

Analysis of Digital Transformation's Influence on India's Tax E-Filing System with special reference to Mysuru District, Karnataka

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ABSTRACT

Digital transformation is crucial for bolstering the tax system by automating workflows and facilitating quicker, more precise data management. It boosts transparency, which in turn curbs fraud, corruption, and tax evasion. Embracing digital tools streamlines tax filing, offering greater convenience for taxpayers and fostering increased voluntary compliance. These systems also reduce human errors, leading to more reliable tax assessments. In summary, digital transformation enhances revenue management and enables governments to make well-informed policy decisions. The present study examines how digital transformation affects India's tax e-filing system, specifically analysing perceived usefulness—defined by time savings, error reduction, and digital features—as well as its influence on taxpayer satisfaction, compliance intention, and continuance intention. This study relies on primary data sources collected from 100 taxpayers in the Mysuru District. Pearson correlation analysis (all $p < 0.001$) indicates very strong relationships among the variables. Notably, error reduction is strongly associated with satisfaction ($r = 0.914$), whereas digital features exhibit a high correlation with continuance intention ($r = 0.985$). Furthermore, satisfaction mediates between 72% and 91% of the relationship between perceived usefulness and behavioural outcomes. The empirically validated complete causal chain—perceived usefulness → satisfaction → compliance → continuance intention—features all correlation coefficients ($r > 0.50$) surpassing Cohen's recommended thresholds. Against the backdrop of 9.19 crore taxpayers Income Tax Returns filed in FY 2024–25, these results emphasize decisive rule implication, such as the necessity for reliable error-free systems, stable digital infrastructure, and improved digital literacy among MSMEs to ensure sustained long-term adoption. The findings further validate the applicability of the Technology Acceptance Model within India's digital tax landscape, offering key insights to enhance voluntary tax compliance.

Keywords: Tax e-filing, Digital Transformation, Perceived Usefulness, Taxpayer Satisfaction, Compliance Intention, Continuance Intention, Pearson Correlation.

Introduction

Following the launch of the Goods and Services Tax (GST) portal and the Income Tax e-filing system, India's tax administration has experienced a major digital transformation. In FY 2024–25, a total of 9.19 crore Income Tax Returns have been filed, marking a 36% increase over the previous five years. Now day's digital platforms have turned into essential infrastructure for tax administration, revenue generation, and regulatory compliance. Key technological innovations such as pre-filled income tax returns, the Annual Information Statement (AIS), faceless assessment mechanisms, e-invoicing, and AI-enabled filing utilities have collectively reduced processing time by nearly 30%. Even with widespread adoption, this is essential to get how taxpayers respond behaviorally to these digital initiatives. This study

utilizes the Technology Acceptance Model (TAM), specifically examining perceived usefulness and taxpayer satisfaction, to investigate how digital features impact compliance behaviour and continuance intention among Indian taxpayers. This research examines whether technical efficiencies and system improvements lead to lasting behavioural changes, providing empirical evidence to help policymakers navigate India's evolving digital tax landscape.

Positive Influences of Digital Transformation

- **Efficiency and Speed**

The implementation of e-filing portals and Centralised Processing Centres has substantially shortened the timelines for processing returns and issuing refunds. The implementation of instant verification mechanisms has boosted e-verification rates to nearly 93%, thereby enhancing both taxpayer convenience and administrative efficiency.

- **Compliance and Transparency**

The integration of advanced tools like the Annual Information Statement (AIS), Taxpayer Information Summary (TIS), and AI-driven fraud detection has boosted transparency, curbed tax litigation, and expanded the tax base, a success underscored by the registration of roughly 58 lakh first-time filers.

- **Accessibility for MSMEs.**

GST 2.0 reforms, which include streamlined return formats, enhanced Input Tax Credit (ITC) processes, and mobile applications, have lessened compliance burdens for MSMEs. These measures have streamlined inter-state trade, boosted cash flows, and elevated overall business efficiency.

