated the determinants and their influence on tax administration efficiency in Pakistan. More specifically, this study investigated the effect of five determinants i.e. autonomy, leadership style, employees' training, employees' motivation and use of ICT on tax administration efficiency. This was achieved through quantitative research by taking sample data from Federal Board of Revenue (FBR) and applying PLS-based SEM to test the proposed model. Five hypotheses were formulated and tested for this purpose. The results revealed that employees' training and employees' motivation positively influenced tax administration efficiency. However, autonomy, leadership style and use of ICT showed no influence on tax administration efficiency in the study environment. The study provides many implications. The FBR officials and policy-makers can use the findings of the study to improve tax administration efficiency in their environment. They can improve their plans and related strategies to increase the tax volume and tax net. Theoretically, this study broadened the scope of the determinants influencing tax administration efficiency. Based on the findings of the study, future research could be conducted to determine and test the other determinants of tax administration efficiency.

Index Terms— tax administration, autonomy, leadership styles, employees' training, employees' motivation, ICT

1 INTRODUCTION

GOVERNMENTS around the world are striving for the well-being of their citizens which is one of the key duties of the government in charge. However, socio-economic development of a country and well-being of its citizens is directly associated with the government's ability to generate revenue. Revenue generation is one of the most challenging tasks for any government. The situation is even worst in developing countries where most of the economy is undocumented. One of the key sources of revenue is the tax collection. Usually, taxes are collected in line with official policies reflecting the country's economic goals. However, tax evasion through various means is a common practice around the globe and Pakistan is no exception. For instance, Gokalp et al. [1] found that the world has been a victim of three trillion U.S. dollars as an annual tax evasion. Moreover, Clarke and Kopczuk [2] revealed that in United States, more than two trillion U.S. dollars has been found to be missing from unreported revenue. They further added that the small businesses and employees found to be responsible for this. Their study estimated that this resulted in a tax breach of 490- 525 billion U.S dollars per annum to the United State economy. In developing countries, the situation is even worst. For example, in Pakistan, a tax evasion of Rs. 76 billions was detected in 2017 resulted into filing 1544 cases by the Federal Board of Revenue (FBR) which is much greater than 2016 data where a tax evasion of Rs. 47 billion was detected resulted into filing 675 cases [3]. Economists agree that tax evasion is much than the report-

ed figured due to un-documented economy of Pakistan. The tax to GDP ratio and net revenue collection by the FBR is shown in Fig. 1 and Fig. 2 respectively.

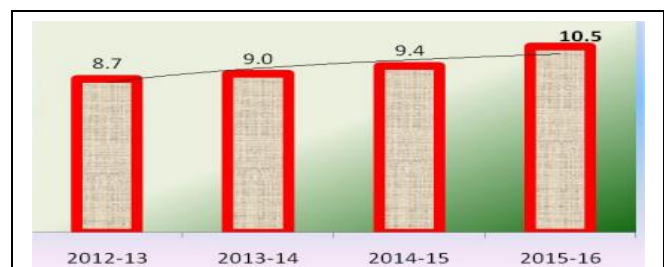


Fig. 1. Tax-GDP ratio of Pakistan [4].

Revenue Heads	FY 2015-16	FY 2014-15	Growth	
			Absolute	(%)
			(Rs. Billion)	
Direct Taxes	1,191.6	1,033.7	157.9	15.3
Sales Tax	1,323.7	1,087.8	235.9	21.7
FED	190.5	162.2	28.3	17.4
Customs	406.2	306.2	100.0	32.6
TOTAL	3,112.0	2,589.9	522.1	20.2

Fig. 1. Net revenue collection FY 2015-16 [4].

Fig. 1 shows that the tax to GDP ratio of Pakistan for FY 2015-16 is 10.5% which is less than the world average and even less than the South Asia average. Fig. 2 shows that the FBR only collected Rs. 3112 billion total revenue with major share of customs, sales tax and imports.

Nevertheless, Pakistani tax administration had been facing tremendous challenges due to various reasons including poor governance, corruption and lack of properly integrated information management system. Moreover, taxes are imposed at different rates. Furthermore, tax rules and regulations are the big hurdles in tax collection. Although many measures and adjustments have been undertaken by the government of Pakistan in the past especially in the recent past to increase the revenue base of the country through taxes by increasing not only the tax rates but also involving many new sectors into the tax net, for envisaged improvement of tax administration efficiency, effective determinants are not yet to be fully realized and implemented for sustainable success. There is still much space for improvement of tax administration efficiency in Pakistan.

Despite having abundant explored and unexplored natural resources, the tax net of Pakistan classically remained narrow. Many sectors remained outside the tax net due to various economical and political reasons. However, in recent years, some new sectors have been brought to the tax net such as real property and banking services etc to broaden the tax net due to which Pakistan achieved their annual tax revenue targets to some extent. This is also enlarged due to some structural reforms on one hand and due to imposing many unfair taxes with irrational rates on the poor people on other hand. Currently, most of the tax base of Pakistan consists of customs and sale taxes [4]. Although, the FBR is achieving the tax targets since many years but these targets are very low as compared to other developing countries even in South Asian countries. There are various reasons of poor tax collection in Pakistan such as poor leadership, lack of employees' training, employees' motivation and ineffective use of ICT, corrupt practices, irrational tax rate, underlying economical and political conditions are some among many others.

