Effect of Tax Modernization on Voluntary Tax Compliance with a Moderating Role of Tax Awareness and Education: Evidence from Implemented Services Tax in Khyber Pakhtunkhwa

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Abstract

This study investigates voluntary tax compliance with the sales tax on services in Khyber Pakhtunkhwa (KP), Pakistan, after its decentralization in 2010 under the 18th amendment in the constitution of the Islamic Republic of Pakistan. Focusing on tax modernization and its impact on tax compliance, with the moderating role of tax awareness and education, the research examines data from 440 taxpayers registered with the Khyber Pakhtunkhwa Revenue Authority using SPSS-23 software. The aim is to identify the factors influencing tax compliance in a region experiencing legislative transformations, thus enriching the existing literature on tax compliance with region-specific insights. The study highlights the critical role of tax system modernization and educational efforts in enhancing compliance and offers practical recommendations for policymakers and tax administrators. The findings underscore the nuanced dynamics of tax compliance in KP and suggest targeted strategies for improving compliance rates and taxpayer services, potentially applicable in similarly transforming regions. This research provides valuable theoretical and practical insights into tax compliance, making significant contributions to both the field and tax administration practices.

Keywords: Tax Modernization; Tax Compliance; Tax Awareness and Education; Sales Tax on Services and KPRA.

Introduction

The introduction of the sales tax on services in 2000 marked a significant global development affecting all provinces in Pakistan, leading to the formulation of respective local ordinances. Initially overseen by the Federal Government due to provincial capacity constraints, a transformative shift occurred in 2010 through the 18th Constitutional Amendments, decentralizing the tax authority to individual provinces internationally (KPRA, 2014). As a result, each province established local tax-collecting entities to manage the services tax autonomously.

Following the 18th amendment to the constitution of the Islamic Republic of Pakistan in 1973, and under articles 8 and 9(2) of the 7th NFC Award, provinces began collecting sales tax on services. Consequently, each of the four provinces established their revenue authorities: Sindh Revenue Board (SRB) in 2011, Punjab Revenue Authority (PRA) in 2012, Khyber Pakhtunkhwa Revenue Authority (KPRA) in 2013, and Balochistan Revenue Authority (BRA) in 2015. The KPRA was further strengthened by the formation of the Revenue Council in 2021, chaired by the Chief Minister, to enhance financial autonomy. The historical shift of sales tax

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administration from provincial levels under the India Act of 1935 to federal oversight with the sales tax act of 1948 and back to provincial control in 1957 underscores a dynamic evolution in tax governance, further detailed in the Khyber Pakhtunkhwa Finance Act 2013.

Before the formation of the Khyber Pakhtunkhwa Revenue Authority (KPRA) in 2013, the Federal Board of Revenue (FBR) was responsible for collecting sales and services tax and redistributing the proceeds to the provinces. Post-establishment of KPRA, there was a noticeable increase in services tax revenue—KPRA collected Rs. 29.50 billion over four years, a significant improvement over the Rs. 22.80 billion collected by the FBR from 2001 to 2013. This shift addresses business taxpayers' concerns about sales tax implementation and voluntary compliance. Research also indicates tax evasion varies across demographic lines, with studies suggesting higher tax morale among women and married individuals, a crucial insight for targeted tax strategies (Damayanti et al., 2015; Cullen et al., 2018).

This introduction highlights the complexities of tax compliance and the need for a complete approach, including modernizing the tax system, enhancing awareness and education, and refining legal frameworks (Taschetti, 2013). Inspired by Adimassu and Jerene's work on tax compliance in Ethiopia, this study aims to bridge the understanding gaps in Service Tax compliance and cater to the varied challenges faced by different business entities. It proposes custom compliance rules for individuals and corporations, recognizing tax education's critical role, as Mansor and Ilias (2013) emphasized. Despite the decentralization under the 7th NFC Award and increasing taxpayer registrations, concerns about non-compliance and evasion persist, necessitating a combined effort from tax authorities across major Pakistani cities to foster a culture of voluntary compliance.