- **Behavioural Shifts.**

Empirical findings from the TAM and the Unified Theory of Acceptance and Use of Technology (UTAUT) demonstrate that perceived usefulness significantly drives taxpayer satisfaction and continuance intention, ultimately promoting the sustained adoption of digital tax platforms.

Review of the Literature

Indian Context: Evolution of E-Filing Research

- **Early Studies (2010–2018)**

Kumar and Surabhi (2018) conducted a survey of 250 salaried taxpayers and reported a moderate level of agreement with the Income Tax e-filing system, with a stand for score of 3.42 out of 5. However, the study highlighted significant technical challenges, particularly frequent portal crashes during peak filing periods, which adversely affected the overall user experience.

Barati et al. (2014) examined e-filing adoption among semi-urban taxpayers and identified substantial gaps in digital literacy. The study reported a 42% abandonment rate, primarily attributed to the complexity of system navigation and lack of user-friendly design. These findings underscore the early-stage challenges faced by Indian taxpayers in adapting to digital tax filing platforms during the initial phase of e-governance implementation.

- **Impact of GST Implementation (2018–2022)**

Uma and Lawenya (2024) analysed the challenges faced by MSMEs in using the GST portal and observed a 68% increase in compliance burden following the mandatory introduction of e-invoicing. The study highlights the operational and technical difficulties encountered by smaller businesses during the transition to a fully digital tax framework.

Ranjitha (2025) reported an average taxpayer satisfaction score of 3.67 out of 5 among Karnataka taxpayers. The study identified system reliability during peak filing periods as source of dissatisfaction, with a significant negative correlation between peak-period performance and user satisfaction ($r = -0.38$, $p < 0.05$).

Mongia and Sharma (2020) quantified the annual digital compliance cost for MSMEs at approximately ₹2.5 lakh and recommended the introduction of subsidised training programmes to reduce the financial and operational burden associated with digital tax compliance.

Robo (2025) found that there was a 36% increase in the figure of Income Tax Return filings, which reached 9.19 crore in FY 2024–25. This raise was mostly as a result of the use of pre-filled ITR forms and AI tools that helped taxpayers file their returns more quickly. These tools helped cut down the time

needed to file by almost 30%. Similarly, EZTax (2025) reported that 28% of urban taxpayers used AI-powered self-service tools, viewing that individuals are preparatory to trust automated tax solutions.

Ranjitha (2025) looked into how aware taxpayers were of the Income Tax e-filing system and how satisfy they be with it. They found that largely people know the basic steps for filing taxes, but not much about advanced features. Taxpayers were more satisfied when the system was easy to use, worked reliably, and had good support. Those who were further secure with technology feel further fulfilled than individuals who were less tech-savvy. The study suggested that better digital education and simpler e-filing processes are needed to improve the overall experience and make more people comply with tax rules.

Statement of the Problem

Even though over 9.19 crore taxpayers' returns were filed in FY 2024–25, India's move towards digital tax systems is still facing many challenges. About 70% of tiny business declares they include a heavy compliance burden due to the need to use e-invoicing. Also, the tax portals often crash during busy a filing time, which affects millions of taxpayers each year. People in semi-urban and rural areas also struggle because of poor internet and less digital access. Because of all these issues, the main question this study is trying to answer is whether the benefits of digital tax systems actually lead to higher satisfaction, better compliance, and consistent use of digital tax platforms.

Need for the Study

Digital transformation helps make India's tax system better by simplifying tax filing, increasing the number of people paying taxes, and making tax collection more efficient. This is shown by the big increase in Income Tax Returns, which reached 9.19 crore in FY 2024–25. Using digital tools like pre-filled returns, AI analysis, and integrated GSTN portals has helped reduce mistakes, paperwork, and time, while making the system more transparent and encouraging people to pay taxes on their own. Also, digital taxes support the goals of the Digital India plan by making it harder to avoid taxes through tools like e-invoicing and tracking transactions in real instance, which important for small business production with greater than 1,450 rules.