Slemrod [5] argued that the tax administration efficiency largely depends on leadership style, employees' training, employees' motivation and use of ICT and some other factors like autonomy of the tax administration department. Moreover, Ogbonna [6] advocated that inadequate infrastructure, lack of training and motivation, incompetent tax administration, inappropriate tax planning and deceptive practices are among the major determinants negatively affecting the tax system. Many prior studies have identified the relationship between various sets and sub-sets of variables such as autonomy, leadership style, employees' training, employees' motivation, use of ICT and productivity of individuals, projects, systems and organizations e.g [7], [8], [9]. However, there is a lack of research in investigating the effect of said determinants on the tax administration efficiency and Pakistan remained even unexplored.

This study has attempted to fulfill this gap by investigating the effect of autonomy leadership style, employees' training, employees' motivation and use of ICT on the tax administra-

tion efficiency in Pakistan. It is reasonable to believe that the improved tax administration efficiency helps to generate more tax revenue which is paramount for the socio-economic development of the country.

This study is one of the endeavors to investigate the determinants influencing the tax administration efficiency in Pakistan. This is achieved by identifying the relevant determinants and developing and formulating a research model and related hypotheses. The research model is then tested statistically by taking the sample data from the FBR Headquarter in Islamabad and applying PLS-based structural equation modeling. This study investigated the following research questions: What influence autonomy has on the tax administration efficiency in Pakistan? What influence leadership style has on the tax administration efficiency in Pakistan? How employees' training influence the tax administration efficiency in Pakistan? To what extent, employees' motivation influences the tax administration efficiency in Pakistan?

2 LITERATURE REVIEW

2.1 Tax Administration Efficiency

Tax administration involves duties and responsibilities of various tax authorities entrusted under the relevant tax laws [10]. A tax administration system involves all the policies and strategies used by the government for planning, imposing, collecting and accounting the taxes and coordinating and monitoring the staff responsible for taxation. Pickering and Rajput [11] defined tax administration efficiency as "government activities, including the provision of public services, rely on taxes collected from citizens and businesses. Government tax administrations perform the important functions of interpreting tax legislation; collecting various taxes and social security contributions; and enforcing tax laws". In this way, tax administration efficiency is an act to collect the taxes in an efficient and just manner. An effective tax administration should be concerned with the employees, taxpayers, regulatory framework, environment and global changes [11].

In order to determine the relative efficiency of tax collection organizations, Alm and Duncan [12] conducted a study based three-step estimation procedure using OECD data. The results revealed that average performance of OECD countries is high but low when compared with non- OECD countries. This shows that tax systems and policies should be designed appropriately and monitored continuously in order to optimize revenue collection. Gatchair [13] advocated that tax administration efficiency needs tax policy reforms, administration reforms, modern and efficient tax processes and competent staff. Slemrod [5] advised that effective HRM policies, essential factors, clear strategy and timeframe lead towards administration efficiency. However, complexity of the tax system and multiplicity of taxes raise the administrative for the government and compliance costs for the taxpayers [14]. Jelil [15] conducted a study of Nigerian tax system and found that corruption, multiplicity of taxes, complexity of tax laws, poor tax administration, underground economy and lack of data are the major factors that negatively influenced the tax system. Moreover, Ogbonna [6] concluded that inequality, inconven-

ience, uncertainty and poor motivation of tax officials are the major failure of the tax administration system.

2.2 Determinants of Tax Administration Efficiency

Werner and Weck-Hannemann [16] suggested five determinants of tax administration efficiency which include autonomy, leadership style, employees' training, employees' motivation and use of ICT. They argued that these determinants play a vital role for enhancing tax administration efficiency. However, Ogbonna [6] proposed six determinants of tax administration inefficiency which include inadequate infrastructure, ad-hoc practices, lack of motivation, lack of training, incompetent tax administration and unsuitable tax planning and ad-hoc practices. Many scholars and researchers applied five determinants suggested by Werner and Weck-Hannemann [16] to investigate the effect of these determinants (individually and/or combined) on tax administration efficiency. For example, Shagari and Lynch [17] used three determinants including autonomy, employees' motivation and use of ICT to test their effect on tax administration efficiency and found that all these three determinants positively correlated with tax administration efficiency. Moreover, Broer [18] investigated the effect of autonomy on tax administration efficiency and found that autonomy has positive effect on tax administration efficiency; Wart [19] found that leadership style has positive effect on organizational administration efficiency including tax administration efficiency, Asencio [20] revealed positive effect of employees' training on tax administration efficiency, Belfield and Marsden [21] found motivation of revenue staff increases their task efficiency which is crucial for organizational efficiency and Efunboade [22] demonstrated that the use of ICT increases revenue. Therefore, five determinants suggested by Werner and Weck-Hannemann [16] are crucial for enhancing tax administration efficiency. Now, the five determinants are discussed in more detail with special focus on their effect on tax administration efficiency.