Research Gap

This research addresses crucial gaps in the literature regarding tax modernization, tax compliance, and tax awareness and education, particularly in Pakistan, an underdeveloped country with significant reliance on tax revenue for governmental functions (Helhel & Ahmed, 2014; Manual & Xin, 2016). Despite the dependence on these revenues, Pakistan faces challenges such as a reliance on loans to manage budget deficits due to insufficient tax collection (Franzoni, 2020) and a disparity between registered tax identifiers and actual tax contributors, pointing to a significant awareness gap (Hassan et al., 2021). Existing studies are limited, particularly in modern tax technology and administration, focusing primarily on income tax and general sales tax, with scant attention to services tax relevant to local service providers (Manual & Xin, 2016; Hassan et al., 2022; Rashid, 2020). This study aims to fill these deficiencies by enhancing the academic resources and understanding of tax systems in Pakistan, contributing to more effective tax compliance strategies globally (Mansor and Ilias, 2013; OECD, 2012).

Problem Statement

Taxpayer behavior is a global concern, with the Khyber Pakhtunkhwa Revenue Authority (KPRA) recognizing the crucial role of taxpayers in achieving tax compliance (KPRA, 2021). In Khyber Pakhtunkhwa, the tax compliance environment faces complex challenges due to a need for more understanding among taxpayers about the modern tax system and inadequate tax awareness. These issues call for a thorough investigation, with the primary problem being significant obstacles to effective tax compliance. The outdated taxation infrastructure contributes to compliance difficulties, especially regarding the sales tax on services. Furthermore, Pakistan's need for more tax awareness and education impacts the relationship between tax compliance and modernization. These challenges are compounded by the Pakistani government's reliance on borrowing to raise essential funds, emphasizing the urgent need for a reliable revenue stream through effective tax compliance to support government functions.

Research Questions
1. How does tax system modernization, including technology and process improvements, influence sales tax compliance, and what role does taxpayer awareness play?
2. How do tax awareness and education moderate the relationship between tax compliance and its determinants, including tax knowledge, compliance costs, evasion opportunities, and system modernization?

Study Objectives
This study aims to refine and expand the understanding of tax compliance by focusing on the specific objectives:

Assess KPRA's tax administration and modernization efforts
This objective evaluates how KPRA's tax administration and modernization initiatives, mainly through digital solutions and taxpayer facilitation services, affect taxpayer engagement, compliance levels, and revenue generation.

Examine tax modernization's impact on compliance and the role of tax awareness and education
This part of the study aims to understand how tax awareness and education influence the relationship between tax knowledge, compliance costs, opportunities for tax evasion, and actual compliance behaviors. Additionally, it assesses the effectiveness of tax education programs in enhancing compliance.

These objectives are designed to provide a thorough understanding of the dynamics influencing tax compliance within service tax, leveraging insights from comparative analyses conducted in this study.

Literature Review
Impact of Modernized Tax Administration on Tax Compliance
The literature reveals that modernized tax administration significantly impacts tax compliance by integrating advanced information technology systems, organizational restructuring, and improved governance practices (Zuhdi et al., 2019; Khasanah, 2016; Astana & Merkusiwati, 2017). These studies emphasize transparency, accountability, and the strategic use of tax profiles and data analysis to bolster compliance (Arismayani et al., 2017; Aryati & Putritanti, 2017). Tax modernization involves adapting tax systems to leverage technology and improve efficiency, which is crucial for enhancing state revenue and taxpayer compliance (Agun et al., 2022; Wildan, 2022). However, there remains a need for a more detailed examination of the challenges and opportunities presented by modernized tax administration strategies, particularly within the Khyber Pakhtunkhwa services tax framework.

Tax Compliance
Tax compliance is crucial for governments relying heavily on tax revenue to meet administrative and financial obligations, with non-compliance often resulting from misreported income or expenses (Braithwaite, 2009). Taxpayers with excellent tax knowledge and awareness are more likely to comply fully with their tax obligations, enhancing government revenue stability (Li et al., 2023). In Pakistan, significant tax revenue shortfalls lead to dependency on loans, underscoring the importance of effective tax compliance for financial stability (Finance Division, 2016). Despite efforts to improve taxpayer compliance, gaps still need to be addressed, particularly in the number of tax return filers versus national tax number holders, indicating challenges in voluntary compliance and effective tax collection (FBR, 2016). Future research should focus on these issues, especially in regional contexts like Khyber

Pakhtunkhwa, to inform policy and ensure sustainable government financing (Alabede et al., 2011; Awan & Hannan, 2014).).

