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INVESTIGATING THE NEXUS BETWEEN THE ATTITUDE TOWARD ELECTRONIC TAX SYSTEM AND THE LEVEL OF TAX COMPLIANCE- A MEDIATION ANALYSIS

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Abstract
Tax compliance remains a significant challenge in Pakistan, particularly among small business enterprises (SBEs). This study explores the role of attitudes toward electronic tax systems (ETS) in fostering tax compliance, with the adoption of ETS as a mediating factor. Utilizing a quantitative research approach, data was collected from 204 taxpayers using a structured questionnaire. Findings reveal that a positive attitude towards ETS significantly influences its adoption and subsequent compliance behavior. Moreover, ETS adoption mediates the relationship between attitudes and compliance, underscoring the importance of digital transformation in taxation. The study highlights the need for tax authorities to enhance taxpayer awareness, improve digital infrastructure, and streamline e-taxation services to promote compliance. Policy recommendations include targeted training programs, simplification of tax procedures, and security enhancements in digital tax platforms to boost trust and engagement. These findings contribute to the literature on tax compliance in developing economies and provide actionable insights for improving fiscal governance in Pakistan.

INTRODUCTION

Pakistan, like many developing countries, confronts considerable challenges in raising enough money to pay for public services, infrastructure projects, and social welfare programs. Tax compliance, or the extent to which people follow tax rules and regulations, has long been an issue in Pakistan's economic environment. Low levels of compliance can be attributed to extensive tax evasion, a strong informal sector, complicated tax arrangements, insufficient enforcement procedures, and trust deficits between taxpayers and tax officials. The views regarding taxation play a significant effect in determining compliance behavior. Socioeconomic considerations, cultural norms, views of justice, faith in government institutions, and the efficacy of tax laws and administration all have an impact on public attitudes. Understanding the subtleties of these attitudes is critical for developing successful tax laws, communication methods, and enforcement tools to increase compliance.

Furthermore, the use of e-tax systems has emerged as a viable way to improve tax compliance and administrative efficiency. E-tax systems use information technology to speed tax operations, allow for online filing and payment, increase transparency, and limit the potential for tax evasion and corruption. Pakistan's government has begun attempts to digitize tax administration by

implementing electronic filing and payment systems such as the Integrated Tax Management System (ITMS) and the Electronic Filing and Payment System.

Promoting tax compliance is crucial for the government's ability to provide public services and redistribute wealth effectively, as emphasized by Rahman in 2017. To enhance the government's capacity to efficiently deliver public services and redistribute wealth, taxpayers must adhere to their tax responsibilities by promptly paying the correct amount of taxes (Alhempi, et al., 2020). As a consequence of economic crises witnessed in numerous nations, including the late 1990s Asian financial crisis, the importance of adhering to tax regulations has significantly heightened within the global economic context (Ritsatos, 2014). Tax revenue is pivotal in underpinning economic expansion and financing both social programs and infrastructure investments (Sahoo, et al, 2010). Osundina and Olanrewaju (2013) assert that taxation, encompassing the imposition and administration of taxes, plays a pivotal role in all societies worldwide. It offers governments a means to generate essential revenue required to meet their immediate obligations. Tax revenues function as the financial foundation empowering governments to partake in development initiatives, combat poverty, deliver vital public services, and build the necessary physical and social infrastructure to facilitate sustainable economic growth (OECD, 2010). Therefore, the government primarily relies on the collection of tax revenues from all economic entities as underscored by Ndekwa (2014) to fund public services. Of these economic entities, small business enterprises (SBEs) are a significant prospect for generating revenues for the government. According to the data of 2022, agriculture offered approximately 22 percent of the total employment. 35 percent of the GDP of Pakistan was from the industrial sector while 20 percent of the GDP was from the industrial sector. 42 percent while the services sector contributed more than half of the GDP. However, studies have shown that non-compliance with tax laws persists as a big problem among small business entities (Newman, et al., 2018). Although taxation is important and the implementation of tax education and online tax services, non-tax compliance remains a problem as highlighted by Nawawi and Salin (2018). This has in turn made scholars focus on identifying the causes of non-compliance behavior within organizations (Nawani & Salin 2018). Nawawi and Salin (2018) also noted that in the absence of mechanisms put in place by the tax authorities to discourage noncompliance, there is a high tendency of evasion.

Implementing e-taxation and compliance with tax legislation is one of the crucial pillars of economic globalization and fiscal regulation strategies. To understand the nature of tax compliance attitudes and the e-tax systems adoption in the context of Pakistan, a country that faces numerous socioeconomic challenges, it is necessary to consider the following. This introduction explains why these concerns are relevant and provides the background for the subsequent studies by providing an overview of the history of the research on tax compliance and attitude as well as the e-tax in Pakistan.

Last but not least, the studies on tax compliance attitudes and e-tax adoption in Pakistan are important to address the challenges of revenue mobilization, fiscal accountability, and growth. The study's contribution to the understanding of tax compliance behavior and e-tax uptake will assist in the formulation of policies, changes in institutional frameworks, and capacity-building initiatives towards improving fiscal governance and sustainable development in Pakistan. There is limited previous research that has investigated the impact of attitudes towards the E-tax system on the adoption of electronic tax systems and tax compliance particularly in the context of SBEs of the developing Asian country, Pakistan. By employing data collected from Pakistan, this study seeks to fill this research gap.

In this context, the research on tax compliance attitudes and the e-tax in Pakistan is useful for policymakers, tax administrators, researchers, and other relevant individuals. The research will provide an understanding of the factors that influence compliance in Pakistan by identifying the variables that affect tax compliance behavior including attitude towards taxation, socio-economic factors, institutional factors, and the influence of e-tax systems. Moreover, the evaluation of the attitudes toward and acceptance of e-tax systems can help to

understand the effectiveness of digital strategies in enhancing the level of tax compliance and administrative performance. The difficulties, opportunities, and best practices for the adoption of e-tax systems identified in the study will be useful for policymakers to advance digital transformation and enhance the outcomes of revenue collection.

Literature Review

Nkwe (2013) opened that the perception that a person holds towards taxes may go a long way in determining his or her level of compliance in Botswana. Also, the willingness of people to accept an electronic tax system is another important consideration that determines whether or not people accept it. Barati et al. (2014) have also noted that the implementation of electronic tax systems is driven by positive evaluation that include the time and place convenience of filing taxes and the number of trips made to the tax authority offices leading to better compliance among the taxpayers. Attitude can be defined as a consistent way of thinking or feeling about a person, situation, or thing, which is often shown through one's behavior. It includes a person's beliefs, emotions, and reactions, influencing how they view and engage with different aspects of life. Attitude toward the e-tax system is influenced by several factors that, in turn, affect tax compliance (Do et al. 2022). The term attitude toward the Electronic Tax System (ETS) describes people's thoughts, feelings, and opinions on using digital platforms and technology for tax-related purposes. It contains a range of components, including general openness to using e-tax systems, simplicity of use, advantages, disadvantages, and perceived utility. The behavior of a taxpayer is influenced by attitudes about electronic taxation, including plans to use electronic filing and payment systems, adherence to statutory requirements, and satisfaction with the way taxes are administered.