Autonomy: Allison [23] defined autonomy as "the withdrawal of activities from a governmental organization or the shift of activities inside that organization". It can be seen as organizational power for easier policy making.

Various researchers have investigated the relationship between autonomy and organizational administration and performance. A study conducted by Weske and Schott [24] revealed that autonomy assists in managing inter-organizational relationships. Turkel and Turkel [25] found that there is a high positive correlation between autonomy and administration efficiency. Moreover, the study concluded that autonomy makes decision-making process easier, creates sources of capital, enhances usage of human resources and creates capital for infrastructure. Furthermore, the study revealed that autonomy increases competency and user satisfaction. Another study performed by Wynen and Verhoest [26] tested the impact of autonomy on organizational performance in public sector organizations. The results revealed that autonomy positively affected organizational performance in terms of policy efficiency, freedom, confidence and knowledge about the barriers

to overcome. Broer [18] found that autonomy increases transparency of tax administration in terms of efficiency and effectiveness regarding funds which further reduces corruption. Furthermore, Crandall [27] confirmed that autonomy of tax related organizations increases performance in terms by eliminating problems, improving efficient and effective tax administration and enhancing accountability and transparency.

Leadership: Leadership is considered to be a process through which a manager can direct, guide and influence the performance and behavior of others to achieve the defined objectives and goals. Broadly speaking, it is the ability of a manager to motivate the subordinates into the work with confidence and zeal. Leaders are vital for developing the vision of the organization and motivating organizational members to achieve this vision. Bohn [28] defined leadership as "leadership is the ability to persuade others to seek defined objectives enthusiastically. It is the human factor which binds a group together and to improve their performance and to direct them towards goals". As for leadership styles are concerned, Keskes [29] discussed three leadership styles: autocratic, democratic and participative, depending on the authority and decision-making power shared among leaders and subordinates. The autocratic style is based on "I tell" philosophy. With this style, leaders tell the subordinates what to do and the ignore input from them. However, this style is suitable in some situations when the organization is in , crisis and need some immediate action. The democratic style is based on "I share" philosophy. With this style, leaders make decisions through teams where input by every subordinate carries equal weight. Participative style deals with involving all the subordinates to identify goals and formulating strategies to achieve these goals. In participative style, the role of the leader is like a facilitator instead of issuing orders and making assignments. This style is most common in business settings and volunteer organizations. This style is also seen as favorable for creating additional leaders in the organizations. Hambley et al. [30] described two types of leadership styles: transformational leadership and transactional leadership. Transformational leadership style focuses on the development of subordinates and their needs. It emphasizes on the growth and development of the value system of employees, their moralities and inspirational level. Transactional leadership style is based on employees' compensation for meeting specific goals. In this way, it is trades between the leader and subordinates.

In the discipline of public management, various researchers have examined the various leadership styles. For example, Wart [19] performed a literature review on leadership styles. The findings of the study revealed that the internal conflict creates sharp problem in administration efficiency in public sector organizations. Moreover, administration efficiency can be improved by inter-connecting mission, public services and intrinsic rewards [19]. Therefore, leadership style bears a big responsibility towards organizational performance.

Employees' Training: Training is a learning process that impacts on knowledge and skills of the employees and enables the employees to perform their tasks better [31]. Training helps

the employees to gain new knowledge and information related to new technological know-how and other emerging concepts in a particular field. Shen [32] argued that investment in training the employees for teamwork, decision-making and interpersonal relationship results in employees' productivity and performance which ultimately lead towards organizational performance. Training opportunities improves individual performance and organizational commitment among workers [33]. Training methods should be according to its purpose, nature of tasks and levels of employees. The effectiveness of a training program should be evaluated so that further improvements can be incorporated from time to time.

Many studies have investigated the effect of employees' training on employees' productivity and/or performance and organizational productivity and/or performance in private and public sector organizations. Gintis [34] found that technical training has positive effect on productivity and learning of employees. Bishop [35] established a positive relationship between employees' education and employees' productivity. Furthermore, Barrett and O'Connell [36] revealed a significant relationship between employees' training and employees' productivity. A study conducted by Asencio [20] in the perspective of public sector administration found that by improving the employees' skills, the employees' productivity in terms of provision of services to the citizens can be increased. The study also revealed that untrained employees spent six times more time to perform a same task in contrast to the trained employees. The study suggested that the trained employees of public sector organizations like tax administration perform their tasks more efficiently in time which reduces the need to hire more employees. A study conducted by Ely and Calabrese [37] revealed that by increasing employees' training 10%, the effect of productivity is 5.9% and 4.9% in public sector organizations and in private organizations respectively. Similarly, Bishop [35] proved that the organizations which provide training to their employees achieve approximately 16% increase in productivity.

Employees' Motivation: Malhotra [38] defined motivation as "psychological processes that cause the arousal, direction and persistence of behavior". In the lives of the organizations, motivation plays a crucial role to escalate the morale of employees and individual, team and organizational level performance. Motivated employees performed better than unmotivated employees in an organizational system. Various employees are motivated through various strategies which may vary from employee to employee, place to place and organization to organization. Employees may get motivated by cash, rewards, encouragement, appreciation and/or respect etc. Various researchers have studied the impact of employees' motivation on individual performance and/or organizational performance. Here is a brief description of some of previous studies.