Moderating Role of Tax Awareness and Education on Tax Compliance
Tax education and awareness significantly enhance understanding and compliance with tax obligations, with increased knowledge linked directly to higher compliance levels (Hartana & Merkusiwati, 2018; Budhiartama & Jati, 2016; Anam et al., 2018). Empirical studies demonstrate that better tax knowledge, lower compliance costs, and modern tax administration systems contribute to increased tax compliance (Karolina & Noviari, 2019; Stanford, 1995). Research reveals a strong correlation between tax awareness and compliance, where informed taxpayers are likelier to adhere to tax laws (Blanthorne & Kaplan, 2008; Nalendro & Isgiyarta, 2014). Enhanced taxpayer education about tax laws, service quality, and the effectiveness of tax systems fosters better compliance and a constructive relationship with tax authorities (McKerchar, 2002; Munari, 2005). Integrating modern technology, good governance in tax systems, and increasing transparency in tax operations are crucial for boosting compliance and trust in tax administration (Keraro et al., 2015; Zuhdi et al., 2019).

Study Rationale
This study identifies a significant gap in the literature on the sales tax on services in Khyber Pakhtunkhwa, Pakistan, contrasting with existing research on service taxes in other developing countries (Chebusit et al., 2014). It aims to analyze the effects of introducing businesses such as hotels and restaurants to modernized tax systems, exploring the potential benefits of digital tax administration and compliance in reducing costs and enhancing tax acceptance (OECD, 2012). The research is designed to contribute practical insights and policy recommendations to improve understanding and management of service taxes, which are crucial for Pakistan's economic stability (Masinde & Makau, 2010; James & Alley, 2004).

Conceptual Framework

The conceptual framework of this study explores the relationship between tax modernization and tax compliance, mainly focusing on the moderating role of tax awareness and education. It suggests that modern technological advancements in tax administration, as implemented by the KPRA, enhance tax compliance. This framework is informed by prior research, such as that by Adellia and Islami (2020) and Manual and Xin (2016), which indicates that updated tax systems improve compliance rates. Additionally, it posits that greater tax awareness and education enhance the effectiveness of tax modernization efforts in boosting compliance, aiming to empirically validate these hypotheses to contribute to academic and practical approaches in tax administration.

Figure 1: Conceptual framework
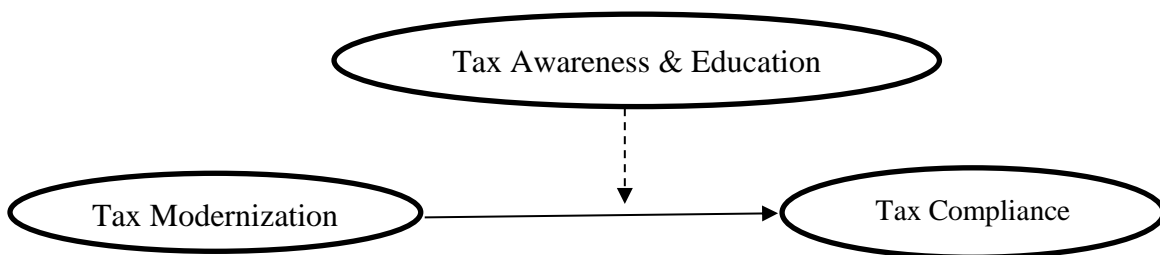
Source: Conceptual framework (Adellia & Islami, 2020; Manual & Xin, 2016).

Hypotheses Development
This section presents hypotheses regarding the relationship between tax modernization and tax compliance, incorporating the potential moderating effects of tax awareness and education. Based on the capabilities of the Khyber Pakhtunkhwa Revenue Authority (KPRA) and supported by various studies, the formulated hypotheses are as follows:

H1: Tax modernization has a significant impact on Tax Compliance. This hypothesis is supported by research indicating that advancements in tax system modernization, such as improved ICT capabilities and digital tools for efficient data management and transaction processing, positively affect tax compliance (Astana & Merkusiwati, 2017; Arismayani et al., 2017; Zuhdi et al., 2019).

