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Digital Literacy Barriers in E-Filing: Challenges Faced by First-Time Taxpayers

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Abstract

Digital transformation in public administration has significantly reshaped tax compliance systems through online filing platforms. In India, the e-filing system introduced by the Income Tax Department under the Government of India aims to enhance efficiency, transparency, and taxpayer convenience. Despite these advancements, first-time taxpayers often encounter substantial digital literacy barriers that hinder the effective utilization of the platform. Limited technical knowledge, unfamiliarity with online procedures, difficulty in understanding tax-related terminology, cyber security concerns, and language constraints create obstacles to successful e-filing. This study examines the various digital literacy challenges faced by new taxpayers and analyzes how these barriers influence their confidence, trust, and willingness to adopt the e-filing system. A structured survey was conducted among 120 first-time taxpayers from various regions and socio-economic backgrounds. The data were analyzed using Percentage Analysis, Chi-square test, and Correlation analysis. The study assessed levels of digital literacy, usability issues, and procedural difficulties experienced during e-filing. The findings reveal that inadequate digital skills and lack of awareness significantly affect independent filing and increase reliance on intermediaries. The study emphasizes the need for simplified user interfaces, multilingual support, digital awareness programs, and institutional guidance to ensure inclusive access and improve voluntary tax compliance. Strengthening digital literacy is essential for bridging the digital divide and achieving the broader objectives of effective e-governance.

Keywords: Limited technical knowledge, unfamiliarity with online procedures, difficulty in understanding tax-related terminology, cyber security concerns

Introduction

E-filing of income tax returns is a flagship digital initiative of the Government of India aimed at making tax compliance faster, more convenient, accurate, and transparent. Over the past decade, the e-filing system has transformed the process of return submission by reducing paperwork, minimizing delays, and

enabling real-time tracking of applications. However, while experienced taxpayers benefit significantly from this system, first-time taxpayers such as young professionals, new business owners, and individuals newly entering the formal economy often face considerable challenges in adopting e-filing. The primary barriers include limited digital literacy, lack of familiarity with tax-related terminology, difficulty in navigating the online portal, and fear of making errors that may lead to penalties. In addition, many first-time taxpayers experience low confidence in using technology, insufficient guidance from support systems, and unequal access to reliable internet connectivity or digital devices. These factors collectively hinder the smooth adoption of the e-filing system. As a result, taxpayers may commit errors, rely heavily on intermediaries, delay submissions, or even remain non-compliant, thereby affecting both individual taxpayers and the overall revenue system.

Understanding these challenges is essential for designing effective interventions that address digital literacy gaps, enhance portal usability, and provide targeted education and support. Improving digital literacy and strengthening user confidence will not only increase adoption rates among first-time taxpayers but also contribute to greater transparency, efficiency, and inclusiveness in the income tax system. This study aims to identify the key factors contributing to digital literacy barriers in e-filing, examine the specific challenges faced by first-time users, and propose practical solutions to facilitate the smoother adoption of the digital tax system. By addressing these issues, policymakers and tax authorities can ensure that all taxpayers, regardless of their prior experience or level of digital proficiency, can participate effectively in the e-filing process.

Review of Literature

Virendra Amonkar et al. (2024)

In their study titled “Exploring the Growth of E-Filing of Income Tax Returns in India: An In-Depth Examination of Growth and Comparative Analysis “. This study aims to analyse and compare the adoption of e-filing across 28 Indian states, categorizing states by size (large, medium, small), covering the period 2011–12 to 2022–23. Using official income tax department data, the authors applied descriptive statistics (via Excel) and software-based analysis (Jamovi) to examine e-filing trends. The results show a rising national trend in e-filing usage, but with significant inter-state variation: some states lead strongly while others lag, highlighting disparities in infrastructure, digital readiness, and user awareness. The study suggests that bridging regional digital divides, strengthening internet infrastructure, and promoting awareness and training can make adoption more uniform. It concludes that e-filing growth in India is uneven because socio-economic and infrastructural factors critically influence uptake.