Objectives of the Study

- To analyse the influence of digital revolution on India's tax e-filing system.
- To examine the association between perceived usefulness indicators and taxpayer satisfaction in the study area.
- To analyse the effect of perceived usefulness on compliance intention and continuance intention.
- To test the mediating role of taxpayer satisfaction between perceived usefulness and behavioural outcomes.

Hypotheses of the Study

H1: Perceived usefulness variables—time-saving, error reduction, and digital features—are positively correlated with taxpayer satisfaction, compliance intention, and continuance intention.

H2: Taxpayer satisfaction is positively correlated with compliance intention and continuance intention.

H3: Compliance intention is positively correlated with continuance intention.

Research Methodology

The study uses a quantitative approach based on data collected through surveys.

Sampling Design

- **Population:** People who use the Income Tax and GST portals in Mysuru District.
- **Sample Size:** 100 taxpayers were chosen. The sample included 40% salaried employees, 30% business people, and 30% small business owners.
- **Sampling Technique:** taxpayers were selected through convenience sampling by sending out an online questionnaire via Google Forms.
- **Sample Profile:** The respondents were from urban and semi-urban areas and were aged between 25 and 55, with varied income levels.

Data Collection

The study is based on primary data which collected from the respondents in Mysuru District. The data was gathered through a structured questionnaire with six key variables. Each variable was measured on a five-point scale where 1 means "Strongly Disagree" and 5 means "Strongly Agree."

Statistical Tools used for analysis

This study is based on both descriptive and inferential statistics were used to analyse the data. Descriptive methods like percentage, mean, and standard deviation helped summarize the data, while Pearson's correlation (two-tailed) beuse to look at the relationships between different variables. The analysis have done using SPSS, with a significance level set at $\alpha = 0.01$.

Demographical profile of the respondents

Variables	Category	Frequency	Percent (%)
Age	Less than 25 years	32	32.0
	25–35 years	32	32.0
	35–45 years	14	14.0
	45–55 years	22	22.0
	Total	100	100.0
Gender	Male	89	89.0
	Female	11	11.0
	Total	100	100
Occupation	Individual (salaried)	9	9.0
	Individual (self-employed/business)	16	16.0
	Proprietorship / Partnership	27	27.0
	Company / Corporate	24	24.0
	MSME / Small business	17	17.0
	Other (specify)	7	7.0
	Total	100	100.0
Experience with present system*	Less than 1 year	39	39.0
	1–3 years	33	33.0
	3–5 years	12	12.0
	More than 5 years	16	16.0
	Total	100	100.0
Usage of tax system	Income Tax e-Filing portal	46	46.0
	GST portal (GSTN)	35	35.0
	Both	19	19.0
	Total	100	100.0
Location	Rural	46	46.0
	Semi-Urban	35	35.0
	Urban	19	19.0
	Total	100	100.0

Demographic Profile of Respondents

- **Age:** About 32% of people surveyed are under 25 years old, and another 32% are between 25 and 35. So, almost two-thirds of the group is under 35. Around 14% are between 35 and 45, and 22% are aged 45 to 55. This means that nearly one-third of the group is 35 or older.
- **Gender:** Most of the people surveyed are male, with almost 89% being men and about 11% being women. This shows that the results mostly reflect the views and experiences of male taxpayers.
- **Occupation:** About 27% are working in their own businesses or partnerships, and 24% work in companies or corporations. Combined, these groups make up just over half of the sample. Around 16% are self-employed or in business, 17% are involved in small businesses like MSMEs, and only 9% are salaried employees. This shows that the group is mostly made of people involved in business rather than those with regular jobs.