H2: Tax awareness and education significantly moderate the impact of tax modernization on tax compliance. This hypothesis builds on the notion that while tax modernization directly influences compliance, the level of tax awareness and the quality of tax education can further enhance or weaken this effect, making tax awareness and education critical factors in optimizing the benefits of modernized tax systems (Zuhdi, 2019).

Research Methodology

Research Design
This section outlines a quantitative research design to investigate the relationships among variables such as tax modernization and their influence on tax compliance. The study further examines tax awareness and education as moderators to see how they affect the dynamics between the independent and dependent variables. It provides a systematic framework to test the set hypotheses within the tax compliance framework.

Research Philosophy
The study is guided by a positivist philosophy that emphasizes an objective approach to understanding the phenomena under study, aligning with the pursuit of observable and measurable facts to conclude.

Research Approach
A deductive approach is employed for the research, allowing for hypothesis testing based on existing theories to validate or invalidate the theories concerning tax compliance.

Data Collection Strategy
Data is gathered through structured questionnaires targeting registered taxpayers, using probability and non-probability sampling methods to collect quantitative and qualitative data across various regions.

Methodological Choices
The mono-method research relies exclusively on survey methods for data collection to maintain consistency and focus in data gathering.

Time Horizon
The study captures data at a single point, offering a snapshot view that helps understand the current state of tax compliance among the surveyed population.

Techniques and Procedures
This segment elaborates on the data collection, sampling, and analysis methodologies. Structured questionnaires with multiple-choice and open-ended questions were utilized,

employing convenience stratified sampling to ensure diverse geographical representation. Data was analyzed using SPSS-23, focusing on both descriptive and inferential statistics.

Data Collection
Data was collected using structured questionnaires, including closed and open-ended questions, to capture a wide range of participant data.

Sampling Method
A convenience stratified sampling technique was adopted, categorizing taxpayers based on registration type and region to ensure a comprehensive sample reflecting the population's diversity.

Inclusion Criteria
Participants were required to be registered for sales tax on services with KPRA, ensuring that all respondents were active and relevant to the study's focus.

Data Analysis
Data analysis was performed using SPSS-23 to apply descriptive and inferential statistical techniques, clarifying the relationships and influences among the variables studied.

Data Collection Techniques
The study utilized various data collection techniques, including multiple-choice, Likert scale, binary, categorical, and numerical questions, enriching the data set and allowing for a nuanced analysis.

Ethical Considerations
Ethical standards were rigorously maintained, with informed consent obtained, participant confidentiality upheld, and all data used solely for research purposes, adhering to guidelines to protect participant rights and dignity.

Study Population
The study's population includes all taxpayers registered under the KPRA for sales tax on services, providing a broad and relevant base for sampling and data collection to reflect the entire taxpayer community in Khyber Pakhtunkhwa.

Sampling Technique
A sample size of 440 was determined using statistical software, with a stratified sampling technique ensuring representation across different taxpayer types and regions.

Sources of Data
Primary data was collected directly from taxpayers through surveys, aligning with criteria set by KPRA to ensure the relevance and accuracy of the data gathered.

Data Collection Tools
The research employed various tools for data collection, such as Likert scales, binary scales, and open-ended responses, to effectively capture the diverse aspects of taxpayer behavior and compliance.

Data Collection Procedure
The procedure involved distributing questionnaires to a selected sample, ensuring ethical standards were met, and data was collected systematically according to the established research design.

Data Analysis Tools
The data were collected via a questionnaire from 440 taxpayers and processed through sorting, editing, classification, coding, and analysis using recommended statistical software for small samples (Hair et al., 2017, 2019). This included generating descriptive profiles, performing statistical tests to identify key relationships, and assessing the moderating effects of tax awareness and education.