Dr. Kumaraswamy Mora (2025)

In their study titled “An Analytical Study on Adoption and Challenges of Online ITR (Income Tax Return) Filing by Individuals”. This study investigates the adoption and challenges of online ITR (Income Tax Return) filing among individuals in India, focusing on how factors such as ease of use, trust in the system, and awareness influence e-filing uptake. Data were collected through a combination of secondary sources and direct interactions (interviews and surveys) with taxpayers from diverse demographics, employing an analytical approach to evaluate responses and identify barriers. The findings highlight that, while many taxpayers are willing to use e-filing, technical difficulties, lack of awareness, and low confidence in digital procedures remain significant obstacles. The recommends strengthening taxpayer education, simplifying e-filing interfaces, and increasing government-led support

and outreach to enhance adoption. In conclusion, the paper highlights that, despite growing digital penetration, digital literacy gaps and infrastructural limitations continue to hinder the universal adoption of e-filing among Indian taxpayers.

Van Dijk (2017)

In their study titled *"Digital Divide and Digital Skills in E-Government,"* examined the role of digital skills in accessing e-government services and identified different levels of the digital divide affecting users. The study used a survey method and statistical analysis to assess digital competency among citizens. The findings revealed that digital literacy extends beyond basic computer knowledge to include information evaluation, navigation skills, and problem-solving abilities. Users with lower digital skills experienced greater difficulty in accessing online government platforms. The study suggested the implementation of digital literacy training programs and simplification of online government portals. It concluded that digital skills are essential for effective participation in e-government services.

Objectives of the study

- To analyze the socio-economic profile of first-time taxpayers and identify the key factors influencing digital literacy barriers in the e-filing process.
- To examine the digital literacy challenges faced by first-time taxpayers while using the e-filing system.

Research Methodology

This research study is descriptive in nature. Both the primary and secondary data collection methods were considered. Convenience sampling method was used to gather information from 120 respondents. Statistical Tools such as Percentage analysis, chi-square, one- way ANOVA were used in this study.

ANALYSIS AND INTERPRETATION

Demographic Profile

S.No.	Demographic Profile	Category	No.of Respondents	Percentage (%)
1	**Gender**	Male	78	65
2		Female	42	35
		Total	**120**	**100**
1	**Age**	Up to 30 years	22	18
2		31 – 40 years	28	23
3		41 – 50 years	40	33
4		Above 50 years	30	25
		Total	**120**	**100**
1	**Annual Income**	Up to Rs.3 Lakhs	27	23
2		Rs.3 to Rs.5 Lakhs	35	29
3		Rs.5 to Rs.10	40	33

		Lakhs		
4		Above Rs.10 Lakhs	18	15
		Total	**120**	**100**

Source: Primary Data

The above table shows that out of 120 respondents, 65 percentage of the respondents are male, 35 percentage of the respondents are female. Gender-based analysis can be conducted to identify if there are differences in opinions, preferences, or challenges faced by male and female respondents. Majority of the respondents (65%) are male.

It is observed that 18 percentage of the respondents are in the age group of up to 30 years, 23 percentage of the respondents are in the age group of 31 -40 years, 33 percentage of the respondents are in the age group of 41 -50 years, 25 percentage of the respondents are in the age group of above 50 years. This indicates that the age group is dominated by younger respondents. Majority of the respondents (33%) are in the age group of 41 - 50 years.

Regarding the annual income distribution of respondents out of 120 respondents**,** 23 percentage of the respondents are earning up to Rs. 3 lakhs**,** 29 percentage of the respondents are earning between Rs. 3 lakhs to Rs.5 lakhs**,** and 33 percentage of the respondents are earning Rs.5 to Rs.10 Lakhs**,** 15 percentage of the respondents are earning above Rs.10 Lakhs. This indicates that most of the respondents belongs to the middle-income group. Majority of the respondents (33%) are earning Rs. 5 to Rs. 10 lakhs

Chi-Square Test

The Chi-square test is a statistical tool used to examine the existence of an assumed hypothesis and to test its validity. The calculated Chi-square value is compared with the Chi-square table value to draw appropriate inferences.

