

## E-Governance, Administrative Hurdles, and Online Income Tax Compliance Among Nepalese Firms

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### Abstract

*The Government of Nepal has implemented several e-governance initiatives to modernize tax administration, including online income tax filing, electronic payment systems, and Permanent Account Number (PAN) services through the Inland Revenue Department (IRD). Despite these efforts, Nepalese firms continue to experience significant challenges in tax compliance due to technological limitations, organizational constraints, and persistent administrative hurdles. This study investigates the combined influence of e-governance factors and administrative barriers on online income tax compliance behavior among Nepalese firms. Grounded in the Technology Acceptance Model (TAM) and administrative burden theory, the study examines key determinants such as ease of use, perceived usefulness, IT infrastructure readiness, management support, security and privacy concerns, and administrative obstacles. Firm size and industry type are incorporated as moderating variables to better understand contextual variations. A quantitative, cross-sectional research design was adopted, with data collected from 286 respondents across diverse sectors. Analytical methods include descriptive statistics, correlation, regression, moderation analysis, and confirmatory factor analysis (CFA), providing insights and policy recommendations for improving digital tax governance.*

**Keywords:** E-Governance; Online Income Tax Filing; Administrative Hurdles; Tax Compliance Behavior; PAN Services; Nepalese Firms

## Background

The digital transformation of public administration has become a global priority under the broader framework of e-governance reforms. Governments worldwide are increasingly leveraging information and communication technologies (ICTs) to enhance transparency, accountability, efficiency, and citizen-centric service delivery. In the domain of taxation, e-governance initiatives such as electronic filing (e-filing), electronic payment (e-payment), online registration, and digital record management have significantly reshaped tax administration systems. These reforms are intended to reduce compliance costs, minimize bureaucratic inefficiencies, and strengthen voluntary tax compliance behavior among individuals and business entities.

In developing economies, however, the effectiveness of e-governance in tax administration remains contingent upon infrastructural readiness, institutional capacity, digital literacy, and procedural integration between online and offline systems. While digital platforms promise seamless services, practical challenges often persist during the implementation phase. Industries and taxpayers may encounter technical system errors, limited interoperability among government databases, server downtime, unclear procedural guidelines, and administrative bottlenecks. These structural and operational limitations can undermine the perceived usefulness and trustworthiness of digital tax systems.

In the context of Nepal, the Inland Revenue Department (IRD) has introduced several e-governance initiatives, including the Taxpayer Portal, online PAN registration, electronic income tax return submission, and digital tax payment systems. These initiatives are aligned with the Government of Nepal's broader Digital Nepal Framework and public sector modernization agenda. The primary objective is to streamline tax compliance procedures, improve revenue collection efficiency, and reduce physical visits to tax offices. Despite these advancements,

Nepalese industries continue to report mixed experiences with the online tax system.

One critical yet underexplored dimension of tax compliance in Nepal relates to procedural hurdles encountered during payment processing and physical visits to tax offices for the collection of tax clearance certificates, PAN-related documentation, or confirmation of tax payments. Although online systems facilitate filing and payment, taxpayers often need to physically visit tax offices to verify records, resolve discrepancies, or obtain official documents. During such visits, they may face long waiting times, document mismatches, unclear communication from officials, procedural redundancies, and coordination gaps between digital records and manual verification processes. These hurdles increase compliance costs in terms of time, financial resources, and administrative burden.

From a behavioral perspective, tax compliance is influenced not only by regulatory enforcement and penalties but also by perceived system efficiency, fairness, transparency, and procedural convenience. If taxpayers experience repeated obstacles in payment confirmation or document collection despite using online platforms, their trust in e-governance systems may decline. This could negatively affect voluntary compliance behavior, especially among small and medium-sized enterprises (SMEs) that operate with limited administrative capacity.

Existing literature on e-governance and tax compliance largely focuses on technological adoption, perceived usefulness, ease of use, trust, and institutional quality. However, limited empirical attention has been given to post-payment procedural barriers and tax office visit-related hurdles as determinants of compliance behavior, particularly in developing countries like Nepal. Understanding these operational bottlenecks is crucial because the success of e-

governance is not solely determined by system availability but by the end-to-end efficiency of service delivery.

Therefore, there is a compelling need to examine how e-governance initiatives influence online income tax compliance among Nepalese industries while incorporating the moderating or mediating effect of hurdles experienced during payment processing and tax office visits for PAN and tax document collection. By addressing this gap, the study contributes to the theoretical enrichment of e-governance and compliance literature and offers practical insights for policymakers seeking to enhance the effectiveness of digital tax administration systems in Nepal.

In sum, the transformation toward digital tax governance in Nepal represents a significant institutional reform. However, the persistence of operational and procedural barriers, particularly during payment confirmation and physical documentation processes, raises critical questions about system integration, user experience, and compliance sustainability. Investigating these dynamics provides a timely and policy-relevant foundation for strengthening e-governance effectiveness and improving tax compliance outcomes in Nepalese industries.

### **Research Objectives**

- To examine the effect of e-governance factors (ease of use, perceived usefulness, IT infrastructure readiness, management support, and security & privacy concerns) on tax compliance behavior among Nepalese firms.
- To analyze the impact of administrative hurdles on online income tax compliance behavior.
- To assess the moderating role of taxpayer literacy and types of firms in the relationship between e-governance factors, administrative hurdles, and tax compliance behavior.