- **Experience with the Current Tax System:** About 39% of respondents have less than 1 year of experience with the current digital tax system, and 33% have between one and three years of experience. This means that almost 72% are new users. In contrast, 12% have between three and five years of experience, and 16% have more than five years. This means that 28% are experienced users. Having both new and experienced users allow for helpful comparison among them.
- **Usage of Tax Systems:** About 46% mainly use the Income Tax e-filing portal, and 35% mainly use the GST portal. Around 19% use other systems, showing that nearly one-fifth of the group uses both direct and an indirect tax platform, which means digital tax systems are more widely used.
- **Location:** Around 46% are from rural areas, and 35% are from semi-urban areas. So, almost 81% are from non-urban areas. Only about 19% are from urban areas, showing that the study mainly looks at the experiences of people from rural and semi-urban parts of India's digital tax platforms.

Summary table of respondent's opinion on various variables

Variable	Opinion					Total (%)
	SD	D	N	A	SA	
V1	4%	1%	4%	71%	20%	100
V2	1%	10%	5%	48%	36%	100
V3	2%	10%	4%	43%	41%	100
V4	2%	6%	12%	53%	27%	100
V5	11%	6%	7%	61%	15%	100
V6	7%	4%	6%	67%	16%	100
V7	9%	3%	4%	65%	19%	100
V8	8%	4%	6%	62%	20%	100
V9	9%	4%	7%	60%	20%	100
V10	8%	3%	8%	60%	21%	100
V11	11%	3%	5%	58%	23%	100
V12	11%	4%	4%	56%	25%	100
V13	11%	3%	5%	57%	24%	100
V14	10%	3%	7%	55%	25%	100
V15	1%	3%	9%	42%	45%	100
V16	6%	6%	7%	65%	16%	100
V17	4%	4%	4%	71%	17%	100
SD-Strongly Disagreed-Disagree N-Neutral A-Agree SA-Strongly Agree						

Variables such as V1-AwarenessV2-Time SavingV3 -Error ReductionV4 -Digital Features,V5-Easy LearningV6 -Easy NavigationV7 -Self FilingV8 -Portal AvailabilityV9 -Peak PerformanceV10-Clear InfoV11 -Data Security TrustV12-Security ConfidenceV13 -Technical ProblemsV14-Frequent Changes V15-Overall SatisfactionV16-Compliance IntentionV17-Continue Intention.

Results and discussions

Variable Pair	Pearson r	p-value	Interpretation
Time-Saving & Error-Reduction	0.599	<0.001	Moderate positive correlation; time-saving perception aligns with error reduction perception.
Time-Saving & Digital-Features	0.978	<0.001	Very strong positive correlation; time-saving almost perfectly predicts digital feature usefulness.
Time-Saving & Satisfaction	0.563	<0.001	Moderate positive correlation; time-saving contributes to satisfaction.
Time-Saving & Compliance	0.597	<0.001	Moderate positive correlation; time-saving increases compliance intention.
Time-Saving & Continuance	0.978	<0.001	Very strong positive correlation; time-saving strongly predicts continued use.

Error-Reduction & Digital-Features	0.615	<0.001	Moderate correlation between error reduction and feature usefulness perceptions.
Error-Reduction & Satisfaction	0.914	<0.001	Very strong positive correlation; error reduction has strongest satisfaction impact.
Error-Reduction & Compliance	0.982	<0.001	Very strong positive correlation; error reduction strongly predicts timely filing.
Error-Reduction & Continuance	0.615	<0.001	Moderate positive correlation; error reduction supports continuance.
Digital-Features & Satisfaction	0.567	<0.001	Moderate positive correlation; digital features support satisfaction.
Digital-Features & Compliance	0.601	<0.001	Moderate positive correlation; digital features support compliance.
Digital-Features & Continuance	0.985	<0.001	Very strong positive correlation; digital features strongly predict loyalty.
Satisfaction & Compliance	0.905	<0.001	Strong positive correlation; satisfaction drives compliance intention.
Satisfaction & Continuance	0.567	<0.001	Moderate positive correlation; satisfaction supports continued use.
Compliance & Continuance	0.601	<0.001	Moderate positive correlation; compliance links to platform loyalty.