Analysis Approach
The descriptive analysis used frequencies and percentages to characterize the data, providing a comprehensive overview. A regression model was employed to examine relationships between variables for hypothesis testing. Additionally, moderation analysis was conducted using Hayes' model to explore the moderating effects on the hypothesized relationships.

Measurement Technique
The measurement model technique involved a combination of diverse tools, including multiple-choice, Likert, binary, categorical, ordinal, and numerical scales, as well as open-ended responses and likelihood assessments. Specific threshold tables were constructed to present the detailed breakdown of frequencies and percentages.

Model Specification
The regression model has been used for analysis as the same model by Rencher and Christensen (2012).

Model 1
$Yi = \alpha + \beta_l X_{1i} + \varepsilon_i$
Where;
Y = Tax compliance
β =Coefficient indicating rate of change of variable
α= Constant
X1 =Modernization of tax administration
Ɛ - Error term

Model 2
Where;
$Yi = \alpha + \beta 1 X1i + \beta 2 X1i.Mi + \varepsilon i$
The above model is a multiple regression model with interaction terms. In this model:
Yi= is the dependent variable (the variable you are trying to predict)
α =is the intercept term
β1 =β1, is the coefficients associated with the independent variables X1 respectively
β2, is the coefficients associated with the interaction terms between X1 and the moderator variable Mi
X =X1 is the independent variable (predictors or features)
Mi is the moderator variable
εi represents the error term or residual for the i-th observation

This model allows you to assess how the relationship between the independent variables X1 and the dependent variable Y is influenced by the moderator variable M. The analysis was carried out through application of SPSS. The Significance levels will be counted at 95% degree of confidence level with significance level will be at $p < 0.05$.

The methodology outlined in this chapter is meticulously designed to address the methods used in this chapter. It is crafted to thoroughly address the study's objectives, focusing on evaluating the impact of tax compliance on revenue generation for the Khyber Pakhtunkhwa Revenue Authority (KPRA). It examines critical compliance activities such as registration, tax return filing, lodging and resolution of complaints, and the costs associated with these processes. This approach includes detailed data collection and analytical strategies to understand tax compliance costs, the effectiveness of tax modernization, and the influence of tax awareness and education on these dynamics. Overall, the methodology is designed to assess taxpayer knowledge and behaviour, which are crucial in understanding and improving the revenue collection efficiency of KPRA.

Results and Discussions

This chapter focuses on analyzing and interpreting the data gathered from the primary source through a questionnaire managed through sorting, editing, classification, coding, and analysis using SPSS. The data analysis adhered to stringent model assumptions such as linearity, independence, constant variance, and normality of errors to ensure unbiased and efficient estimates, verified through diagnostic tests. The analysis covered multivariate regression to estimate and evaluate the significance of coefficients, check frequency percentages with graphs, and use regression and correlation analyses for hypothesis testing. This comprehensive statistical approach, including a descriptive profile of the taxpayers, highlights the robust methodology employed to ascertain significant relationships between the studied variables.

Results and Research

The survey, which included 440 taxpayers, included 95.20% male and 4.80% female participants and demonstrated a preference for tax self-registration. This trend was particularly notable in the Peshawar region and within sectors such as construction and hospitality. Respondents recommended that the KPRA streamline tax processes to improve ease of use. These findings underscore the necessity for KPRA to refine tax management practices and introduce specific policies aimed at enhancing taxpayer compliance and engagement.

Table 1: Suggestions to enhance KPRA registration processes, filing tax return to KPRA, registering complaints grievances to KPRA resolution of complaints/ grievances

Suggestion point	Frequency	Percentages (%)
No suggestion	224	50.90
Already an easy process.	111	25.20
Awareness campaigns	41	9.30
User friendly App	37	8.40
Paperless process for registration	10	2.30
Share videos of registration process on social media	6	1.40
Urdu manual for registration	4	0.90
Synchronized with FBR	3	0.70
24/7 service	2	0.50
Incentives based registration	1	0.20
mobile service for female taxpayer registration	1	0.20
Total	440	100

Table 1 show majority of respondents (50.90%) expressed satisfaction with the current Khyber Pakhtunkhwa Revenue Authority (KPRA) registration processes, suggesting its adequacy, while others proposed enhancements such as a user-friendly app (8.40%) and awareness campaigns (9.30%), emphasizing the importance of technological integration and education in tax administration systems as discussed by OECD (2012). Smaller groups advocated for modern approaches like paperless processes and better integration with federal systems, aligning with global trends towards digitalization and effective tax administration (Masinde & Makau, 2010; James & Alley, 2004). These suggestions reflect a broader perspective on enhancing efficiency and taxpayer engagement through technology and communication.