Adoption in the context of an e-tax system refers to the transition to and incorporation of electronic platforms for tax filing and management. This shift involves switching from old paper-based techniques to digital systems for submitting returns, managing tax information, and processing payments. The purpose of implementing an e-tax system is to increase efficiency, accuracy, and convenience in tax administration for both taxpayers and tax officials (Night, S., & Bananuka, J. 2020). Al-Hujran's 2015 explored the variables impacting Jordan's adoption of e-tax filing in his study. His study shows a positive correlation between the view of people regarding e-tax and their perceptions of the risks, beliefs, and advantages (Al-Hujran, et al., 2015). Those people who thought they would be convenient, accurate, and save time were among those who adopted the e-tax system. Adoption was also greatly aided by faith in the security and privacy of electronic platforms as well as in government agencies. On the other hand, people were discouraged from using e-tax systems due to perceived threats such as technology malfunctions, data breaches, and identity theft.

The process through which the taxpayers and tax authorities embrace and use digital platforms and technology for tax administration is called electronic tax adoption, or e-tax. It involves using electronic tools and systems for tasks such as paying taxes, filing returns, interacting with tax authorities, and accessing tax-related services and information. The adoption of electronic taxation, or e-tax, represents a shift from traditional paper-based tax processes to a more digitized and automated approach to managing and complying with tax regulations.

Barati's 2014 study examined the factors influencing Malaysian taxpayers' attitudes toward the adoption of e-tax. The results indicated that while most respondents viewed e-tax positively, its adoption was significantly hindered by concerns over data security and privacy. Furthermore, the study demonstrated that key factors driving the willingness to adopt e-tax systems were the perceived usefulness and ease of use. This highlights the importance of addressing both the perceived benefits and potential risks when promoting the adoption of e-tax systems. In summary, to effectively promote the use of electronic tax systems and enhance tax compliance, it is essential to understand people's attitudes toward e-tax and address the factors that influence adoption.

Tax compliance means following tax laws and regulations by accurately reporting income, expenses, and other financial information to the appropriate tax authorities. This includes filing tax returns on time and paying the correct amount of taxes (Taing, et al. 2021). Businesses pay taxes because the government has the power to return these funds to

them through credit, other financing sources, public goods, and services. Governments use the money they collect from taxes to fund the expansion of businesses. As a result, it boosts economic activity nationwide, which eventually results in the growth and development of the economy. Only 5% of all taxes are contributed by the provincial governments; the majority, 95%, are collected by the federal government. Pakistan has one of the lowest taxes to GDP (gross domestic product) ratios among developing nations, at 11.4%. However, due to a lack of knowledge, citizens in developing nations such as Pakistan face enormous compliance costs. Pakistan has been dealing with the issue of low tax collection. Pakistan's tax structure is extremely convoluted, and FBR tax policies are not business-friendly. When new taxes are charged, not only are the expenses of transfers to the authorities incurred, but the entire process compliance costs are also considerable.

Tax compliance involves voluntarily and fully meeting all statutory and legal tax obligations (Hardika et al., 2021). According to Chooi (2020), tax compliance involves submitting an income tax return, accurately reporting all taxable income, and meeting all tax payment deadlines. Theoretically, both tax collectors and taxpayers understand tax compliance as the act of following the various national tax regulations (Dermawan et al., 2020).

Tax compliance is an important aspect of a nation's economic system and involves ensuring that individuals and corporations meet their tax obligations. Tax compliance in Pakistan has become an important point for scholars and policymakers due to the high levels of non-compliance and its negative impact on government revenue and the overall economy. Several studies have examined the factors affecting the compliance behavior of taxpayers in Pakistan. These studies have highlighted several factors affecting non-compliance, including trust in government and tax authorities, attitudes towards tax fairness, levels of tax knowledge and understanding, the simplicity of tax administration, regulatory enforcement and fines, and sociocultural influences. Furthermore, studies have looked at the influence of taxpayer views regarding the ETS, as well as the mediating effect of ETS adoption. Additionally, research has looked into the effectiveness of various methods and controls for improvisation in tax compliance in Pakistan. Tax compliance is among the most important aspects of a country's economic system, or making sure that individuals and businesses pay their fair share of taxes. Still, politicians and academics have been interested in tax compliance in Pakistan due to the high prevalence of non-compliance and the negative consequences it has on government revenue and the economy overall (Jajja, et al., 2022).

The FBR introduced the first online tax filing system known as 'IRIS' or Integrated Risk Information System in the early 2000s and thus e-tax in Pakistan started. It is an online platform launched by Pakistan's Federal Board of Revenue (FBR) to facilitate the electronic filing of taxes. It allows taxpayers to file their returns, make payments, and interact with the tax system more efficiently, with a focus on improving transparency and reducing the risk of errors in tax administration. IRIS first allowed the taxpayers to submit their income tax returns through electronic means thus reducing the use of paper-based filing methods. The government of Pakistan has been trying to make the e-tax systems more effective and user-friendly over the period. In 2013, the FBR introduced the "Tax Asaan" mobile application that enabled taxpayers to file their returns and get any information related to tax through their cell phones. Tax Asaan was aimed at enhancing tax compliance by making it easier and more accessible for the general public especially small taxpayers (Ullah, et al., 2021).

In the recent past, the FBR has been undertaking investment in digital infrastructure and capacity-building programs to promote e-taxation. The process of tax administration has been made even easier and the compliance responsibilities of the taxpayers have been reduced due to online payment options, electronic communication of tax notices, and the use of technology in audits.

However, with these developments, there are still issues such as resistance to change, technological glitches, and cyber-security threats. However, to realize the full potential of electronic tax systems in improving compliance and revenue collection, the Government of Pakistan has to persist in the development of e-tax structures, increase taxpayers' awareness, and engage stakeholders besides overcoming these challenges. The use of electronic

tax systems differs from one country to another due to differences in; technology, legal systems, and bureaucratic capabilities. Most of the developed countries have adopted complete ETS, which enables taxpayers to discharge their obligations through the Internet. For instance, the United States, Canada, the United Kingdom, and Australia have integrated and developed internet systems that enable filing taxes electronically, making payments, and communicating with the authorities. Such systems often come equipped with an easily navigable interface, reliable methods of user identification, and real-time computation. As noted by Wasao (2014), ETS is an online application through which taxpayers can access tax services via the World Wide Web. Some of these services include the filing of returns, application for tax identification numbers, and filing of a payment and compliance certificate. It is in the USA that the electronic tax systems were first implemented with the IRS offering tax return e-filing only for refund (Muturi, et al., 2015).