Muogbo [39] conducted a study to investigate the relationship between employees' motivation and organizational performance in manufacturing industry using descriptive research design. The results revealed that a positive relationship existed between employees' motivation and organizational

performance. More specifically, the extrinsic motivation increases organizational performance in terms of efficiency and productivity. Another study performed by Dobre [40] investigated the effect of motivational factors on organizational performance. The results revealed that empowerment and appreciation of employees positively correlated with organizational performance. Moreover, empowerment and involvement of employees positively correlated with efficiency, growth and innovation. According to the study of Solomon et al. [41], organizations should harmonize continuous improvement in order to increase employee motivation. Likewise, a study was performed by Belfield and Marsden [21] in Inland Revenue staff to investigate the relationship between motivation and performance of the employees. The findings of the study concluded that employees' motivation improve the efficiency and effectiveness of the tasks. Moreover, competent and motivated employees are vital to enhance service delivery and improve organizational productivity.

Information and Communication Technology (ICT): Gatchair [13] defined ICT as "all forms of technology applied to the processing, storing and transmitting information in electronic form; stressing that the physical equipment used for this purpose include computers, communication equipment and networks; fax machines and electronic, pocket calculator". It can be used to improve the text administration efficiency by minimizing human errors and processing time, assuring readily available data for the taxation personnel, increasing voluntary compliance to reduce tax evasion and promoting better decision making. The use of ICT helps in maintaining reliable records, quick processing and timely access to required data [9].

A study conducted by Oluwafemi [42] revealed that the use of ICT greatly affects employees' productivity. Another study conducted in South Africa banking industry concluded that the use of ICT enhances return on investments and return on assets [43]. Moreover, Efunboade [22] found that the use of ICT increases the internally generated revenue, compliance, productivity and economic development. He further added that the ICT is change agent for poverty reduction and growth in developing countries. There is a positive association between the use of ICT and tax administration efficiency [17]. The use of IT enhances innovation, efficient practices, productivity and performance of the public sector organizations [44]. Moreover, the use of ICT and other electronic gadgets improves the administration efficiency, service delivery, confidence and trust of the customers and transparency of the government organizations [45].

3 RESEARCH MODEL

Based on the literature review, a research model has been developed to investigate the influence of the five determinants of tax administration efficiency i.e. autonomy, leadership style, employees' training, employees' motivation and the use of ICT on tax administration efficiency. The research model is shown in Fig 3. The tax administration efficiency is treated as dependent variable whereas autonomy, leadership style, employees' training, employees' motivation and the use of ICT

are treated as independent variables. It is reasonable to believe that the independent variables have positive significant influence on the dependent variable.

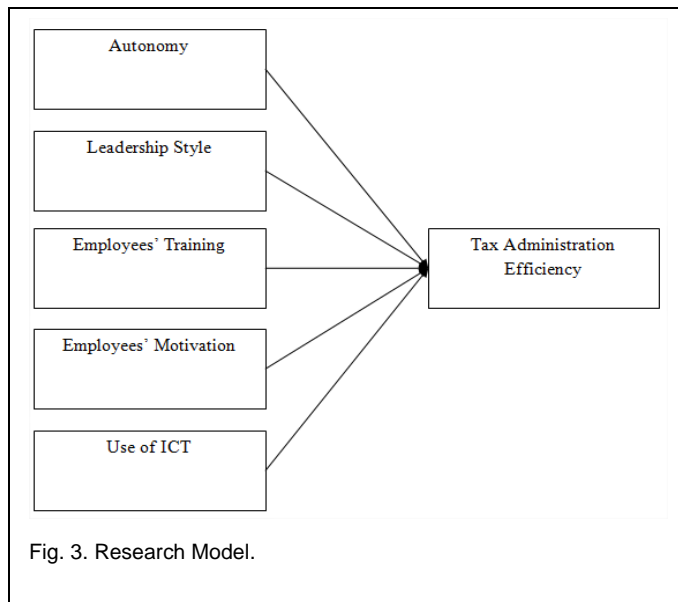


Fig. 3. Research Model.

3.1 Dependent Variable

Tax Administration Efficiency: It is the dependent variable in this study. Tax administration can be defined as all government organizations involving in the tax policy formulation and implementation in the country [46]. This provides improved services to citizens including people, businesses and employees while reducing the cost at the same time [9]. An efficient tax administration is necessary for the economic growth and development of a country because it encourages the capitalists and investors, lessen poverty and enhances growth in all sectors of economy. Gupta [10] argued that the tax administration efficiency helps government to increase tax revenue by applying lower tax rates. An efficient tax administration is vital to ensure compliance to the tax policies more successfully. According Pickering and Rajput [11], an effective tax administration is a combination of employees, taxpayers, regulatory framework and environment along with global changes. According to Slemrod [5], in order to obtain desired results, efficiency and effectiveness should be the slogan while outlining the tax administration arrangements.