Table 2: Do you receive facilitation from KPRA in the following activities, and has it contributed to an improvement in your compliance level

Option	Frequency	Percentages (%)
Account Registration	102	23.20
Documents/Attachments Required	118	26.80
No Facilitation	38	8.60
In-person filing	64	14.50
Other: done by our own	14	3.20

Table 2 shows a substantial portion of respondents (23.20% for account registration and 26.80% for document assistance) reported receiving facilitation from the Khyber Pakhtunkhwa Revenue Authority (KPRA) during crucial tax compliance activities, highlighting the positive impact of supportive tax administration on taxpayer compliance as emphasized in literature by OECD (2012) and Masinde and Makau (2010). However, a smaller percentage (8.60%) indicated no facilitation received, suggesting potential areas for KPRA's improvement in engagement and support strategies to enhance overall tax compliance. These insights underscore the importance of proactive and facilitating tax authorities in improving taxpayer compliance and simplifying processes, aligning with findings that effective administration and technology enhance taxpayer engagement and compliance (James & Alley, 2004; OECD, 2012).

Table 3: Primary source of tax awareness and education for services tax registration, filing of tax return with KPRA and registering complaints or grievances to KPRA

Other Places	Frequency	Percentages (%)
Physically visiting the KPRA facility	116	26.40
KPRA Website	112	25.50
Tax Consultants (Experts)	8	1.80
Word of Mouth (Family/Friends)	1	0.20
Office Staff	3	0.70
Registration drive	10	2.30
KPRA Official visited	1	0.20

Table 3 show the taxpayer awareness sources. The analysis show that physical visited to the KPRA facility (26.40%) and the use of the KPRA website (25.50%) are the primary methods through which taxpayers gain awareness and education about services tax registration, reflecting a balanced preference for both direct interactions and digital resources (OECD, 2012). Although tax consultants (1.80%) and other informal methods like word of mouth and KPRA staff interactions provide some level of education, they are significantly less utilized, aligning with the findings that effective tax administration involves a blend of personal contact

and technology-enhanced resources (James & Alley, 2004; OECD, 2012). These insights reinforce the importance of accessible and versatile educational resources in improving tax compliance and facilitating taxpayer engagement, as supported by literature indicating the benefits of both in-person and online tax administration strategies (Masinde & Makau, 2010).

Correlation Analysis
The correlation analysis underscores a significant positive correlation between tax modernization (TM) and tax compliance (TC), with enhancements in tax modernization efforts leading to improved compliance (Pearson Correlation coefficient = .144**, p = .002). This finding confirms the hypothesis that technological advancements in tax systems effectively promote compliance behavior, supporting earlier studies by Adhiambo (2019), Chebusit et al. (2014), and Muturi (2015) which observed similar significant correlations. These results collectively highlight the impactful role of tax system modernization on increasing tax compliance rates.

Table 4: Pearson Correlation

		TK	TC	TM
TC	Pearson Correlation	.146**	1	
	Sig. (2-tailed)	.002		
TM	Pearson Correlation	.580**	.144**	1
	Sig. (2-tailed)	.000	.002	
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Hypothesis Testing
The hypotheses and other statistical tests were conducted in the context of the study by Adhiambo (2019), Chebusit et al. (2014), and Muturi (2015).
H_1: Tax modernization has a significance impact on tax compliance.

Table 5: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.295[a]	.087	.085	.29040

The correlation coefficient of 0.295 result show positive relationship between tax modernization and tax compliance, though the model only explains 8.7% of the variability in tax compliance. The standard error of estimate is 0.290, indicating the average deviation of observations from the predicted values.