As pointed out by Maisiba and Atambo (2016), and Joseph, A. B. (2018) the e-tax system improves the level of tax compliance since it allows one to access tax services faster without having to physically locate the tax authority. As noted by Haryani et al. (2015) voluntary tax compliance is enhanced by a system that is easy to use, secure, and reliable, has a simple payment option, and has multiple services. Some of the countries that have adopted electronic tax systems in the recent past include Australia, Brazil, Canada, Chile, China, Italy, India, France, Finland, Germany, Malaysia, Mexico, Norway, Sweden, Switzerland, Singapore, Thailand, Turkey and the United Kingdom among others (Muturi, et al., 2015). Some of the African countries that have adopted computerized tax systems are Kenya, Nigeria, Rwanda, and Uganda as noted by Muturi and Kiarie (2015). The ETS is a modern way through which the tax authorities can convey some messages to the taxpayers due to the ever-changing tax environment globally. The literature review shows that tax compliance and the perception of the computerized tax system are related as stated by Simuyu and Jagongo (2019), Gwaro et al. (2016), and Maisiba et al. (2016). According to Muchira & Simiyu (2019), the results reveal that the ease with which online tax filing is perceived and the ease of submitting the filing is positively related to the system's security thus enhancing tax compliance. In addition, according to Gwaro, et al., (2016), there is a positive relationship between tax compliance and attitude towards the computerized tax system. Furthermore, Maisiba and Atambo (2016) found out that, unlike the previous manual system, Kenyan taxpayers were uncomfortable using the computerized tax system. In their study, Maisiba and Atambo (2016) pointed out that those who do not use electronic filing systems because they are complex do not support tax compliance. Al-Debei et al. (2015) also pointed out that perceived website reputation and trust also have a direct positive effect on consumer attitudes toward online systems. This implies that the more the taxpayers feel that the e-tax system is secure, they will trust and accept it. Chan et al. (2000) found out that the level of optimism of the Hong Kong taxpayers is low towards the computerized tax system hence the low level of tax compliance. There is one way that tax officials may take pride in, and this is the computerized tax system whereby taxpayers can file their returns and make timely payments. As pointed out by Musimenta, et al., (2017), the existence of tax-collecting systems does not eliminate the possibility of non-tax compliance in countries such as Pakistan. The main causes of non-tax compliance include bad policies, complex taxes, and no voice and accountability. Therefore, if people understand and agree with the existing tax system and if they expect the government to use the money they pay for the intended purpose, they will be willing to pay taxes willingly.

In their study, Ibrahim et al. (2015) came up with the conclusion that taxpayers are likely to pay taxes if they have trust in the government. Musimenta et al. (2017) on the other hand believe that taxpayers must feel that the government is offering them an exchange. So long as there is some measure of balance in the ratio of taxes paid to the government and the services which are rendered to the taxpayers by the government, the government should be deemed to be providing services to its citizens and taxpayers. Even though it is challenging to measure services, Bananuka et al. (2018) found that physical output or visibility of operations is one of the most effective means of ensuring accountability. Therefore, the construction of schools, roads, and hospitals

should be seen by the taxpayers and all people should be provided with reasonable security.

In the same regard, Khaddafi et al. (2018) posited that the acceptance of an ETS will depend on several factors such as user satisfaction, behavior intensity, and perceived ease of use. This means that the computerized tax system should be enjoyable and motivating to the taxpayers to use in addition to being easy to use. The use of the computerized tax system should be an entertaining experience for the taxpayer.

According to Zaidi et al., (2017) have noted that it will be easier for taxpayers with computer literacy to transition to an ETS than those with no computer literacy. Due to the increasing use of information systems in tax administration across the world, the use of ETS has become inevitable (Muchira et al., 2019). According to Davis (1989), the Technology Acceptance Model (TAM) shows that the adoption of technology by taxpayers depends on their perceived behavioral intention to use the system, which in turn depends on their perceived attitude toward the system. Consequently, the purpose of performing a certain behavior may determine the acceptance of any technology by the taxpayers.

An electronic tax system is important in improving the levels of tax compliance, costs of compliance, and convenience of the taxpayers (Guriting and Ndubisi, 2006). While Uganda's new e-tax system has eased the process of paying taxes and made it more straightforward, only large companies use it while the small businesses that do not have internet access continue to have a hard time making their taxes paid (Asianzu and Maiga, 2012). Motwani et al., (2015) have pointed out that the use of ETS in India is a voluntary affair. They also discovered that voluntary adoption enhances tax compliance particularly when the taxpayers submit their tax returns electronically and make their tax payments online. Likewise, the level of tax compliance among small taxpayers in Meru County, Kenya, and the level of the e-tax system, which includes online tax registration, online tax return filing, and online tax remittance are positively related as highlighted by the study done by Muturi and Kiarie (2015) on tax compliance. This implies that if SMEs are to use the ETS then the government will be able to improve on the revenue collection. Previous studies have confirmed that the acceptance of the computerized tax system has a relationship with the attitude towards it (Barati et al., 2014; Asianzu and Maiga, 2012; Jahangir and Begum, 2008). Barati et al., (2014) noted that the main driver of the use of an electronic tax system in industrialized countries is the perceived risks of exposure to information and privacy invasion. According to Barati et al. (2014), the level of acceptance of the computerized tax system by taxpayers depends on their perception. Similar findings are observed in Asianzu & Maiga's (2012) work on ETS and tax compliance, the Ugandans' displeasure with ETS means they cannot be utilized. In a similar study, Kiring'a et al. (2017) found a positive relationship between tax compliance and attitude toward the ease and usefulness of online tax filing.

Furthermore, Jahangir and Begum (2008) state that the awareness level of taxpayers towards the value of the electronic tax system needs to be improved to increase the number of users.

ETS implementation in developing countries has been slow due to some factors such as; limited internet connection, low digital literacy levels, and resource constraints. However, many countries have greatly improved the process of computerization of their tax offices. Some of the countries that have adopted computerized tax filing and payment include Kenya, Rwanda, and South Africa.

Nonetheless, electronic tax systems are often underutilized even in nations where they exist to some extent. In their work on the effects of e-tax filing on compliance, Obert Sifile et al. (2018) do so in the following manner. The researchers also found that despite the availability of electronic filing options, a large number of taxpayers opt for paper-based filing or opt out of filing altogether.