3.2 Independent variables

Autonomy: Many researchers have investigated the relationship between autonomy and organizational performance, administration and tax administration efficiency and found that there existed a positive relationship between these variables e.g [15], [25]. Autonomy authorizes executives to exercise more control over budgeting, procurement and personnel to management the tax organization effectively and efficiently [10]. Thus, this leads towards the following hypothesis:

H1: The degree to which autonomy is provided to the tax ad-

ministration agency positively influences tax administration efficiency.

Leadership Style: Various studies have investigated the role of leadership in terms of leadership style to motivate the employees to achieve the objectives of organizations. There is almost consensus among researchers in the literature that the leaders, managers and supervisors play a vital role to boost the morale of the employees in various organizational settings. Many studies have revealed a positive association between leadership style and organizational administration efficiency e.g [19], [47]; [48]. Wart [19] concluded that leadership style is vital for the progress and development of organizations. Hence, the following hypothesis can be formulated.

H2: The degree to which leadership style is appropriate positively influences tax administration efficiency.

Employees' Training: A number of studies have found the positive relationship between training and efficiency of various administrative organizations e.g [8], [35] and tax organizations are not exceptional. The study of Bishop [35] revealed that the trained employees were 16% more productive than untrained employees. Bercu [8] found that training provides benefits to the all stakeholders involved in the organization. Therefore, it is reasonable to formulate the following hypothesis:

H3: The degree to which employees' training is provided positively influences tax administration efficiency.

Employees' Motivation: Various researchers have investigated the association between employees' motivation and organizational administration efficiency in various settings and revealed that there existed a positive relationship between these variables e.g [21], [40]; [41]. On the basis of the aforesaid arguments, the following hypothesis is formulated:

H4: The degree to which employees are motivated positively influences tax administration efficiency.

Use of ICT: According to the study of Oseni [9] in the public sector, the use of ICT enables innovation, increases productivity and improves overall performance. Moreover, Blair [49] revealed that the use ICT enhances service delivery and increases administration efficiency of the government organizations. Furthermore, Idisemi and Ann [50] described that the use of ICT facilitates effective and efficient communication regardless of time and distance, assist organizations to manage data efficiently, reduces costs and saves time and helps organizations to generate accurate financial information for effective decision-making. Therefore, the following hypothesis is formulated.

H5: The degree to which the ICT is used positively influences tax administration efficiency.

4 RESEARCH METHODOLOGY

4.1 Research Design and Method

The study used quantitative research design in order to investigate the influence of the selected determinants on the tax administration efficiency in Pakistan. Due to the nature of the research questions, survey research method was adopted in order to answer the research questions. Survey research method selects a sample from a population and generalizes the results back to the population.

4.2 Population and Sample

This study is limited to FBR Headquarter Islamabad. The sampling frame was the employees' directories at FBR Headquarter Islamabad which provided the names and contacts of the employees. The minimum sample size was calculated based on the guidelines provided by Marcoulides and Saunders [51] which was found to be 65. However, for safe side, the researchers distributed 150 questionnaires among the respondents while predicting a response rate of 50 percent. The respondents were mainly inspectors, field officers and administrative staff related to tax collection and related matters. The data collection process started in July, 2017 and terminated in August 2017.

4.3 Data Collection Technique

Data can be collected through interviews, survey questionnaires and focus groups depending on the research design and research method of the study [52]. However, this study used survey questionnaires to collect relevant and meaningful data. Survey questionnaires are also considered as a more effective technique for reaching to more respondents in an economic way to get large amount of data. Sekaran and Bougie [53] advocated that the survey questionnaires are a way to achieve self-reporting information regarding the ideas, opinions, behaviors and other characteristics of a population. A questionnaire was designed to collect relevant and meaningful data for the said variables. The items of the questionnaire were adopted from the prior literature. The adopted items were slightly modified according to the context of the study with the consultation of two experts in FBR. The questionnaire consisted of two sections. Section A contained information about the respondents profile whereas Section B contained information to assess variables.

4.4 Measurements

Items of the questionnaire were adopted from the previous studies and slightly modified after consulting the two experts in FBR. The items for the scale of tax administration efficiency were adopted from Abiola and Asiweh [46] and assessed on five point Likert scale ranged from "1=Strongly Disagree" to "5=Strongly Agree". The scale consists of four items. The items for the scale of autonomy were also borrowed from [46] and measured on five point Likert scale ranged from "1=Strongly Disagree" to "5=Strongly Agree". The scale contains four items. The items for the scale of leadership style were adopted from Ogbonna [6] and measured on five point Likert scale ranged from "1=Strongly Disagree" to "5=Strongly Agree". The scale

contains four items. The items for the scale of employees' training were adopted from Bishop [35] and assessed on five point Likert scale ranged from "1=Strongly Disagree" to "5=Strongly Agree". The scale comprises four items. The items for the scale of employees' motivation were adopted from Wright et al. [48] and assessed on five point Likert scale ranged from "1=Strongly Disagree" to "5=Strongly Agree". The scale has four items. The items for the scale of use of ICT were adopted from Upadhyaya [54] and assessed on five point Likert scale ranged from "1=Strongly Disagree" to "5=Strongly Agree". The scale contains four items.