H01 – There is no significant relationship between the gender and annual income Association between Gender and annual income

Gender		**Upto RS.3**	**Rs.3 to Rs.5**	**Rs.5 to 10**	**Above 10**	**Total**
Male	Count	23	29	17	12	81
	% within Gender of the respondents	28.4 %	35.8%	21.0%	14.8%	100%
Female	Count	6	4	22	7	39
	% within Gender of the respondents	15.4%	10.3%	56.4 %	17.9%	100%
Total	**Count**	**29**	**33**	**39**	**19**	**120**
	% within Gender of the respondents	**24.2%**	**27.5%**	**32.5%**	**15.8%**	**100.0%**

Source : Primary Data

Chi-Square Tests

The table above value of Chi-square value is 18.418 (degrees of freedom = 3). The Pearson Chi-square value of 18.418, with 3 degrees of freedom, has an associated p-value of less than 0.001. This result is statistically significant at the 1% level of significance, indicating a significant relationship between gender and annual income. The Phi coefficient value of 0.392 suggests a moderate strength of association between the two variables.

Since the p-value (< 0.001) is less than the level of significance, the null hypothesis is rejected. This indicates that there is a statistically significant association between gender and annual income among the respondents. The moderate Phi coefficient further implies that income levels vary noticeably across gender groups, with females showing relatively higher representation in the middle and higher income categories compared to males.

Chi-Square Tests	**Value**
Pearson chi-square	18.418
DF	1
P-Value	<0.001**
Phi-Cofficient	0.392
P-Value	<0.001

****1% Level of Significance**

H_0 (Null Hypothesis):

There is **no association** between Gender and Annual Income of the respondents.

H_1 (Alternative Hypothesis):

There **is an association** between Gender and Annual Income of the respondents.

Chi-square test was conducted to analyze the association between gender and annual income of the respondents. The Pearson Chi-square value of 18.418, with a p-value of less than 0.001, indicates a statistically significant relationship at the 1% level of significance. This shows that the distribution of annual income varies significantly between male and female respondents. The Phi coefficient value of 0.392 indicates a moderate strength of association between the two variables, and its p-value (< 0.001) further confirms the statistical significance of the relationship.

Therefore, at the 1% level of significance, gender and annual income are not independent, demonstrating a moderate and statistically significant association between the two variables.

Factors Influencing digital literacy barriers in the e-filing process

Factors		**Personal Digital Skills Barriers**	**Technical Barriers**	**Knowledge & Awareness**	**Psychological Barriers**	**Support & Guidance Barriers**	**System & Design Barriers**
Personal Digital Skills Barriers	Pearson Correlation	1	.081	-.068	.126	-.133	.116
	Sig (2-		.381	.464	.170	.148	.206

	tailed)						
Technical Barriers	Pearson Correlation Sig (2-tailed)		1	.030 .742	-.113 .218	-.173 .058	.099 .282
Knowledge & Awareness	Pearson Correlation Sig (2-tailed)			1	-.119 .195	-.114 .214	-.076 .412
Psychological Barriers	Pearson Correlation Sig (2-tailed)				1	**-.022** **.808**	**-.316**** **.000**
Support & Guidance Barriers	Pearson Correlation Sig (2-tailed)					1	-.018 .842
System & Design Barriers	Pearson Correlation Sig (2-tailed)						1

Source: Primary Data

Correlation is Significant at the 0.001 level (2-tailed).

H_0 (Null Hypothesis):

There is **no significant relationship** between the factors influencing digital literacy barriers in the e-filing process.

H_1 (Alternative Hypothesis):

There is a **significant relationship** between the factors influencing digital literacy barriers in the e-filing process.