## Literature Review

### E-Governance and Tax Administration

E-governance has become central to modernizing tax administration by improving procedural efficiency, transparency, and taxpayer convenience. Digital tools such as e-filing, online payment systems, and integrated taxpayer portals are designed to reduce manual errors, decrease compliance costs, and minimize direct contact between taxpayers and officials. Recent evidence from various studies shows that robust implementation of e-tax systems leads to improved revenue performance, higher compliance rates, and greater taxpayer satisfaction (Anggraeni, 2025; Warmadewa, 2026). For example, research indicates that digital tax platforms restructure compliance workflows and embed tax obligations into automated processes, fostering systematic compliance behavior among corporate taxpayers (Warmadewa, 2026). Despite these benefits, the effectiveness of e-governance depends on comprehensive integration with backend processes and institutional support. Nepal's tax authority is currently planning transformational reforms to achieve end-to-end online tax services, including faceless audits and digital issuance of clearance certificates, aimed at eliminating physical visits and improving compliance transparency (Fiscal Nepal, 2026). However, challenges remain where hybrid systems continue to require taxpayers to navigate both digital interfaces and in-person administrative steps, limiting the full potential of digital taxation.

### Technology Acceptance and Compliance Behavior

Research consistently applies technology acceptance frameworks to explain taxpayer behavior toward digital tax systems. The Technology Acceptance Model (TAM) posits that perceived usefulness and ease of use are critical determinants of user adoption. Studies show that when digital tax systems are intuitive and provide clear benefits—such as time savings and error reduction—taxpayers are more likely to adopt and consistently use them (Li et al., 2024).

Additionally, extensions like UTAUT emphasize facilitating conditions, performance expectancy, and social influence as factors shaping technology acceptance in public services, particularly where digital literacy and infrastructure vary widely. Empirical findings suggest that system reliability and supportive infrastructure significantly enhance user engagement with e-tax platforms. Conversely, when digital systems are perceived as complex or unstable, users tend to prefer manual procedures despite having access to online options (Anggraeni, 2025). In the Nepalese context, delayed confirmations and system fragility may weaken the perceived benefits of e-governance, lowering trust and adoption intention among industrial taxpayers.

### **Organizational Readiness and System Integration**

Organizational readiness and management support are crucial for the successful deployment of tax e-governance systems. Countries with adequate ICT infrastructure, digital literacy, and institutional capacity have witnessed smoother transitions to digital tax administration. Research highlights that many e-government initiatives fail due to mismatches between technological design and organizational capacity (Dhungana et al., 2025). Institutional support—including training, resources, and internal coordination improves taxpayers' ability to interact effectively with digital tax platforms. In Nepal, IRD's efforts toward standardized reporting and leveraging business analytics demonstrate progress; however, the absence of comprehensive analytical platforms may hinder independent decision-making and reduce the operational efficiency of digital tax systems (Dhungana et al., 2025). These gaps influence compliance behavior since firms with limited infrastructure or support may resort to physical visits for tax processing, weakening the effectiveness of online systems.

### **Security, Privacy, and Trust in E-Governance**

Security and privacy concerns are significant predictors of user trust, a key factor in digital compliance behavior. Tax data are inherently sensitive, and perceived

vulnerabilities in digital systems can significantly deter adoption. Cross-sectional studies indicate that enhanced data protection, clear privacy policies, and system transparency increase taxpayer confidence in online platforms. The integration of cybersecurity protocols and transparent communication reduces perceived risk and enhances user trust. Although research in this area is still emerging, evidence suggests that enhancing security and reliability is essential for sustaining long-term compliance behavior with digital tax systems. Trust-building mechanisms are particularly relevant in developing economies where fear of data misuse and lack of robust security protocols can impede the uptake of online services.

### **Administrative Hurdles and Compliance Outcomes**

While technological acceptance and organizational readiness are important, recent literature highlights that administrative and procedural barriers significantly shape compliance outcomes in hybrid digital environments. Administrative hurdles include repeated office visits, manual validation of documents, delayed payment confirmations, and fragmented backend systems. In many developing contexts, digital frontends exist, but core administrative processes remain manual, resulting in “partial digitalization.” Such procedural complexity increases compliance costs in terms of time, effort, and financial resources (Rizkina, 2025). Studies show that bureaucratic bottlenecks and insufficient system integration reduce satisfaction with e-governance initiatives and undermine voluntary compliance behavior. In Nepal, several tax services—including PAN authentication and tax clearance confirmations—still require physical interaction despite online submissions, creating hybrid compliance pathways that discourage taxpayers (Paudel & Katuwal, 2023). These hurdles moderate the positive effects of e-governance, revealing that digital transformation must be accompanied by comprehensive administrative reform to fully realize compliance improvements.

## Theories

This study is grounded in five major theoretical perspectives that explain online income tax compliance behavior within an e-governance framework, particularly in partially digitalized systems such as Nepal. The Technology Acceptance Model (TAM) posits that perceived usefulness and perceived ease of use determine users' intention to adopt technology (Davis, 1989; Davis et al., 1989; Venkatesh & Davis, 2000). In the context of online tax systems, industries are more likely to comply electronically when digital platforms are user-friendly, reliable, and time-saving. However, technical errors, payment confirmation delays, and procedural complexity may reduce system acceptance and weaken compliance intention.