Computerized technologies in tax administration enhance transparency and hence, the taxpayers feel more trusted. It is for this reason that taxpayers are willing to pay their taxes when they feel that the tax system is fair and there is transparency in its implementation. For instance, Alm and Soled (2021) argue that the process of digitizing tax systems might increase compliance by providing information that is easier to comprehend and more accessible, which reduces the perceived risk and uncertainty about filing taxes. This reduces the chances of mistakes in

the filing of taxes hence making the process more efficient through the use of electronic tax systems. Calculations and validations help to maintain compliance by helping taxpayers not to make mistakes that lead to fines or audits. In a study done by Castro and Scartascini in 2020, the authors noted that there is a positive relationship between the compliance level and the effectiveness and reliability of electronic tax systems. In both cases, the amount of time and money spent on compliance with the tax legislation can be reduced by the application of electronic technology. Because of its effectiveness, compliance may be preferred by taxpayers since it does not take much effort to meet one's tax obligations. Gemmell and Morrissey (2022) have pointed out that enhancing tax compliance, particularly in developing countries depends on ICT in tax systems. It is convenient for taxpayers to file electronically at any time and from any place, and hence filing taxes is easier. Due to this convenience, the taxpayers have an easy time meeting the regulations and deadlines hence reducing the cost of compliance. Khlif and Amara (2021) argue that e-government, for instance, through the electronic tax filing system, enhances compliance by providing taxpayers with a more accessible and user-friendly interface.

The use of digital tools in tax administration across the world has had positive results concerning compliance levels. The OECD (2023) has noted that countries that have implemented digital tax systems have recorded improved compliance outcomes because of improved data handling and flow, which reduce the risks of mistakes and fraud. In recent studies, it has been found that the use of electronic systems and other digital changes in the tax administration have enhanced tax compliance due to the enhanced process transparency and ease of use (Alm & Soled, 2021). Studies show that countries with advanced ICT environments achieve higher performance in terms of tax compliance due to the precision and speed that electronic systems provide (Gemmell & Morrissey, 2022). Studies have shown that the implementation of e-government programs like electronic tax filing systems can increase the level of compliance since it reduces compliance costs and makes the process easier (Khlif & Amara, 2021).

Technology implementation is largely a function of user acceptance which is enhanced by a positive attitude towards electronic technologies. When users have confidence and trust in electronic systems they are more likely to accept and utilise new technologies. According to Venkatesh and Davis (2020), the perceived usefulness and actual use of electronic systems are highly determined by perceived technological faith. The perceived usefulness of electronic systems influences users' perception of the systems and makes them believe that the systems are easy to use. This impression helps adoption because it reduces the perceived difficulty and the amount of learning required to use new technologies. The following is supported by a study by Davis, Bagozzi, and Warshaw in 2021, which shows that consumers' willingness to adopt electronic systems is influenced by perceived ease of use. A favourable perception of electronic systems also leads to a higher perceived usefulness which is a significant component of the TAM. The users are more inclined to adopt the electronic technologies if they believe that they will enhance their effectiveness and productivity. Chuttur (2022) also points out that it is important to have positive user attitudes in the adoption process since it reveals that perceived usefulness has a strong positive relationship with the intention to use electronic systems.

One of the most critical determinants of the electronic technologies adoption by users is their attitude. Optimism enhances the behavioral intention to use technology and the behavioral desire to use technology is a strong determinant of the actual technology adoption behavior. Increased tax compliance is linked with the use of electronic tax systems because such systems reduce filing complexities and the likelihood of mistakes (Castro & Scartascini, 2020). This is because the attitude towards these technologies is gradually changing and becoming more positive thus promoting the use of electronic systems across the world. The use of the electronic systems increases with increased digital literacy and positive attitude towards technology. The OECD (2023) also points out that the extent of digitalization in various fields is strongly associated with positive attitudes towards technology.

The application of electronic technologies helps to facilitate the process of filing taxes and thus reduces

the amount of time and energy that is spent in compliance with tax laws. Since it is easier for the taxpayers to fill the returns on time and without errors due to this efficiency, the compliance levels go up. According to Alm and Soled (2021), the use of electronic filing methods enhances the efficiency of the general compliance processes of taxes and reduces bureaucracy. Since electronic systems in tax administration provide simple and accessible information on tax obligations and processes, the latter contribute to transparency. For this reason, voluntary compliance is promoted, and confidence between the taxpayers and the tax authorities is enhanced. In a study by Castro and Scartascini (2020), the use of electronic tax systems improves compliance levels because of the ease of understanding the tax compliance processes. Through the use of electronic technology, customers can be able to access various services such as tax filing, payment, and customer support. The challenges of compliance are therefore reduced by this ease and openness, especially for individual and small firms. As stated by Khlif and Amara (2021), the implementation of electronic systems in taxation enables compliance and reduces the chances of non-compliance due to challenges in logistics. The automation and validation of electronic tax systems reduce the likelihood of errors in tax returns that may result in fines and audits. Moreover, they enhance compliance as they help in the identification and prevention of fraud. Gemmell and Morrissey (2022) argue that computerized systems enhance the correctness of reporting and reduce the chances of evasion hence enhancing compliance. This paper has also found that tax compliance has enhanced the general advancement in the use of technology in the administration of taxes. The OECD (2023) has noted that countries that have implemented efficient computerized systems for tax collection have recorded high levels of compliance as these systems enhance efficiency in data processing and reduce the cost of compliance to the taxpayers.

The attitude that users have towards electronic systems has a significant impact on the level of acceptance. This mindset encompasses the beliefs about the usefulness of technology, ease of use, and reliability of the technology, all of which are critical when considering the adoption of new systems. According to Venkatesh and Davis (2020), the use of electronic systems is mandatory for enhancing tax compliance, and the behavioral intention to use such systems is influenced by perceived attitude towards technology. The moderating role of the acceptance of electronic systems is between tax compliance and these systems. When the attitude of the taxpayers is positive towards the electronic systems, it becomes easier for them to accept them and also it will be easier for them to meet their obligations as required by the tax laws. Chuttur (2022) discusses that the TAM demonstrates how adoption plays a moderating role between attitudes and actual usage behaviors, including paying taxes. Electronic systems enhance tax compliance since they reduce the filing process complexity, enhance accountability, and reduce the likelihood of errors. This is because when users have a positive attitude towards electronic systems, they are bound to enjoy these advantages hence enhancing usage. According to Alm and Soled (2021), compliance rates need to be achieved through the effectiveness and openness that the electronic tax systems provide and when supported by a positive user attitude. The use of electronic systems is supported by a positive attitude and the commitment to follow tax laws is also strengthened. To this end, the use of electronic technologies that provide fast and convenient methods for the fulfillment of tax obligations is effective. As noted by the OECD (2023), countries that have invested in digital tax systems have recorded high levels of tax compliance particularly when such expenses are complemented by positive attitudes towards technology among the populace. This result supports the view that attitudes and compliance are supported by the use of technological systems, thus enabling more efficient communication between taxpayers and the tax authorities (OECD, 2023).