Table 6: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.517	1	3.517	41.706	.000[b]
	Residual	36.938	438	.084		
	Total	40.455	439			

The correlation coefficient of 0.295 suggests a moderate positive relationship between tax modernization and tax compliance, though the model only explains about 8.7% of the variability in tax compliance. The standard error of estimate is 0.290, indicating the average deviation of observations from the predicted values.

Table 7: Coefficients[a]

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.721	.031		23.139	.000
	TM	.085	.013	.295	6.458	.000

The regression analysis demonstrates that tax modernization significantly influences tax compliance, with a statistically significant p-value (< 0.001) for both the overall model and the TM coefficient. Despite the low explanatory power of the model (0.09% variability in tax compliance), the positive standardized effect size of 0.295 indicates that as tax modernization increases, so does tax compliance, suggesting other influential factors are not captured by this model.

H_2: Tax modernization has a significance impact on tax compliance with moderating role of tax awareness & education.

Table 8: Model summary

	R	R-sq	MSE	F	Df1	Df2	p
	0.3390	0.1149	0.0705	18.8758	3.0000	436.0000	.0000
Model	coeff	Se	T	P	LLCI	ULCI	
Constanr	-0.5519	0.3974	-1.3887	0.1656	-1.3331	0.2292	
TM	1.0587	0.1762	6.0082	0.0000	0.7124	1.4051	
TAE	1.4704	0.2797	5.2569	0.0000	0.9206	2.0201	
Lnt_1	-.7901	0.1311	-6.0273	0.000	-1.0478	-0.5325	

Product terms key: Int_1 :   TM   x   TAE

Test(s) of highest order unconditional interaction(s):

R2-CHNG	F	Df1	Df2	p
X*W 0.7373	0.737	36.3289	1.0000	436.000	0.0000

Focal predict: TM   (X)
Mod var: TAE   (W)

Conditional effects of the focal predictor at values of the moderator(s):

TAE	Effect	se	t	p	LLCI	ULCI
1.3200	.0158	.0210	.7501	.4536	-.0255	.0570
1.8600	-.4109	.0720	-5.7097	.0000	-.5524	-.2695
1.8600	-.4109	.0720	-5.7097	.0000	-.5524	-.2695

The regression model illustrates that approximately 11.5% of the variability in tax compliance (TC) is explained by predictors tax modernization (TM) and tax audit efficiency (TAE), with a statistically significant overall model ($p < 0.001$). Coefficients suggest an increase in TC with each unit increase in TM and TAE, though their interaction reduces TC. The interaction between TM and TAE significantly alters the impact of TM on TC, particularly at different levels of TAE, indicating that the effect of TM on TC is conditional on the values of TAE. This comprehensive model highlights the importance of both factors and their interaction in understanding TC.

Findings

The service tax system research findings provide compelling insights into the dynamics of tax compliance, mainly focusing on the impacts of tax modernization and the role of tax awareness and education. These results are strongly associated with the research objectives, and each key finding relates distinctly to the specified objectives, offering a detailed understanding of the interplays within the tax authority framework. Here is a detailed discussion of how the findings meet each objective:

Impact of Tax Modernization on Tax Compliance

The data indicates that tax modernization has a moderate positive relationship with tax compliance. This is evidenced by the correlation analysis showing a Pearson Correlation coefficient of .144**, which, while modest, is statistically significant (p = .002). This result supports the hypothesis that enhancements in tax system infrastructure, mainly through technological advancements, can positively affect compliance rates. The regression analysis also supports this, demonstrating a significant p-value and a positive coefficient, although it explains only a tiny percentage (8.7%) of the variability in tax compliance.

These findings directly address assessing the effectiveness of tax administration and modernization efforts. The suggestions for improvements, such as user-friendly apps and paperless processes, indicate a significant preference for technological integration, simplifying the compliance process and enhancing taxpayer engagement. This aligns with scholarly work by authors like James and Alley (2004) and OECD (2012), emphasizing technology's crucial role in effective tax administration.

Relationship of Tax Awareness and Education on Tax Compliance

The regression model's interaction effects highlight the role of tax awareness and education as moderators. It was found that the inclusion of tax awareness & education in the model alters the impact of tax modernization on tax compliance, indicating a nuanced interplay where the levels of taxpayer education and awareness condition the effect of modernization.