Correlation analysis was conducted to examine the relationships among the various factors influencing digital literacy barriers in the e-filing process. The results indicate that most of the correlations among the factors are weak and statistically insignificant, as their p-values are greater than 0.05. A notable exception is the significant negative correlation between Psychological Barriers and System & Design Barriers ($r = –0.316$, $p < 0.01$). This suggests that higher psychological barriers, such as fear, anxiety, or lack of confidence, are associated with lower perceptions of system and design barriers. This relationship is statistically significant at the 1% level. All other correlations, including those involving Personal Digital Skills Barriers, Technical Barriers, Knowledge & Awareness Barriers, and Support &

Guidance Barriers, are weak and not statistically significant. This implies that these factors do not exhibit meaningful linear relationships with one another in the context of digital literacy barriers in the e-filing process.

Challenges Faced by First - Time Taxpayers

S. No	Challenges	HS	S	NO	DS	HDS	Total	Weighted	Rank
1	Limited awareness of tax rules	205	76	66	34	21	402	335	**I**
2	Difficulty Understanding technical terms	135	48	57	64	30	334	278.3	**VII**
3	Selecting the correct ITR form	100	100	108	30	24	362	301.6	**III**
4	Problem with portal login/verification	150	96	36	40	28	350	291.6	**IV**
5.	Low digital literacy	125	56	99	38	29	347	289.2	**V**
6.	Lack of guidance	95	128	90	52	13	378	315	**II**
7	Fear of making mistakes	140	44	75	56	20	335	279.2	**VI**

Source : Primary Data

The above table reveals that the Challenges Faced by First - Time Taxpayers under HS- Highly satisfied, S – Satisfied, NO – No opinion DS – Dissatisfied, HDS – Highly Dissatisfied are given Limited awareness of tax rules is ranked first with the weighted average score of (335), Lack of guidance is ranked second with the weighted average score of (315), Selecting the correct ITR form is ranked third with weighted average score of (301.6), Problem with portal login/verification is ranked fourth with weighted average score of (291.6), Low digital literacy is ranked fifth with weighted average score of (289.2), Fear of making mistakes is ranked sixth with weighted average score of (279.2). Difficulty Understanding technical terms is ranked seventh with weighted average score of (278.3). Majority of the respondents (weighted score 335) ranked Limited awareness of tax rules as the most important challenges (Rank I).

Findings

- 65 percentage of the respondents are male.
- 33 percentage of the respondents are in the age group of 41 - 50 years.
- 33 percentage of the respondents are earning income group of Rs.5 lakhs to Rs.10 lakhs**.**
- Majority of the respondents (weighted score 335) ranked Limited awareness of tax rules as the most important challenges (Rank I).
- The null hypothesis is rejected; therefore, there is a significant relationship between gender and annual income.
- The null hypothesis is rejected; therefore, there is a significant relationship between Psychological Barriers and System & Design Barriers influencing digital literacy barriers in the e-filing process.

Suggestions

- Technical terms and procedures used in the e-filing portal should be simplified to help first-time
- taxpayers understand the process and improve their confidence in completing it independently.
- Digital literacy training programs should be conducted to enhance users' skills in navigating online forms, uploading documents, and correcting errors, thereby reducing delays and mistakes during e-filing.
- Awareness programs should be organized to educate first-time taxpayers about e-filing rules, system features, and security practices in order to reduce confusion and minimize their dependence on external assistance.

Conclusion

Digital literacy barriers continue to pose significant challenges for first-time taxpayers in adopting the e-filing system. Although the digital transformation of tax administration has improved efficiency, transparency, and convenience, many new users struggle with limited technical knowledge, unfamiliarity with tax terminology, difficulty in navigating the portal, and fear of making errors. These barriers reduce user confidence and increase dependence on intermediaries, thereby limiting the full benefits of digital tax services. To ensure inclusive and effective adoption of the e-filing system, policymakers and tax authorities must prioritize strengthening digital literacy through targeted training programs, awareness campaigns, and simplified user interfaces. Providing multilingual support, clear instructions, and easily accessible guidance mechanisms can further enhance user confidence and usability. In conclusion, addressing digital literacy barriers is essential for promoting voluntary compliance, improving user satisfaction, and enabling first-time taxpayers to participate independently and confidently in the digital tax system. Strengthening digital inclusion will ultimately contribute to a more transparent, efficient, and equitable income tax administration.

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