Study Hypothesis

H1. *There is a positive relationship between attitude towards an e-tax system and tax compliance.*

H2. *There is a positive relationship between attitude towards an e-tax system and the adoption of an electronic tax system.*

H3. *There is a significant positive association between the adoption of an electronic tax system and tax compliance.*

H4. *Adoption of an electronic tax system mediates the relationship between attitude towards an e-tax system and tax compliance.*

Methodology

This study makes use of the survey technique. This study used a questionnaire for data collection. The questionnaire was divided into four sections: the first component contained demographic data. The next three sections consist of three variables measurement questions. The respondents were asked about attitudes towards the e-tax system adoption of the e-tax system and tax compliance. A convenient sampling technique is employed to collect data in this study. Online questionnaires were sent through WhatsApp or email to employees of the firms located in Multan. 204 questionnaires were filed. All the respondents were filers and paid their taxes on time.

Table 3.1
Variables and No. of items

Variables	No. of items
Attitude towards E-Tax System	8
Adoption of E-Tax System	8
Tax Compliance	13

Results and Discussion

The gender breakdown of the responders was 95.6% male and 4.4% female. In addition, most small business owners and managers are in the 41–50 age bracket (48.27 percent), followed by the 31–40 age bracket (29.6 percent), the 51–60 age bracket (12.31 percent), and the 20–30 age bracket (9.4 percent). We employed the Analysis of Moment Structures-Structural Equation Modeling Technique and SPSS. Except for a small number of items with values in the range of +1.5 to -1.5, the majority of the items' data were normally distributed, meaning that their skewness and kurtosis values fell between +1 and -1. Additionally, two tests were chosen to examine the assumption of a normal distribution of data: the Shapiro-Wilks and Kolmogorov-Smirnov tests. The dataset's distribution was found to diverge significantly from a normal distribution, as demonstrated by the low significance value ($p < .05$) of the Kolmogorov-Smirnov test.

Table 4.1
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ATES 1	204	3	6	4.43	.658	.641	.170	.086	.339
ATES 2	204	4	6	4.50	.616	.831	.170	-.303	.339
ATES 3	204	2	6	4.54	.668	-.045	.170	1.032	.339
ATES 4	204	4	6	4.67	.647	.440	.170	-.697	.339
ATES 5	204	1	5	1.94	.788	2.063	.170	6.513	.339
ATES 6	204	2	6	4.44	.737	-.450	.170	2.034	.339
ATES 7	204	4	6	4.87	.547	-.072	.170	.181	.339
ATES 8	204	4	6	4.82	.514	-.237	.170	.239	.339
ADES 1	204	2.0	6.0	4.833	.6369	-.999	.170	3.356	.339
ADES 2	204	1.0	6.0	4.490	.8392	.385	.170	.928	.339
ADES 3	204	1.0	6.0	4.397	.7842	-.026	.170	2.775	.339
ADES 4	204	2.0	6.0	4.701	.6760	-.521	.170	1.546	.339
ADES 5	204	2.0	6.0	4.760	.7062	-.469	.170	1.308	.339
ADES 6	204	1.0	6.0	4.162	.6496	.700	.170	5.289	.339
ADES 7	204	2.0	6.0	5.025	.5199	-1.028	.170	6.790	.339
ADES 8	204	2.0	6.0	5.005	.5482	-.903	.170	5.137	.339

TXCP 1	204	4	6	5.45	.563	-.370	.170	-.839	.339
TXCP 2	204	3	6	5.61	.573	-1.622	.170	4.092	.339
TXCP 3	204	2	6	5.46	.676	-1.259	.170	2.423	.339
TXCP 4	204	4	6	5.10	.529	.108	.170	.452	.339
TXCP 5	204	4	6	5.09	.472	.293	.170	1.281	.339
TXCP 6	204	4	6	5.45	.660	-.786	.170	-.466	.339
TXCP 7	204	4	6	4.67	.840	.695	.170	-1.229	.339
TXCP 8	204	4	6	5.72	.610	-1.993	.170	2.627	.339
TXCP 9	204	2	6	5.00	.591	-.576	.170	2.867	.339
TXCP 10	204	4	6	5.19	.514	.252	.170	.145	.339
TXCP 11	204	4	6	4.97	.879	.067	.170	-1.708	.339
TXCP 12	204	1	6	3.42	2.369	.082	.170	-1.924	.339
TXCP 13	204	1	6	1.95	1.378	1.663	.170	2.054	.339
Valid N (list vise)	204								

Table 4.2
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
ATES 1	.349	204	.000	.770	204	.000
ATES 2	.355	204	.000	.713	204	.000
ATES 3	.290	204	.000	.777	204	.000
ATES 4	.277	204	.000	.766	204	.000
ATES 5	.399	204	.000	.610	204	.000
ATES 6	.287	204	.000	.771	204	.000
ATES 7	.372	204	.000	.721	204	.000
ATES 8	.399	204	.000	.686	204	.000
ADES 1	.373	204	.000	.735	204	.000
ADES 2	.367	204	.000	.729	204	.000
ADES 3	.346	204	.000	.751	204	.000
ADES 4	.318	204	.000	.789	204	.000
ADES 5	.305	204	.000	.807	204	.000
ADES 6	.441	204	.000	.594	204	.000
ADES 7	.393	204	.000	.624	204	.000
ADES 8	.384	204	.000	.667	204	.000
TXCP 1	.318	204	.000	.713	204	.000
TXCP 2	.390	204	.000	.620	204	.000
TXCP 3	.337	204	.000	.719	204	.000
TXCP 4	.381	204	.000	.705	204	.000
TXCP 5	.416	204	.000	.642	204	.000
TXCP 6	.339	204	.000	.733	204	.000
TXCP 7	.360	204	.000	.703	204	.000
TXCP 8	.478	204	.000	.509	204	.000
TXCP 9	.351	204	.000	.731	204	.000
TXCP 10	.400	204	.000	.685	204	.000
TXCP 11	.266	204	.000	.759	204	.000

TXCP 12	.288	204	.000	.700	204	.000
TXCP 13	.284	204	.000	.709	204	.000
a. Lilliefors Significance Correction						

Equal dispersion of error terms from the central regression fit line is shown by homoscedasticity. Therefore, homoscedasticity examines a state of the data where the error term would exist on an equal basis from the regression fit line across the complete range of the predictor values. Conversely, heteroscedasticity refers to a situation where the error terms exhibit unequal dispersion over the regression fit line throughout the whole range of predictor values (Astivia & Zumbo, 2019). Using a scatter plot, this heteroscedasticity requirement would be illustrated. When the error term varies equally over the range of predictors, the homoscedasticity assumption is accepted (Hair et al., 2010). The homoscedasticity assumption was met since the scatter plot of the current investigation shows that the error term is distributed equally. The homoscedasticity scatterplot is shown below.