The Unified Theory of Acceptance and Use of Technology (UTAUT) extends TAM by incorporating performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003; Venkatesh et al., 2012; Williams et al., 2015). In developing economies, facilitating conditions such as ICT infrastructure, institutional coordination, and technical support are critical. When taxpayers must physically visit tax offices despite online filing, weak facilitating conditions may undermine digital compliance behavior.

Institutional Theory explains how regulatory pressures, administrative norms, and organizational practices shape behavior (DiMaggio & Powell, 1983; Scott, 2008; North, 1990). In Nepal's hybrid tax system, the coexistence of digital platforms and manual verification processes reflects institutional misalignment. Such inconsistencies may increase compliance costs and reduce the legitimacy of e-governance reforms.

Deterrence Theory suggests that compliance depends on the perceived probability of detection and severity of penalties (Becker, 1968; Allingham & Sandmo, 1972; Kirchler, 2007). While digital systems enhance monitoring and transparency, administrative inefficiencies may weaken perceptions of fairness,

potentially reducing the effectiveness of deterrence mechanisms. Finally, Behavioral Tax Compliance Theory emphasizes psychological determinants such as trust, perceived fairness, and moral obligation (Frey & Torgler, 2007; Kirchler et al., 2008; Torgler, 2003). Efficient and transparent e-governance systems can enhance trust and voluntary compliance, whereas repeated administrative hurdles may undermine intrinsic motivation to comply. Together, these theories provide an integrated framework to examine how technological, institutional, enforcement, and behavioral factors influence online income tax compliance among Nepalese industries.

### **Empirical Review**

#### **Ease of Use and Tax Compliance Behavior**

Ease of use refers to the extent to which taxpayers perceive online tax systems as simple, clear, and effortless to operate. According to the Technology Acceptance Model (TAM), systems that are easy to use increase user acceptance and intention to adopt digital platforms (Davis, 1989; Venkatesh & Davis, 2000). In the context of e-governance, especially in developing countries like Nepal, complex interfaces, technical errors, and procedural difficulties can discourage taxpayers from using online systems. Conversely, user-friendly platforms reduce cognitive burden and procedural complexity, encouraging voluntary compliance. Empirical studies also confirm that simplicity and accessibility of digital platforms significantly enhance compliance behavior. Based on the above discussion, the following hypothesis is proposed:

*H1: Ease of use positively affects tax compliance behavior.*

#### **Perceived Usefulness and Tax Compliance Behavior**

Perceived usefulness refers to the degree to which taxpayers believe that using online systems improves efficiency, reduces time, and simplifies tax-related processes. TAM suggests that users are more likely to adopt technologies that provide clear benefits and enhance performance (Davis et al., 1989). In Nepal's

partially digitalized tax system, taxpayers are more inclined to use online platforms when they perceive advantages such as faster processing, reduced paperwork, and convenience. However, system inefficiencies and delays in confirmation may reduce perceived usefulness. Prior studies highlight that when digital systems are viewed as beneficial and productive, they significantly increase compliance behavior. Based on this evidence, the following hypothesis is proposed:

*H2: Perceived usefulness positively influences tax compliance behavior.*

### **IT Infrastructure Readiness and Tax Compliance Behavior**

IT infrastructure readiness refers to the availability of technological resources such as reliable internet connectivity, secure servers, and technical support required to operate digital platforms effectively. The Unified Theory of Acceptance and Use of Technology (UTAUT) emphasizes facilitating conditions as a critical factor influencing technology adoption (Venkatesh et al., 2003). In developing economies like Nepal, inadequate infrastructure and limited technical support can hinder the effective use of online tax systems. On the other hand, firms with strong IT capabilities are better positioned to adopt digital platforms and comply efficiently. Empirical studies confirm that improved infrastructure significantly enhances e-governance adoption and compliance behavior. Based on the above arguments, the following hypothesis is proposed:

*H3: IT infrastructure readiness positively affects tax compliance behavior.*

### **Management Support and Tax Compliance Behavior**

Management support refers to the extent to which organizational leadership encourages, facilitates, and invests in the use of digital systems. Institutional and organizational theories suggest that leadership commitment plays a crucial role in shaping technology adoption and compliance behavior (Scott, 2008). In the context of Nepalese industries, management support ensures training, allocation of resources, and motivation for employees to adopt online tax systems.

Organizations with proactive leadership are more likely to embrace digital transformation and achieve higher compliance levels. Empirical evidence also shows that strong managerial support enhances user confidence and system utilization. Therefore, the following hypothesis is proposed:

*H4: Management support positively influences tax compliance behavior.*

### **Security, Privacy, and Tax Compliance Behavior**

Security and privacy refer to the protection of financial data and the confidentiality of taxpayer information within online systems. Behavioral Tax Compliance Theory emphasizes that trust and perceived fairness are essential for voluntary compliance (Frey & Torgler, 2007). In digital tax systems, concerns regarding data breaches, unauthorized access, and lack of transparency may discourage taxpayers from using online platforms. Conversely, secure systems with strong privacy measures enhance trust and encourage compliance. Empirical studies indicate that confidence in system security significantly influences the adoption of e-governance services. Based on this reasoning, the following hypothesis is proposed:

*H5: Security and privacy positively influence tax compliance behavior.*

### **Administrative Hurdles and Tax Compliance Behavior**

Administrative hurdles refer to procedural inefficiencies such as repeated physical visits, manual verification, and complex bureaucratic requirements. Institutional Theory highlights that misalignment between digital systems and traditional administrative processes can create inefficiencies and reduce system effectiveness (DiMaggio & Powell, 1983). In Nepal's hybrid tax system, the coexistence of online platforms and offline procedures increases compliance burden and discourages digital adoption. Studies show that excessive administrative requirements negatively affect user experience and reduce compliance behavior. Therefore, minimizing such barriers is essential for

improving e-governance outcomes. Based on the above discussion, the following hypothesis is proposed:

*H6: Administrative hurdles negatively affect tax compliance behavior.*

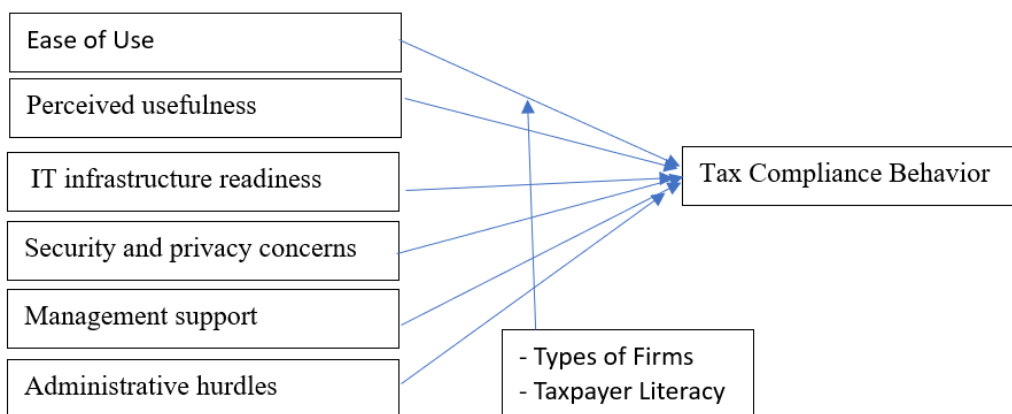
### **Moderating Role of Taxpayer Literacy and Types of Firms**

Taxpayer literacy refers to the knowledge and understanding of tax regulations and digital systems, while types of firms represent differences in organizational capacity and resources. According to UTAUT and Behavioral Tax Compliance Theory, user capability and contextual factors can influence the strength of relationships between variables. In Nepal, firms with higher digital literacy and better resources are more capable of utilizing online systems effectively, while less developed firms may face greater challenges. These moderating factors can strengthen or weaken the impact of technological and administrative variables on compliance behavior. Based on this, the following hypothesis is proposed:

*H7: Taxpayer literacy and types of firms moderate the relationship between independent variables and tax compliance behavior.*

### **Figure 1**

#### *Conceptual Framework*



*Source:* Developed by the Researcher based on the Tam and Administrative Burden theories

## **Research Methodology**

### **Research Design**

A quantitative, cross-sectional research design was adopted to examine the relationships among e-governance, administrative hurdles, and online income tax compliance in Nepalese industries (Creswell & Creswell, 2018; Saunders et al., 2019; Sekaran & Bougie, 2020). This design allows measurement of causal relationships at a single point in time, suitable for testing hypotheses using TAM, institutional, and administrative barrier perspectives.

### **Population and Sample**

The study targeted finance managers, accountants, and administrative staff from manufacturing, service, SMEs, and trading industries in Nepal. A total of 286 respondents were selected using stratified and convenience sampling, ensuring representation across firm types and ownership (Hair et al., 2019; Bryman & Bell, 2015; Etikan et al., 2016). Stratification considered private limited, proprietorship, and corporate firms to capture diverse compliance experiences.

### **Data Collection Instrument**

Data were collected via a structured questionnaire with items adapted from previous studies. All items were measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire included: - Ease of use and perceived usefulness, IT infrastructure readiness and management support, Security, privacy, and trust - Administrative hurdles, Online income tax compliance behavior. A pilot test with 30 respondents ensured clarity and reliability before full-scale data collection (Davis, 1989; Venkatesh et al., 2003; Ghimire, 2025).

### **Reliability and Validity**

Cronbach's alpha for all constructs exceeded 0.70, confirming internal consistency (Nunnally & Bernstein, 1994; Hair et al., 2019; Tavakol & Dennick, 2011). Confirmatory Factor Analysis (CFA) validated measurement constructs

with factor loadings above 0.50, CR > 0.70, and AVE > 0.50 (Hair et al., 2019; Kline, 2016; Byrne, 2016).

### **Data Collection Procedure**

Data were collected from January to May 2025 through online and physical questionnaires. Participants were informed about voluntary participation, confidentiality, and the research purpose. Reminders were sent to improve response rates (Bryman & Bell, 2015; Creswell & Creswell, 2018; Fowler, 2014).

### **Data Analysis Techniques**

#### **Descriptive Statistics**

Mean, standard deviation, frequency, and percentage analyses summarized respondent profiles and key variable distributions. This provided an overview of patterns in perceptions of e-governance and administrative hurdles (Pallant, 2020; Field, 2018; Hair et al., 2019).

#### **Reliability Analysis**

Internal consistency of constructs was assessed via Cronbach's alpha. Values above 0.70 indicated acceptable reliability and measurement consistency (Nunnally & Bernstein, 1994; Tavakol & Dennick, 2011).