4.5 Data Analysis Approach

The collected data was analyzed using PLS-based structural equation modeling. Specifically, Smart PLS software (v. 3.2.7) was used. Multiple regression modeling was applied to analyze the data after conducting reliability test, multicollinearity test, variance inflation, descriptive statistics and Pearson correlation. The results are reported in next section.

5 RESULTS

5.1 Sample Characteristics

A total of 96 completely filled valid questionnaires were returned by the respondents. This included all the questionnaires returned after issuing the two reminders to the respondents in addition to the initial request. In this way, the response rate was 64 percent. The sample characteristics are shown in Table 1. The sample characteristics show that the majority of the respondents (54.16%) belonged to the field officers followed by the inspectors (29.17%) and administrative staff (16.67%). As for as the experience of the respondents was concerned, the average (median) experience of the respondents was 8 years which is considered suitable to provide meaningful information about a particular subject and phenomenon under a respondent' domain. With respect to the academic qualification, 68 were master degree holders, 20 were bachelor degree holders and 8 were below bachelor degrees which were mainly selected due to their experience in the FBR's tax collection related matters. In terms of age, no respondent was below 25 years of age, 12 were between 25 and 30 years of age, 55 were between 31 and 40 years of age and 25 were between 41 and 50 years of age. However, only 4 respondents were above 50 years of age. In this way, majority of the respondents were between 30 to 40 years of age. As for as, the gender of the respondents was concerned, 84 were male whereas 12 were female respondents. In this way, the sample characteristics clearly show that the respondents demonstrated a representative sample for this study. Moreover, a sample of 96 is considered to be appropriated for PLS-based SEM which is specially designed for analysis of small samples even when the data is non-normally distributed [55].

TABLE 1
SAMPLE CHARACTERISTICS

	Frequency	Percentage
<i>Role in organization (n=96)</i>		
Inspectors	28	29.17
Field Officers	52	54.16
Administrative Staff	16	16.67
<i>Experience</i>		
Median		
Experience (in years)	8	
<i>Qualification</i>		
Master degree	68	
Bachelor degree	20	
Others	8	
<i>Age (in years)</i>		
Below 25	0	
25 to 30	12	
31 to 40	55	
40 to 50	25	
Above 50	4	
<i>Gender</i>		
Male	84	
Female	12	

5.2 Testing the Measurement Model

Measurement model also known as outer model is tested through convergent validity and discriminant validity. Convergent validity is assured through Cronbach's alpha coefficient, rho_A, composite reliability and average variance extracted (AVE). The detailed results generated by Smart PLS are shown in Table 2. The results show that the Cronbach's alpha coefficient is greater than the required value of 0.7, the rho_A of is greater than the minimum threshold of 0.7, the composite reliability is above 0.5 and the AVE of all the constructs is above the minimum required limit of 0.7. Therefore, convergent validity has been established in this study.

Discriminant validity is assured in two ways. The first method is provided by Gefen and Straub [56] in which items loading are checked on its own constructs and on other constructs. Discriminant validity is established when items loading on its own construct is equal to or greater than loading on other constructs. The results of Table 3 show that items loading on its own construct are greater than other constructs. The other method is suggested by Fornell and Larcker [57] in which square root of AVE between constructs and its measures are checked. Discriminant validity is established when square root of AVE between constructs and its measures is equal to or greater than the other constructs. PLS output for testing the discriminant validity is shown in Table 4. The results show that the square root of AVE (shown by bold) between constructs and its measures is greater than the other constructs. Therefore, discriminant validity has also been established in this study.

TABLE 2
CONVERGENT VALIDITY

Latent construct	Indicators	Outer loading	Cronbach's Alpha	rho_A	CR	AVE
AUT (4-items)	AUT1	0.794	0.845	0.902	0.892	0.677
	AUT2	0.869				
	AUT3	0.892				
	AUT4	0.820				
LS (4-items)	LS1	0.867	0.874	0.912	0.901	0.721
	LS2	0.860				
	LS3	0.863				
	LS4	0.806				
ET (4-items)	ET1	0.713	0.901	0.933	0.939	0.778
	ET2	0.966				
	ET3	0.939				
	ET4	0.888				
EM (4-items)	EM1	0.704	0.854	0.877	0.903	0.701
	EM2	0.887				
	EM3	0.827				
	EM4	0.914				
UIT (4-items)	UIT1	0.763	0.823	0.875	0.895	0.639
	UIT2	0.830				
	UIT3	0.858				
	UIT4	0.832				
TAE (4-items)	TAE1	0.862	0.912	0.938	0.874	0.791
	TAE2	0.928				
	TAE3	0.871				
	TAE4	0.894				

5.3 Testing the Structural Model

Structural model also known as inner model is used to test hypotheses. Two measures are used to test structural model which are variance (R²) and path coefficient strength (β) and their significance (t-values). Five hypotheses were tested using structural model. Tax administration efficiency (TAE) was the dependent variable and autonomy (AUT), leadership style (LS), employees' training (ET), employees' motivation (EM) and the use of ICT (UIT) were the independent variables. The results of Table 5 show that 73.7 percent variance in tax administration efficiency (TAE) can be explained by the autonomy (AUT), leadership style (LS), employees' training (ET), employees' motivation (EM) and the use of ICT (UIT) which is above the minimum threshold of 50 percent [58].