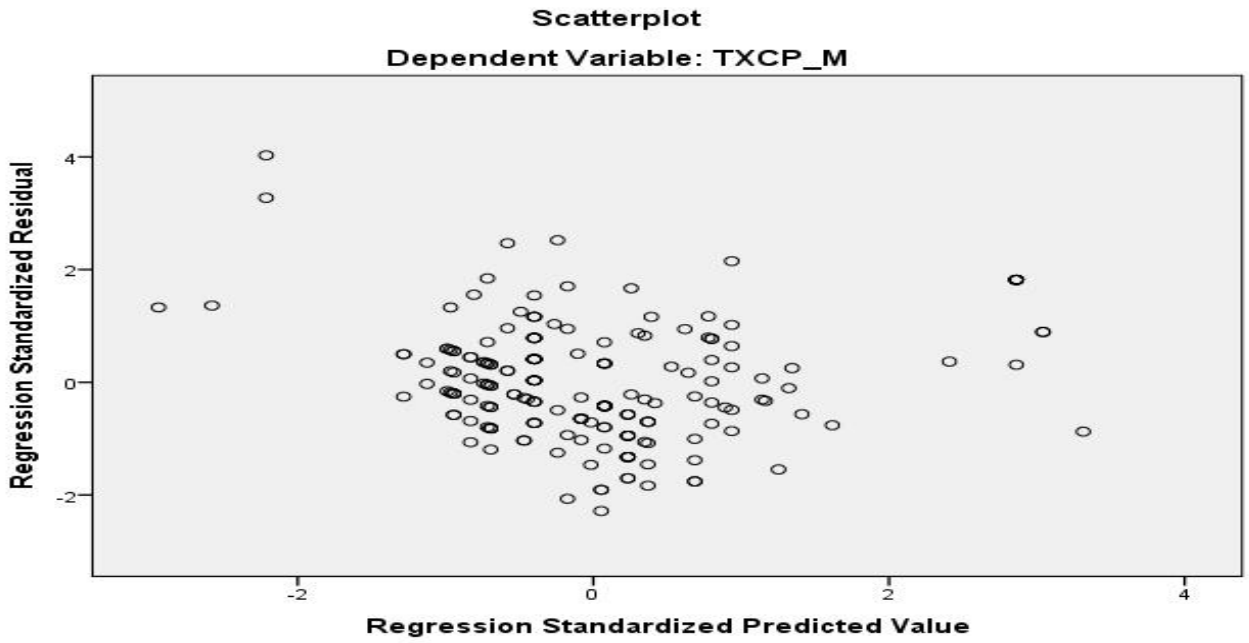

Figure 1

Homoscedasticity scatterplot

Strong relationships between independent variables are known as multi-collinearity, and they have the potential to negatively impact regression findings. Variance inflation factor (VIF) and tolerance can be used to quantify collinearity, according to Pallant (2007). Multicollinearity in the data model is not an issue if the tolerance value (tolerance >0.1) and their VIF value are less than 10. All of the variables in the dataset are within their range, as indicated by the results. There is also no indication of multicollinearity as evidenced by the multicollinearity diagnostics (Tolerance and VIF).

Table 4.3
Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.484	.179		13.883	.000		
	ATES_M	.292	.045	.392	6.420	.000	.695	1.439

	ADES_M	.251	.039	.394	6.460	.000	.695	1.439
a. Dependent Variable: TXCP_M								

Table 4.4
ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.765	2	5.383	92.624	.000[b]
	Residual	11.680	201	.058		
	Total	22.445	203			
a. Dependent Variable: TXCP_M						
b. Predictors: (Constant), ADES_M, ATES_M						

Table 4.5
Goodness-of-fit Test

Chi-Square	Df	Sig
454.897	202	.000

Table 4.6 depicts the correlation analysis to provide a correlation analysis of the direction of the link between variables, such as positive or negative. Attitude and Electronic Systems have a favorable and statistically significant link with Tax Compliance (r=.610, p<.01). Adoption of Electronic Systems has a favorable and statistically significant link with Tax Compliance (r=.611, p<.01). Overall, the statistical values of Pearson correlation show that multicollinearity is not a problem because the independent variables' correlations do not surpass 0.7.

Table 4.6
Multicollinearity Diagnostics based on Pearson Correlation Analysis

	ATES_M	ADES_M	TXCP_M
ATES_M	1		
ADES_M	.552**	1	
TXCP_M	.610**	.611**	1

** Correlation is significant at the 0.01 level (2-tailed)

The consistency with which a measurement tool evaluates a construct over time (stability) and among its distinct items (internal consistency) is known as the measure's reliability. Software reliability analysis would be performed in SPSS v-23 to verify the measure's consistency. The Cronbach's Alpha coefficient value, used to determine reliability, serves as the check unit. An indicator of a test's or scale's internal consistency is provided by Cronbach's Alpha. The range of values for Cronbach's alpha is 0 to 1. A scale's reliability increases with a greater Cronbach alpha value near 1, and an instrument's reliability decreases with a lower alpha value approaching zero. Although Cronbach's alpha has no set value, scholars have stated that a value higher than 0.70 is considered acceptable. Cronbach's Alpha has an acceptable range of 0.7 to 0.95. Based on statistical analysis, every relevant variable has a Cronbach's Alpha value higher than 0.7. It indicates that the questionnaire is trustworthy and accurately depicts the concept. I used omega to verify the measure's reliability in addition to Cronbach's alpha. The analysis's findings, which are displayed in Table 8 below, all validate our measure's internal consistency because all of the values fall inside the range (>.06). The measurement model is indicated for all research variables by CR >.70 (reliability), AVE >.50, CR > AVE (convergent validity), and MSV < AVE (discriminant validity). Reliability, convergent validity, and discriminant validity were thus all validated for the full measurement model, which comprised evaluations of all the variables in this study taken as a whole.