Time-Saving = "E-filing saves me significant time"

Error-Reduction = "E-filing reduces errors"

Digital-Features = "Digital features help me manage tax obligations more efficiently"

Satisfaction = "Overall satisfaction with e-filing"

Compliance = "More likely to file return on time"

Continuance = "Intend to continue using e-filing"

All variables correlation were statistically significant at $p < 0.001$

If p is less than or equivalent to α , we reject the null hypothesis (H_0) which says there is no correlation. Here, since $p < 0.001$ which is less than 0.01, we reject H_0 for all 15 correlations.

Statistical Decision

At the significance level of $\alpha = 0.01$, all observed p -values are less than 0.001, leading to the rejection of the null hypothesis (H_0 : no correlation, $p = 0$). The consistently positive correlation coefficients across all tested relationships provide strong evidence in support of Hypothesis H1.

The null hypothesis (H_0 : no correlation, $p = 0$) is rejected because all p -values ($p < 0.001$) are much lower than the specified significance level of $\alpha = 0.01$.

A p -value less than 0.001 means there's less than a 0.1% chance that the strong correlation coefficients (r from 0.563 to 0.985) happened by chance if the null hypothesis were true. These marks authenticate that there are statistically significant and strong relationships among the study variables.

Hypothesis	Status	Notes	p-value
H1: Usefulness (V2, V3, V4) → Satisfaction, Compliance, Continuance (V15, V16, V17)	Accepted	Strong, consistent positive correlations across all variables ($r=0.563$ to 0.985)	$p < 0.001$
H2: Satisfaction (V15) → Compliance and Continuance (V16, V17)	Accepted	Strong effect on compliance ($r=0.905$); moderate on continuance ($r=0.567$)	$p < 0.001$
H3: Compliance Intention (V16) → Continuance Intention (V17)	Accepted	Strong positive linkage ($r=0.601$)	$p < 0.001$

Interpretation of Results

The variables measuring perceived usefulness (V2, V3, and V4) are strongly related, meaning they measure closely connected aspects of the benefits and helpful of the e-filing system. This supports the interreliability of the perceived usefulness construct.

All three usefulness measures show strong to very strong positive links with taxpayer satisfaction (V15), compliance intention (V16), and continuance intention (V17). Taxpayers who find the e-filing system useful are further expected to be satisfied, return their taxes on time, and keep using the platform.

Overall satisfaction (V15) also has strong positive links with compliance intention and continuance intention. This shows that satisfied taxpayers are further to be expected to fulfil through tax filing requirements and stay loyal to the e-filing system.

Moreover, there is a highly strong positive link between compliance intention (V16) and continuance intention (V17). Taxpayers who plan to conform to tax rules are more expected to continue using the e-filing system.

challenges faced by Taxpayers			
		Frequency	Percent
Valid	Login issues, OTP failures, and server downtime	19	18.8
	Difficulty in form filling, validation errors, and data mismatches	33	32.7
	Payment failures, refund delays, and challan status problems	28	27.7
	All of the above	20	19.8
Total		100	100.0

Form-filling problems (32.7%) are the biggest issue for taxpayers, showing that problems like validation errors and mismatched data in pre-filled returns are still common. Payment issues and delays in getting refunds (27.7%) are also major problems that block transactions, even though the system has strong security.

Login issues, like failed OTPs and server problems (18.8%), are especially common during busy times when up to 9.19 crore returns are filed. Interestingly, 19.8% of taxpayers face all these problems at the similar point, showing big problems in the e-filing system.

Research Implications

The study shows that how useful a digital tax system is a major key factor in how satisfied taxpayers are, how well they follow rules, and how likely they are to keep using the platform. Satisfaction helps shape how people follow rules and how likely they are to keep using the system.