This finding highlights the critical role of robust educational and awareness programs, evidenced by the predominance of physical visits and the KPRA website as vital sources of taxpayer education. The infrequent use of tax consultants and informal methods indicates a gap that could be bridged by more structured and accessible information dissemination to boost compliance.

These insights directly correlate with the research objective to investigate how enhanced awareness and education can improve taxpayer compliance. The data suggests that while modernization directly impacts compliance, its effectiveness can be significantly amplified or hindered by taxpayers' level of tax awareness and education. This aligns with the findings from Masinde and Makau (2010) and OECD (2012), which advocate for the synergistic effects of technology and educational efforts on compliance outcomes.

This study provides a detailed analysis of factors influencing tax compliance in service taxes, offering key insights and strategic levers for enhancing tax frameworks. It lays a strong foundation for policy development and further research in this vital public finance sector.

Conclusion

In retrospectively examining the research objectives of the previous studies, particularly those with comparable and divergent results, this discussion aims to shed light on the accomplishments and insights gained from this study. The findings resonate with existing literature, aligning with studies by Adhiambo (2019) and Chebusit et al. (2014), emphasizing the multifaceted motivations of taxpayers.

Assessment of the Effectiveness of Tax Administration and Modernization

The study conclusively demonstrates that the Khyber Pakhtunkhwa Revenue Authority's (KPRA) tax administration and modernization initiatives are effective, echoing the positive relationship between tax knowledge and compliance found in the works of Zuhdi (2019) and the OECD (2012). These findings confirm the critical role of modernization in boosting tax compliance within the KPRA. It is highlighted that an advanced, well-managed tax system increases tax knowledge and awareness and positively impacts compliance. The study recommends that KPRA persist in its technological enhancements, focus on creating user-friendly platforms, and maintain strong governance practices to improve effectiveness, streamline processes, and foster a compliant tax environment.

Examination of the Moderating Role of Tax Awareness and Education

The study examined how tax awareness and education moderate the relationship between tax compliance and its determinants, supporting the findings of Damajanti and Karim (2017) and OECD (2012) on the importance of awareness in reducing tax evasion. It suggests the implementation of targeted awareness campaigns using various media to educate specific taxpayer segments, enhancing overall compliance. The research emphasizes continuous monitoring and adjustments to these interventions, highlighting their critical role in fostering a compliant tax environment.

This study enriches the tax compliance literature by exploring the interaction of tax knowledge, compliance costs, and modernization within the KPRA, revealing how variations in awareness and education levels can impact compliance. It offers targeted recommendations for policymakers to enhance compliance strategies and optimize revenue.

Recommendations

The study provides tailored recommendations for improving tax compliance through targeted awareness campaigns, educational initiatives, and integration of modern technology within the tax framework. These recommendations include enhancing communication strategies, simplifying tax registration and filing processes, and promoting the benefits of tax modernization to reduce compliance costs and improve taxpayer experiences. Additionally, it emphasizes the importance of continuous education and awareness programs that not only disseminate general tax knowledge but also address specific compliance challenges, fostering a deeper understanding and compliance among taxpayers.

Theoretical Implications

The objectives of this study offer a more comprehensive and contextualized framework for exploring the intricacies of tax compliance within the services tax authority. The theoretical implications extend beyond individual tax compliance behaviors, contributing to a critical understanding of the broader dynamics of tax compliance. By addressing the multifaceted dimensions of tax compliance, this study enriches theoretical perspectives in the field, providing a foundation for future research and discussions on tax compliance dynamics in diverse contexts.

Managerial Implications

From a managerial standpoint, the recommendations derived from this study present actionable strategies for tax authorities and policymakers. The focal points on communication, education, and technology integration align with practical approaches aimed at enhancing the effectiveness of tax administration. The specific recommendations are tailored to address the diverse needs of taxpayers, ensuring the creation of a user-friendly and supportive

environment. These managerial insights provide a roadmap for implementing tangible changes in tax administration practices, fostering a more compliant and informed taxpayer community.

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