The path coefficient strength (β) and significance (t-values) of all the construct are shown in Table 6. The results indicate that autonomy (AUT) has path coefficient strength of 0.121, leadership style (LS) has path coefficient strength of 0.055, employees' training (ET) has path coefficient strength of 0.487, employees' motivation (EM) has path coefficient strength of 0.327 and the use of ICT (UIT) has path coefficient strength of 0.129.

Their corresponding significance (t-values) is also shown. The result indicate that employees' training showed the greatest positive effect on tax administration efficiency ($\beta = 0.487, t = 3.509$) followed by the employees' motivation ($\beta = 0.327, t = 2.511$). These effects are also significant ($t > 1.96$ at 5% significant level). Therefore, hypotheses H3 and H4 were supported. However, use of ICT showed weak effect on tax administration efficiency ($\beta = 0.129, t = 1.713$) followed by autonomy ($\beta = 0.121, t = 1.428$) and these effects were not significant as well ($t < 1.96$ at 5% significant level). Therefore, hypotheses H1 and H5 were not supported. Similarly, leadership style showed no effect on tax administration efficiency ($\beta = 0.055, t = 0.593$). Therefore, hypotheses H2 was not supported at all. In conclusion, two hypotheses were supported and three were not supported in the study environment..

TABLE 3
CROSS LOADING

	AUT	EM	ET	LS	TAE	UIT
AUT1	0.794	0.109	0.106	0.400	0.206	0.371
AUT2	0.869	0.013	0.197	0.713	0.225	0.541
AUT3	0.892	0.027	0.178	0.779	0.265	0.523
AUT4	0.820	0.077	0.255	0.557	0.394	0.244
EM1	0.152	0.704	0.484	0.032	0.559	0.303
EM2	0.033	0.887	0.622	0.039	0.613	0.132
EM3	0.106	0.827	0.615	0.043	0.487	0.014
EM4	0.058	0.914	0.720	0.106	0.729	0.318
ET1	0.159	0.545	0.713	0.001	0.522	0.214
ET2	0.253	0.736	0.966	0.150	0.795	0.291
ET3	0.191	0.726	0.939	0.086	0.728	0.160
ET4	0.227	0.574	0.888	0.163	0.727	0.222
LS1	0.584	0.105	0.145	0.867	0.239	0.449
LS2	0.758	0.030	0.038	0.860	0.213	0.492
LS3	0.635	0.119	0.156	0.863	0.321	0.489
LS4	0.552	0.001	0.031	0.806	0.175	0.244
TAE1	0.385	0.566	0.601	0.304	0.862	0.498
TAE2	0.412	0.689	0.765	0.277	0.928	0.428
TAE3	0.133	0.758	0.766	0.127	0.871	0.203
TAE4	0.335	0.553	0.682	0.341	0.894	0.363
UIT1	0.497	0.043	0.033	0.635	0.127	0.763
UIT2	0.396	0.122	0.151	0.480	0.300	0.830
UIT3	0.269	0.287	0.278	0.305	0.362	0.858
UIT4	0.475	0.254	0.237	0.407	0.420	0.832

TABLE 4
INTER-CORRELATION OF CONSTRUCTS AND THE CORRESPONDING SQUARE ROOT OF AVE

	AUT	EM	ET	LS	TAE	UIT
AUT	0.823					
EM	0.047	0.837				
ET	0.238	0.735	0.882			
LS	0.744	0.070	0.121	0.849		
TAE	0.355	0.726	0.795	0.292	0.889	
UIT	0.482	0.243	0.252	0.509	0.417	0.799

TABLE 5
VARIANCE R²

	R Square	R Square Adjusted
TAE	0.737	0.722

TABLE 6
STRENGTHS AND SIGNIFICANCE OF PATH COEFFICIENTS

Tax administration efficiency (R ² = 0.737)			
Constructs	Path coefficient (β)	t-values (t)	Hypothesis Support
AUT → TAE	0.121	1.428	Not supported
LS → TAE	0.055	0.593	Not Supported
ET → TAE	0.487	3.509	Supported
EM → TAE	0.327	2.511	Supported
UIT → TAE	0.129	1.713	Not supported

5.4 Discussion

After the data analysis, it was found that two hypotheses H3 and H4 were supported and three hypotheses H1, H2 and H5 were not supported in the study environment. The hypothesis H3 was "the degree to which employees' training is provided positively affects tax administration efficiency" provided the most positive support for the tax administration efficiency among all the other hypotheses. This shows that employees' training is the most vital determinant influencing the tax administration efficiency in FBR. One possible reason might be the fact that when employees related to tax administration

matters are properly trained then their ability and exposure to collect revenue is enhanced due to the proper understanding of tax laws and rules and regulations. Properly trained employees are considered to be the asset of any organization and tax department or agencies are no exception. In Pakistan, the poor training of tax administration staff in the history had been remaining the big hurdle in increasing tax revenue and expanding tax base in the country. Now, FBR has developed a formal system of employees' training which has created a visible difference on employees' performance. Trained employees are more productive than un-trained employees. Therefore, to increase the tax administration efficiency for achieving the goals of revenue collection, training of the employees must be conducted after regular intervals. This was also supported by the study of Bercu [8] who found that employees' training is a vital determinant of tax administration efficiency.