Table 4.7
Reliability and Validity

Variable	Internal consistency reliability (Cronbach alpha)	McDonald's' Omega Reliability	AVE	MSV
ATES – 8 items	0.838	0.853	0.592	0.747
ADES – 8 items	0.903	0.899	0.639	0.800
TXCP – 13 items	0.632	0.634	0.641	0.565

Convergent validity is a subset of construct validity that evaluates the construct's structure to determine whether or not all of the indicators correspond to the same construct. Muller (1999) states that the test examines the fundamental framework of the construct by using credible theories. The standardized coefficients of regression and average variance extracted (AVE) scores of a construct are used to guarantee its convergent validity. According to Hair et al. (2016), the standardized regression weight of the indicators and the AVE must equal or exceed 0.50 to meet the specified criteria for convergent validity. Factor loadings greater than or equal to 0.40 are also acceptable, according to Hair et al. (2016), for large sample sizes (more than 150). The threshold limit equal to or larger than 0.50 will be maintained in this study, and all items with factor loading equal to or greater than 0.50 will be kept. Table 9 presents Convergent Validity (AVE), Discriminant Validity, and Composite Reliability (CR). Table 9 shows that all study constructs have required limitations for Convergent validity (AVE), Discriminant Validity, and Composite Reliability (CR).

Discriminant validity is the alternative type of construct validity. It evaluates the degree of variation between two variables. Comparing the square root of AVE for a particular concept to its mean square variation (MSV) is a method used to evaluate discriminant validity. If estimations of the square root of AVE are higher than the MSV, discriminant validity is considered satisfied. All of the constructs in Table 10 have AVE values that are higher than their MSV values, indicating that the discriminant validity of each construct is satisfied.

Researchers utilize factor analysis as a technique, to examine respondents' responses to the underlying constructs on many quantifiable statements or items. Factor analysis is mostly used to condense vast amounts of data to identify patterns and relationships among the constructs. In research, two primary factor analysis methodologies are frequently employed. Both the Confirmatory Factor Analysis (CFA) and the Exploratory Factor Analysis (EFA). The EFA measured the correlation between the measuring items to further investigate the data into the predicted construct. The Kaiser-Meyer-Olkin (KMO) value is the suggested criterion for factor analysis. The range of the KMO value is zero to one. A result that is close to 0 denotes a weak instrument relationship, suggesting that factor analysis is probably not done correctly. On the other hand, if the KMO value is close to 1, it shows a strong association and suggests that the correlation pattern between the construct's pieces is significant.

A value of KMO > 0.9 indicates an excellent pattern of correlation; a value of KMO > 0.8 indicates a meritorious pattern of correlation; a value of KMO > 0.7 indicates a middling pattern of correlation; a value of KMO > 0.6 indicates a mediocre pattern of correlation; a value of KMO > 0.5 indicates a miserable pattern of correlation; and a value of KMO less than 0.5 is unacceptable.

Table 4.8
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.793
Bartlett's Test of Sphericity	Approx. Chi-Square	3948.95
	df	406
	Sig.	0

Confirmatory factor analysis needs to be examined, to evaluate the modeling assessment and fitness. The measurement model has a strong statistical foundation thanks to confirmatory factor analysis, which also makes it possible to examine the connection between the latent construct and the observed variables. The indicators' assignment to factors according to the investigator's method of connecting the indicators to the latent variables was validated by confirmatory factor analysis (CFA). The following action comes after performing CFA independently for each study variable. All of the individual variables now demonstrated the necessary parameters satisfactorily, allowing the structural model to be tested. As a result, this would enable me to investigate the combined impact of these constructs in a single study structure model. There is a chance that these indicators will exhibit strong correlations or cross-loading with other research factors. Consequently, I ran the entire structural model test to find and fix these issues in the model. For the measurement model, which includes all of the measures for all of the study's variables combined, the complete CFA findings demonstrated that every goodness of fit parameter, including CMIN/df = 1.51, CFI =.94, TLI =.93, and RMSEA =.05, falls within an acceptable range.

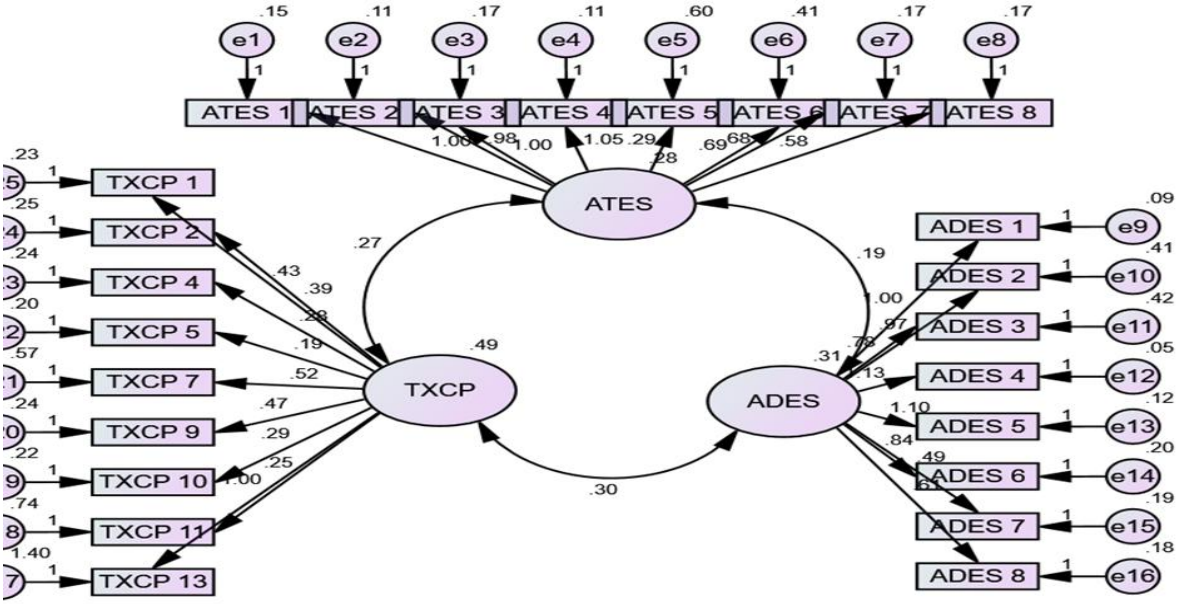

Figure 2

Confirmatory Factor Analysis of Full Measurement Model

Depending on the type of predicted associations, I examined the study's hypotheses in three different stages. Initially, the hypotheses H1, H2, H3, and H4 were tested using mediation analysis and the SPPS process macro model 4. The statistical findings demonstrated a positive and substantial relationship between creative cognition and compassion (β=0.2917, S.E. =0454, p=0.0000). This result validated hypothesis H1, which states that attitude toward electronic systems and tax compliance are positively correlated. Next, the second direct effect was checked, which was the correlation between the dependent variable (tax compliance) and the mediating variable (adoption of electronic system). The adoption of the electronic system is favorably and strongly correlated with attitude toward the system (β=0.6465, S.E. =0687, p=0.0000), as was discovered. These statistical findings validated the H2 hypothesis. Next, I looked at the second direct effect, which was the correlation between the dependent variable (adaptive performance) and the mediating variable (creative cognition). According to this research findings, adaptable performance and creative cognition are favorably and strongly correlated (β=0.2508, S.E. I=0388, p=0.0000). These numerical findings validated hypothesis H3. Consequently, meeting the second need for mediation. Table 4.9 provides a summary of the

findings. Furthermore, these findings demonstrated a favorable and substantial indirect influence of compassion (β=0.1621, S.E.=0496, lower-bound confidence interval = 0.0960, upper-bound confidence interval = .2925) on adaptive performance through creative cognition. The outcomes validated the fourth hypothesis.