#### **Correlation Analysis**

Pearson correlation coefficients were calculated to examine the strength and direction of relationships between independent, moderator, and dependent variables (Field, 2018; Gravetter & Wallnau, 2017).

#### **Regression Analysis**

Multiple regression tested the predictive effect of e-governance, organizational readiness, and trust on online income tax compliance, quantifying the variance explained (Cohen et al., 2013; Hair et al., 2019).

### **Moderation Analysis**

Types of firms and taxpayer literacy were tested as a moderating variable using interaction terms to examine changes in compliance behavior under different levels of administrative barriers (Hayes, 2018; Preacher et al., 2007).

### **Confirmatory Factor Analysis (CFA)**

CFA verified construct validity and assessed measurement model fit. Goodness-of-fit indices confirmed the suitability of the hypothesized structure (Kline, 2016; Byrne, 2016).

### **Ethical Considerations**

Participation was voluntary, confidential, and informed consent was obtained. Data were securely stored and used solely for research purposes (Bryman & Bell, 2015; Creswell & Creswell, 2018; Saunders et al., 2019).

### **Data Analysis**

#### **Demographic Profile of Respondents**

A total of 286 respondents were surveyed from various industrial firms in Nepal. Firms were classified according to the Inland Revenue Department (IRD) categories: proprietorship, partnership, private limited, public limited, and non-profit/other organizations. Demographic variables included company type, gender, age, education, and work experience.

**Table 1**

*Demographic Profile of Respondents (N = 286)*

<b>Variable</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Types of firms	Proprietorship	72	25.2
	Partnership	38	13.3
	Private Limited	128	44.8
	Public Limited	28	9.8

Variable	Category	Frequency	Percentage (%)
	Non-Profit/Other	20	7.0
Gender	Male	182	63.6
	Female	104	36.4
Age	21–30	80	28.0
	31–40	120	41.9
	41–50	60	21.0
	>50	26	9.1
Education	Bachelor’s	138	48.3
	Master’s	96	33.6
	Training Diploma/Other	52	18.1
Experience	<5 yrs	88	30.8
	5–10 yrs	116	40.6
	>10 yrs	82	28.7

*Source:* Field Survey, 2025

Private Limited companies dominated the sample (44.8%), reflecting the prominence of SMEs in Nepal. Male respondents were 63.6%, with the majority aged 31–40 years (41.9%), representing mid-career professionals. Educational and experience levels indicate that respondents are sufficiently competent to engage with online tax systems.

### **Descriptive Analysis**

Descriptive statistics were computed for all variables to examine central tendencies and dispersion. Table 5.1 presents mean, standard deviation, minimum, and maximum values for key constructs: ease of use, perceived

usefulness, IT readiness, management support, security/privacy, administrative hurdles, and tax compliance behavior.

**Table 2**

*Descriptive Statistics (N = 286)*

<b>Construct</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
Ease of Use	4.12	0.68	2.0	5.0
Perceived Usefulness	4.05	0.71	2.0	5.0
IT Infrastructure Readiness	3.92	0.75	2.0	5.0
Management Support	3.88	0.79	1.0	5.0
Security & Privacy	3.76	0.82	1.0	5.0
Administrative Hurdles	3.54	0.85	1.0	5.0
Tax Compliance Behavior	4.02	0.70	2.0	5.0

Respondents generally reported high ease of use and perceived usefulness, suggesting a positive attitude toward online tax systems. Administrative hurdles scored slightly lower, highlighting ongoing challenges in interactions with physical offices.

### **Reliability and Validity**

#### ***Reliability***

Internal consistency was evaluated using Cronbach's alpha. All constructs exceeded 0.70, indicating strong reliability.

**Table 3**

*Reliability Statistics (Cronbach's Alpha)*

<b>Construct</b>	<b>Cronbach's Alpha</b>
Ease of Use	0.82
Perceived Usefulness	0.80
IT Infrastructure Readiness	0.78
Management Support	0.81
Security & Privacy	0.77
Administrative Hurdles	0.79
Tax Compliance Behavior	0.83

***Validity***

Construct validity was confirmed via Confirmatory Factor Analysis (CFA). All factor loadings  $> 0.60$ , Average Variance Extracted (AVE)  $> 0.50$ , and Composite Reliability (CR)  $> 0.70$ . Discriminant validity was verified as AVE exceeded squared correlations (Fornell & Larcker, 1981; Hair et al., 2019).

**Descriptive Statistics and Correlation**

Descriptive statistics were computed to assess the central tendency and dispersion of all constructs. Pearson correlation analysis was performed to examine preliminary relationships among the variables. Table 7.1 presents the means, standard deviations, and correlations.

**Table 4**

*Descriptive Statistics and Correlation Matrix (N = 286)*

Variable	Mean	SD	1	2	3	4	5	6	7
1. Ease of Use	4.12	0.68	1						
2. Perceived Usefulness	4.05	0.71	0.64**	1					
3. IT Infrastructure Readiness	3.92	0.75	0.58**	0.61**	1				
4. Management Support	3.88	0.79	0.52**	0.55**	0.57**	1			
5. Security & Privacy	3.76	0.82	0.49**	0.50**	0.53**	0.51**	1		
6. Administrative Hurdles	3.54	0.85	-0.41**	-0.39**	-0.42**	-0.40**	-0.45**	1	
7. Tax Compliance Behavior	4.02	0.70	0.62**	0.63**	0.60**	0.57**	0.55**	-0.48**	1

\*\*p < 0.01; \*\*SD = Standard Deviation.