The hypothesis H4 was "the degree to which employees are motivated positively affects tax administration efficiency" also demonstrated positive support for the tax administration efficiency. It means employees' motivation is also crucial to enhance the tax administration efficiency in FBR. Employees' motivation has already been proved to be an important determinant for their increased performance in various settings including tax administration efficiency [59]. When employees are motivated with intrinsic rewards or by some other means, they put their utmost effort on the job tasks. Many researchers have provided various methods of employees' motivation in the organizations including appreciation, monetary or non-monetary rewards. FBR has already developed a formal system for motivating and rewarding the employees based on their performance and revenue collection.

The hypothesis H1 which was "the degree to which autonomy is provided to the tax administration agency positively affects tax administration efficiency" showed no support for the tax administration efficiency in the study environment. This was the contradictory result of this study. One possible reason might be that FBR is still under very much control of Ministry of Finance. Although, it is an autonomous department in many of its activities as per law but political intervention through wrong appointments and other means has been influencing the autonomy of the department and hence resulted into tax administration inefficiency.

The hypothesis H2 also provided no support for the tax administration efficiency in the study environment which state "the degree to which leadership style is appropriate positively affects tax administration efficiency". This was the surprising result of this study. This determinant found to be the least effective in the study organization. This is the weakness FBR. Effective leadership practices and skills must be exercised by FBR to increase its tax administration efficiency.

The hypothesis H5 which stated that "the degree to which the ICT is used positively affects tax administration efficiency" demonstrated no support for tax administration efficiency in FBR. However, many previous studies have revealed that the use of ICT positively correlated with the tax administration efficiency [9]. Among many other reasons, one possible reason might be the fact that the use of ICT needs related training and FBR is still weak in the use of ICT because very few services

are computerized and many are still manual. The other possible reason might be the fact that the use of ICT may have interaction (moderating) effective itself or with other variable on the tax administration efficiency.

In conclusion, all the proposed hypotheses were not supported in the context of this study. Employees' training and their motivations proved to be the effective determinants of tax administration efficiency. It does not mean that the other determinants should be ignored at all. They may have interaction effect with other determinant on the tax administration efficiency. However, dealing with interaction effective was out of the scope of this study.

6 CONCLUSION

This study was aimed to investigate the determinants influencing the tax administration efficiency in Pakistan. The purpose was to improve the tax administration efficiency in Pakistan. After an extensive literature review, it was found that five determinants positively influence the tax administration efficiency in various countries and settings. These determinants include autonomy of the tax administration department or agency, leadership style, employees' training, employees' motivation and the use of ICT. Therefore, these five determinants were selected for this study. A research was developed based on these determinants and hypotheses were formulated with support from the relevant literature. The statistical effect of the aforesaid determinants was tested and analyzed on the tax administration efficiency after collecting data from FBR Headquarter Islamabad. PLS-based SEM was applied for this purpose. Especially, Smart PLS (v. 3.2.7) was used due to its simplicity and ease of use. A total of five hypotheses were tested and analyzes in this study.

The results of the study revealed that employees' training and employees' motivation demonstrated positive influence on the tax administration efficiency in the study environment. However, autonomy, leadership style and use of ICT showed no significant influence on the tax administration efficiency. The determinants with the strongest influence is employees' training followed by the employees' motivation. This shows the importance of the employees' training and motivation in this environment. It means tax administration efficiency mainly deals with human related determinants instead of technical determinants. This also supports the fundamental theories of human resource management literature which emphasize that human related determinants play a vital role in employees' productivity, performance and ultimately, organizational growth and performance. The other determinants which have not been supported in this study could not be ignored at all. These determinants might be vital in the sense that these may have interaction (moderating) effect on the tax administration efficiency. However, testing and analyzing the interaction effect was outside the scope of this study.

This study sheds light on investigating the determinants influencing the tax administration efficiency in a developing country where there is a culture of tax evasion. Therefore, the study is contextualized in nature. However, countries operating in different contexts may have different determinants. Therefore,

the findings of the study should be treated carefully. The findings should be replicated to the countries operating in the contexts which are similar to the study context i.e. Pakistan. The study possesses value in the sense that it determines the determinants which improves the tax administration efficiency. Improved tax administration efficiency increases the revenue collection through taxes. Higher revenue collection is paramount for the socio-economic development of a country and living standard of its people.

The study also possesses some limitations which are important to mention at this stage. First, the sample size is limited in terms of one location of FBR i.e. Headquarter at Islamabad. Second, only the quantitative opinion of the respondents was sought through closed-ended questions. Third, the moderating effect of some other determinants was not considered in this study. Future researchers can fill these gaps. They can include more locations of FBR throughout the country. Moreover, they can gain in-depth insights by taking the qualitative opinions of the respondents which would provide more comprehensive picture of the phenomenon under investigation. Furthermore; the future researchers can investigate the moderating effect of other variables on the relationships between the proposed determinants and the tax administration efficiency.

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