Table 4.9

Mediation analysis of the Adoption of Electronic Systems in the relationship of Attitude to Electronic Systems and Tax Compliance

Variables	DV= Adoption of Electronic System (ADES)	DV= Tax Compliance (TXCP)
	Coefficient (Standard Error) p-value	Coefficient (Standard Error) p-value
Attitude towards Electronic Tax System (ATES)	0.6465(0.0687)0.0000 (H2)	0.2917(0.0454)0.0000 (H1)
Adoption of Electronic Tax System (ADES)	--	0.2508(0.0388)0.0000 (H3)
Tax Compliance (TXCP)	1.9072(0.2952)0.0000	2.4837(0.1789)0.0000
R-square	0.5522	0.6925
The indirect effect of DLL on FP through OI based on a 95% confidence interval and 1000 bootstrapping samples		
Indirect Effect =0.1621; Standard Error = 0.0496; LLCI= 0.0960; ULCI=0.2925 (H4 supported)		

Conclusions and Policy Implications

Returns in Pakistan are filed online, it can be argued, based on the Theory of Reasoned Action (TRA), that attitudes toward the electronic tax system increase tax compliance. The taxpayers have to be orientated towards the system of ETS and embrace it when they perceive it as beneficial, such as time-efficient, better performance, customized easy working, and secured data processing & recording. The results of Ondara et al. (2016), who found a significant correlation between tax compliance and attitude toward the electronic tax system, lend support to this. However, the author did not investigate the potential role of ETS adoption. In a similar vein, Kiring'a et al. (2017) discovered a substantial correlation between tax compliance and perceptions of online tax filing's simplicity and convenience of use. Tax compliance has improved in Pakistan as a result of taxpayers using the ETS more frequently. This is accurate since using an ETS, for example, filing tax returns, and tax payments, staying out of trouble, following the legislation, and obtaining the taxation ID, is probably going to have a significant impact on tax compliance. The adoption of information technology is contingent upon an individual's perception of its application, as per the TAM. Tax compliance is probably going to get better as Organization owners start embracing information technology. This result is consistent with the findings of a study conducted in 2015 by Muturi and Kiarie on tax compliance, which showed that among small taxpayers in Meru County, Kenya, there is a strong positive correlation between adoptions of an ETS system through online tax registration, online tax return filing, online tax remittance, and tax compliance.

The findings of the mediation path analysis show that the relationship between attitude toward an electronic tax system and tax compliance is mediated by the implementation of the ETS system. The ease of filing returns and making payments, for instance, as well as an ETS system's security and time-saving features, all have a substantial impact on how a small business taxpayer uses it to file returns, pay taxes, and avoid penalties—all of which are partially correlated with filing and payment compliance. These results corroborate those of Haryani et al. (2015), who hypothesized that perceived utility and simplicity of use have a significant impact on the adoption of ETS systems. Similarly, Muturi (2015) found that online tax filing, remittance, and registration translated to tax compliance among small taxpayers in Meru County, Kenya, when they examined the impact of the online tax system on tax compliance. However, to make this study generalizable to developing nations with environments similar to Uganda's, it was suggested to

investigate the impact of ETS adoption on the relationship between the attitude toward the ETS system and compliance with tax laws, and therefore present research is focused on addressing this research gap.

The objective of this study was to look into the mediating role that an electronic tax system's adoption had in the relationship between an organization's attitude about the system and its tax compliance in a developing nation. This was accomplished by using managers of these companies to administer a questionnaire survey to 204 owner-managed corporations. The association between attitude toward the computerized tax system and tax compliance appears to be mediated by the adoption of the system, according to the results. Overall, researchers, practitioners, and regulators should all take note of the study's conclusions. This study establishes that an electronic tax system plays the role of a mediator between tax compliance and attitude towards electronic tax systems, thus contributing to the existing literature on the topic. The state must enhance the compliance of tax legislation using creating widespread awareness among its citizens. This might change the attitude of the taxpayers towards the systems and make them utilize them hence enhancing the compliance to taxes. The authorities dealing with taxes should focus on increasing the utilization of the computerized tax system and ensuring that taxpayers receive additional training on the importance of tax compliance. This may be necessary for the owners and managers of organizations to ensure that they operate within the set tax legislation by utilizing the requisite facilities, trained and skilled human resources, and availability of competent professionals. This study provides evidence for the applicability of the TRA and the TAM in the adoption of electronic technologies in the context of tax compliance. This means that these models may be used to predict compliance behaviors in a governmental setting by extending their applications to compliance-related behaviors This is in line with past studies that have revealed how users' behavior and perceptions are determined by perceived usefulness and ease of use (Davis, 1989). This goes a long way in highlighting the importance of including the attitudinal aspects in the models that are used to predict behavioral outcomes. The study also revealed that adoption is a mediator between attitude and tax compliance, thus positive attitude results in adoption which in turn results in compliance. An understanding of this mediation effect is necessary to understand the process from the attitude development to the actual conduct. This mediating role would imply a sequential process whereby positive attitudes produce adoption which in turn promotes compliance. SBE owners and managers may help with tax compliance by assuring the availability of necessary resources such as computers and well-trained employees.

Practical Implications and Policy Suggestions

With these findings in mind, governments and tax authorities can develop campaigns and policies that enhance the perception people have about computerized tax systems. Pakistani governments and tax authorities, and possibly other governments in similar situations, should focus on the campaigns that would change people's perceptions of these systems by highlighting the benefits of such systems as being easy, efficient, and secure. For example, highlighting the fact that electronic filing is less time-consuming and involves fewer errors could enhance attitudes and increase compliance levels. The development of electronic tax systems that are easy to use and that emphasize the aspects of accessibility and usability results in higher rates of acceptance and attitudes among the users. It is important to guarantee the usability and accessibility of the given electronic tax systems. Tax authorities may reduce the adoption barriers and increase overall compliance by placing a heavy focus on usability. Ensuring that the users can get a good interface can also help in the creation of good sentiments and hence compliance. Almaiah, Al-Khasawneh, and Althunibat (2020) state that adequate training and support can help users manage electronic systems, which may improve their attitudes and increase the probability of adoption. This can help in the increased adoption by creating positive attitudes towards the use of such technology, especially for those who may not be adequately computer literate.

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