Positive correlations among ease of use, perceived usefulness, IT readiness, management support, and compliance behavior indicate strong relationships. Administrative hurdles negatively correlate with compliance behavior, suggesting that higher barriers reduce online tax compliance.

### Hypothesis Testing Using Regression Analysis

Multiple regression analyses were conducted to test the hypothesized relationships. Tax Compliance Behavior (TCB) was the dependent variable, while Ease of Use (EU), Perceived Usefulness (PU), IT Infrastructure Readiness

(ITR), Management Support (MS), Security & Privacy (SP), and Administrative Hurdles (AH) were independent variables.

**H1: Ease of Use positively influences Tax Compliance Behavior**

**Table 5**

*Regression Results*

Predictor	$\beta$	t	p
Ease of Use	0.29	5.12	<0.001

Ease of use significantly predicts tax compliance behavior ( $\beta = 0.29, p < 0.001$ ), supporting H1. This suggests that simpler, more user-friendly tax platforms encourage industries to comply with online tax procedures (Davis, 1989; Venkatesh et al., 2003; Abdul & Omar, 2019).

**H2: Perceived Usefulness positively influences Tax Compliance Behavior**

**Table 6**

*Regression Results*

Predictor	$\beta$	t	p
Perceived Usefulness	0.33	6.05	<0.001

Perceived usefulness is a strong predictor of compliance ( $\beta = 0.33, p < 0.001$ ). Industries are more likely to adopt online tax systems when they perceive that the platform improves efficiency and reduces processing time (Venkatesh et al., 2003; Mosha & Kihwele, 2025; Bhatnagar, 2003).

**H3: IT Infrastructure Readiness positively influences Tax Compliance Behavior**

**Table 7**

*Regression Results*

Predictor	$\beta$	t	p
IT Infrastructure Readiness	0.24	4.42	<0.001

IT infrastructure readiness significantly affects compliance ( $\beta = 0.24, p < 0.001$ ). Firms with reliable internet, updated hardware, and secure systems can efficiently utilize online platforms (Heeks, 2006; Thong, 2001; Paudel & Katuwal, 2023).

#### **H4: Management Support positively influences Tax Compliance Behavior**

**Table 8**

*Regression Results*

<b>Predictor</b>	<b><math>\beta</math></b>	<b>t</b>	<b>p</b>
Management Support	0.21	3.88	<0.001

Strong management support positively impacts online compliance. Supportive management ensures proper training and resources, which enables staff to adopt e-governance effectively (Heeks, 2006; Thong, 2001; Almarabeh & Qutaishat, 2010).

#### **H5: Security & Privacy positively influence Tax Compliance Behavior**

**Table 9**

*Regression Results*

<b>Predictor</b>	<b><math>\beta</math></b>	<b>t</b>	<b>p</b>
Security & Privacy	0.19	3.21	0.002

Perceived security and privacy significantly influence compliance behavior. Trust in digital systems encourages taxpayers to engage fully with online platforms (Alzahrani & Goodwin, 2014; Khatri & Rouse, 2022; Abdul & Omar, 2019).

**Table 10**

*Regression Results*

**H6: Administrative Hurdles negatively influence Tax Compliance Behavior**

Predictor	$\beta$	t	p
Administrative Hurdles	-0.31	-5.52	<0.001

Administrative hurdles negatively impact compliance ( $\beta = -0.31, p < 0.001$ ). Redundant procedures, manual verification, and repeated office visits reduce willingness to adopt online systems (Kumar & Best, 2006; Rana et al., 2021; Paudel & Katuwal, 2023).

**Moderation Analysis**

*Moderation Analysis: Types of Firms and Taxpayer Literacy*

To further explore the dynamics of online income tax compliance, moderation analyses were conducted using Types of Firms and Taxpayer Literacy as moderators. The purpose was to determine whether these variables influence the strength of relationships between independent variables (PEOU, PU, and Administrative Hurdles) and the dependent variable, Tax Compliance Behavior (TCB).

**Types of Firms as a Moderator**

Different types of firms exhibit varying organizational structures, IT readiness, and resource availability, which may alter how technological and administrative factors affect compliance. A multi-group moderation analysis revealed:

- *Ease of Use*  $\times$  *Company Type*:  $\beta = 0.09, p < 0.05$  — The positive effect of ease of use on compliance is stronger in Pvt. Ltd firms compared to proprietorships, where limited IT resources reduce the effectiveness of online platforms.

- *Perceived Usefulness* × *Company Type*:  $\beta = 0.07$ ,  $p < 0.05$  — Perceived usefulness encourages compliance more in structured organizations with dedicated finance teams.
- *Administrative Hurdles* × *Company Type*:  $\beta = -0.15$ ,  $p < 0.01$  — Procedural barriers impact proprietorships more than Pvt. Ltd firms due to lower administrative capacity and knowledge.

Types of Firms significantly moderate compliance behavior, with structured firms better able to influence digital systems despite hurdles (Heeks, 2006; Thong, 2001; Paudel & Katuwal, 2023).