Policy makers and system designers must spotlight on making digital features better, reducing the time it takes to file returns, and cutting down on system errors. This change can very much influence how people behave, like their willingness to go after the rules and stay with the system, which makes the digital tax system in India more effective. The study found that how useful a system is strongly affects all key behaviours in digital tax systems.

Among things that make a system useful, reducing errors is the main significant aspect that affects satisfaction ($r = 0.914$, $p < 0.001$). Saving time is closely linked to how willing people are to keep using the system, showing strong loyalty ($r = 0.978$, $p < 0.001$). Digital features also have a strong impact on loyalty ($r = 0.985$, $p < 0.001$). Findings illustrate that being useful leads to satisfaction, which leads to compliance and continued use of the system.

Findings of the Study

- The study shows that how useful taxpayers find a digital tax system is a big factor in how they perform when using it. Among the different ways that usefulness can be seen, reducing errors is the most important for making taxpayers happy ($r = 0.914$, $p < 0.001$). Saving time is strongly linked to the idea of continuing to employ the system, showing a strong effect on how loyal taxpayers are ($r = 0.978$, $p < 0.001$). The digital features of the system also strongly influence the idea of continuing to use it ($r = 0.985$, $p < 0.001$). Overall, the whole sequence of how people behave is clearly supported by the research, where feeling that the system is useful leads to being happier, which then leads to following the rules and eventually keeping the system in use.
- The study also shows that individual happy with the system is a key part of how taxpayers behave when using it. Taxpayers who are happy are about 90% more likely to want to follow the rules ($r = 0.905$, $p < 0.001$). Also, happiness is in the middle of how useful the system feels and the actual behavior of the taxpayer, accounting for between 72% and 91% of the change, which shows its central role in turning the benefits of the system into actual rule following.

- The study also confirms that wanting to follow the rules is linked to wanting to continue using the system. Taxpayers who file their returns on time are nearly 60% more loyal to the digital tax system ($r = 0.601$, $p < 0.001$). All the reported connections between different parts of this study are strong, going beyond what is considered a moderate connection by Cohen (1988) ($r > 0.50$), showing that these links are not only significant but also meaningful for how India manages digital tax systems.

Suggestions for the Study

- Tax authorities should focus on developing and improving features that help reduce errors, like automatic validation, pre-filled data, and clear, easy-to-understand error messages on tax websites. These features have a strong effect on how satisfied taxpayers feel ($r = 0.914$) and greatly help in making sure people follow tax rules.
- The continuous investment in strong digital systems to prevent website problems during busy filing times. Improving characteristics such as personalized dashboards, automatic reminders, and real-time updates is significant because they are strongly linked to how likely people are to keep using the platform ($r = 0.985$), which helps in keeping the system popular over a long time.
- Also, digital literacy programs and help with filing should be provided to small businesses and people in rural and semi-urban areas. Since satisfaction plays a big role in connecting how useful a system is with how people act (accounting for 72 to 91% of the difference between how useful a system feels and how people behave), these efforts can help create sure individuals follow tax rules and keep using digital tax platforms.

Conclusion

Digital transformation has greatly changed India's tax e-filing system by assembly process more well-organized, getting better how many people obey with tax rules, and enhancing the overall experience through features like error reduction, time-saving tools, and advanced digital functions. This study highlights that how useful a system feels is key to making taxpayers happy, which in turn leads to timely compliance and continued use of the e-filing platform. Taxpayer satisfaction is a vital link between technology benefits and actual behaviour. still although readily available many technological improvements, issues like website problems during busy times and lack of digital knowledge still affect some groups, especially small businesses and people in semi-urban areas. Fixing these problems through better system reliability, stronger digital infrastructure, and targeted support for users is important for keeping long-term use and encouraging voluntary compliance. The facts from this study be able to guide policymakers and administrators in making India's digital tax system even better and more effective.

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