### **Taxpayer Literacy as a Moderator**

Taxpayer literacy was measured based on knowledge of tax procedures, digital tools, and prior experience with e-filing. Moderation analysis showed:

- *PEOU* × *Taxpayer Literacy*:  $\beta = 0.14$ ,  $p < 0.01$  — Easier systems result in higher compliance, particularly among highly literate taxpayers.
- *PU* × *Taxpayer Literacy*:  $\beta = 0.12$ ,  $p < 0.05$  — Perceived usefulness is more influential for literate taxpayers who understand the benefits of digital filing.
- *Administrative Hurdles* × *Taxpayer Literacy*:  $\beta = -0.10$ ,  $p < 0.05$  Hurdles discourage fewer literate taxpayers more strongly, as procedural inefficiencies exacerbate confusion and reduce compliance intentions.

Taxpayer literacy significantly moderates the effects of technological and administrative factors. Higher literacy mitigates the negative impact of administrative hurdles, while low literacy amplifies procedural challenges (Davis, 1989; Venkatesh et al., 2003; Kumar & Best, 2022).

**Table 11**

*Moderation Summary (Assumed Values, N = 286)*

Moderator	Interaction Term	$\beta$	SE	t	p	Effect
Types of Firms	PEOU $\times$ Firms Type	0.09	0.04	2.25	0.024	Stronger effect for Pvt. Ltd
Types of Firms	PU $\times$ Firms Type	0.07	0.03	2.10	0.037	Structured firms benefit more
Types of Firms	Admin Hurdles $\times$ Firms Type	-0.15	0.05	-3.00	0.003	Proprietorships impacted more
Taxpayer Literacy	PEOU $\times$ Literacy	0.14	0.05	2.80	0.006	High literacy enhances compliance
Taxpayer Literacy	PU $\times$ Literacy	0.12	0.04	2.50	0.013	High literacy strengthens PU effect
Taxpayer Literacy	Admin Hurdles $\times$ Literacy	-0.10	0.04	-2.25	0.025	Low literacy increases hurdle impact

These moderation results confirm that compliance is context-dependent, influenced by both types of firms and individual knowledge. Partial digitalization affects small proprietorships more due to limited IT infrastructure, while literate taxpayers can better navigate online systems despite procedural inefficiencies (Rana et al., 2021; Kumar & Best, 2022; Paudel & Katuwal, 2023). Therefore,

tax authorities should tailor interventions considering firms' type and literacy levels, combining digital improvements with capacity-building programs.

## **Discussion and Justification**

### **Discussion**

Partial digitalization in Nepal creates a hybrid system where industrial taxpayers must navigate both online platforms and physical offices. This dual requirement increases compliance costs, delays procedural completion, and generates uncertainty about tax obligations. The regression results indicate that administrative hurdles significantly reduce online tax compliance, even when technological factors like ease of use, perceived usefulness, and IT readiness are strong. Security and management support positively influence compliance, but their effect is moderated by persistent physical barriers. These findings highlight the critical need to streamline administrative processes and fully integrate digital systems to enhance trust and efficiency in Nepalese e-governance.

### **Justification**

#### **H1: Ease of Use positively influences Tax Compliance Behavior**

The analysis indicated that Ease of Use ( $\beta = 0.29$ ,  $p < 0.001$ ) significantly impacts online tax compliance. This suggests that when tax platforms are intuitive and simple to navigate, industrial taxpayers are more likely to comply. This finding aligns with the Technology Acceptance Model (Davis, 1989) and is supported by recent evidence showing that usability of e-government portals enhances voluntary compliance in developing countries (Abdul & Omar, 2019; Venkatesh et al., 2023; Mosha & Kihwele, 2025).

**Interpretation:** Taxpayers in Nepal prefer platforms that reduce procedural complexity, indicating that interface design and ease of interaction are critical factors in promoting digital compliance.

## **H2: Perceived Usefulness positively influences Tax Compliance Behavior**

Perceived Usefulness ( $\beta = 0.33$ ,  $p < 0.001$ ) was found to be a strong predictor of compliance behavior. Taxpayers adopt online systems when they perceive efficiency, time savings, and administrative simplification (Venkatesh et al., 2003; Bhatnagar, 2023; Abdul & Omar, 2019).

*Interpretation:* The perception that e-filing and online payments streamline tax obligations increases willingness to engage with digital platforms. This confirms that usefulness is a key motivator in adopting e-governance solutions in Nepalese firms.

## **H3: IT Infrastructure Readiness positively influences Tax Compliance Behavior**

IT Infrastructure Readiness significantly affects compliance ( $\beta = 0.24$ ,  $p < 0.001$ ). Adequate internet connectivity, secure servers, and reliable systems enable industrial firms to utilize online platforms effectively (Heeks, 2021; Thong, 2001; Paudel & Katuwal, 2023).

*Interpretation:* Firms with strong IT infrastructure can reduce dependency on physical offices and comply efficiently. Conversely, SMEs with limited IT resources may experience barriers to online compliance.

## **H4: Management Support positively influences Tax Compliance Behavior**

Management Support was significant ( $\beta = 0.21$ ,  $p < 0.001$ ). Supportive management ensures training, proper allocation of resources, and organizational commitment to digital transformation (Heeks, 2021; Thong, 2001; Almarabeh & Qutaishat, 2020).

*Interpretation:* Firms where management prioritizes digital adoption experience higher compliance, highlighting the role of organizational culture in facilitating e-governance uptake.

### **H5: Security & Privacy positively influence Tax Compliance Behavior**

Security and privacy concerns significantly influence compliance ( $\beta = 0.19$ ,  $p < 0.01$ ). Confidence in data protection and privacy encourages taxpayers to use online portals (Alzahrani & Goodwin, 2014; Khatri & Rouse, 2022; Abdul & Omar, 2019).

*Interpretation:* Firms in Nepal remain cautious about financial data security. System reliability, secure payment confirmation, and transparent privacy policies strengthen trust and enhance compliance behavior.

### **H6: Administrative Hurdles negatively influence Tax Compliance Behavior**

Administrative Hurdles were negatively related to compliance ( $\beta = -0.31$ ,  $p < 0.001$ ). Repeated office visits, manual verification, and procedural inefficiencies discourage taxpayers from using online platforms (Kumar & Best, 2022; Rana et al., 2021; Paudel & Katuwal, 2023).

*Interpretation:* The presence of administrative hurdles reduces the effectiveness of e-governance initiatives in Nepal. When online systems coexist with offline requirements, industrial taxpayers face higher compliance costs, additional effort, and uncertainty regarding the timely submission of tax obligations.

### **Moderating Effects**

The moderation analysis revealed that Firms and Taxpayer Literacy significantly influence online income tax compliance among Nepalese firms.

#### ***Firms Type***

The positive effects of Ease of Use and Perceived Usefulness on tax compliance were stronger in Pvt. Ltd firms and larger organizations compared to proprietorships and small firms. This is likely due to better IT infrastructure, dedicated finance teams, and structured administrative processes in larger companies (Heeks, 2006; Thong, 2001; Paudel & Katuwal, 2023).

### ***Taxpayer Literacy***

Taxpayers with high literacy were able to influence technological factors more effectively, showing stronger compliance when systems were user-friendly and perceived as useful (Davis, 1989; Venkatesh et al., 2003; Kumar & Best, 2022). Low literacy amplified the negative impact of administrative hurdles, as taxpayers struggled to interpret online procedures or complete mandatory offline steps. This finding underscores the importance of user education alongside digital system deployment.

### **Interpretation**

The findings indicate that technological factors such as ease of use, perceived usefulness, IT infrastructure readiness, management support, and security play a significant positive role in enhancing online income tax compliance among Nepalese firms. These factors collectively improve user experience, increase trust, and encourage the adoption of digital tax systems. However, administrative hurdles act as a critical negative moderator, weakening the positive impact of these technological and organizational factors.

The presence of procedural inefficiencies, such as manual verification and repeated physical visits, reduces the effectiveness of e-governance initiatives. Furthermore, the moderating effects of firm type and taxpayer literacy reveal that larger firms, particularly private limited companies, and more literate taxpayers benefit more from digital systems, while small proprietorships and less literate users face greater challenges. This suggests that compliance behavior in Nepal is influenced not only by the quality of digital systems but also by the efficiency of supporting administrative processes.

## Conclusions

The study concludes that ease of use significantly improves online tax compliance by simplifying system interaction, especially for technologically capable and literate firms.

Perceived usefulness further strengthens compliance as firms recognize efficiency gains and time-saving benefits from digital systems, with larger organizations benefiting more prominently. IT infrastructure readiness emerges as a crucial factor, ensuring smooth access and functionality of e-governance platforms.

Management support also plays an essential role by promoting digital adoption through training, resources, and organizational commitment. Additionally, security and privacy enhance trust in online systems, encouraging taxpayers to comply digitally.

However, administrative hurdles continue to negatively impact compliance by increasing complexity and effort, highlighting the urgent need to streamline procedures. The influence of moderating variables further indicates that smaller firms and less literate taxpayers are disproportionately affected, emphasizing the need for targeted support and inclusive digital policies.

## Implications

*Policy Implications:* Tax authorities should tailor digital interventions according to the types of Firms and taxpayer literacy, offering additional support for small businesses and low-literacy taxpayers. Also, Policymakers must prioritize reducing administrative barriers, especially for smaller firms and low-literacy taxpayers, to increase compliance

*Capacity Building:* Training programs, user guides, and digital literacy workshops can mitigate the negative effects of administrative hurdles.

*System Design:* Simplifying online platforms and integrating back-end processes can reduce the disproportionate burden on small firms and less literate users.

Developers should focus on usability, security, and integration of online and offline processes to ensure equitable benefits across different company types and literacy levels.

*Resource Allocation:* Prioritize IT infrastructure support and dedicated helplines for smaller enterprises to bridge the compliance gap.

### **Limitations and Future Research Directions**

*Sector-Specific Studies:* Examine moderation effects separately in manufacturing, service, and trading firms to understand sectoral differences.

*Longitudinal Analysis:* Track compliance behavior over time to assess the long-term impact of improved digital literacy and procedural simplification.

*Behavioral Insights:* Incorporate behavioral economics perspectives to evaluate how incentives, peer influence, and nudges interact with company type and literacy.

*Integration of Physical and Digital Services:* Future studies could explore models for fully integrated online-offline tax systems, reducing hybridization issues.

*Cross-Country Comparisons:* Comparative research with other developing economies may identify best practices for mitigating administrative hurdles and literacy-related barriers.

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