



DIGITAL LITERACY AMONG THE SCHEDULED CASTE IN KERALA WITH A SPECIAL REFERENCE TO PALAKKAD DISTRICT

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ABSTRACT

This study examines the extent of digital literacy among the Scheduled Caste (SC) community in Palakkad District, Kerala, emphasizing their access to and use of digital technologies. The research employs both primary and secondary data, with a sample of 100 households, to assess gender-based variations in device ownership, internet familiarity, online activities, and digital financial behavior. Statistical analyses including Chi-square and Z-tests were conducted to determine associations between gender and digital engagement patterns. The findings reveal that while both men and women show increasing participation in online platforms, significant gaps persist in areas such as cryptocurrency adoption and internet familiarity. However, no substantial gender differences were observed in online shopping, e-governance use, or social media participation, indicating a gradual narrowing of the digital divide. The study concludes that comprehensive digital education, improved infrastructure, and inclusive policy interventions are essential to enhance digital empowerment and socio-economic participation among the Scheduled Castes.

KEYWORDS: Digital literacy, Scheduled Castes, Gender divide, Internet access, E-governance, Kerala.

INTRODUCTION

Scheduled caste is considered as the most deprived sections in the society, they were sidetracked in various ways, especially in education. Since they were underprivileged, their attainment is also somewhat pathetic. This paper intended to identify up to what extent they were literate digitally, this is important in the sense that they were even educationally backward, but the contemporary world is existing with the technologies. Without technologies, the world becomes meaningless. Thereby, this may help them to be uplifted to an extent. So, the term digital literacy implies the ability to understand, use and even to be equipped with digital technologies for their meaningful life. It shows their ability to understand the usage of digital technologies for their day-by-day actions.

Major issues related to SC digital literacy

Digital Divide: The Scheduled Caste population continues to experience significantly lower levels of access to computers and internet connectivity compared to the general population.

Educational Inequality: The historical and persistent educational disadvantage of the Scheduled Castes has contributed to their limited participation and achievement in the contemporary digital environment.

Socioeconomic Barriers: Economic marginalization and lower wage levels among the Scheduled Castes restrict their capacity to afford and adopt digital technologies.

Aggravation of Inequality: Digital platforms and online social networks often reproduce existing caste hierarchies, where dominant caste groups are favored and marginalized communities encounter discrimination and exclusion.

Barriers to Access Government Schemes: Although initiatives such as the *Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA)* aim to enhance digital literacy among marginalized groups, their outreach and effectiveness remain limited in practice.

Limited Access to E-Governance: Due to inadequate digital literacy and infrastructural constraints, the Scheduled Caste community faces restricted access to various e-governance services.

Need for Comprehensive Training: Basic device-handling instruction alone proves inadequate; experts emphasize the necessity of comprehensive digital education that incorporates elements of cybersecurity, online safety, and digital privacy.



Merits of Digital Literacy

Improved Access to Education: Digital literacy helps to access to online educational resources, e-learning platforms, and distance education opportunities. For the Scheduled Caste (SC) students, especially in rural area, this can reduce the educational disparities and improve learning outcomes through exposure to quality learning materials and virtual classrooms.

Improved Economic Opportunities: The gaining of digital skills enables SC to reach new avenues for job, entrepreneurship, and market participation. There is strong positive relationship between internet accessibility and labor market participation.**Increased Financial Inclusion:** Digital literacy is vital in enabling access to official banking systems, digital payment, and government subsidy mechanisms. Proficiency in these digital tools strengthens economic empowerment and ensures effective participation in initiatives such as the Direct Benefit Transfer (DBT), thereby promoting financial autonomy.

Access to Government Services (E-Governance): As public services increasingly changing to digital platforms, digital literacy allows SC communities to access essential e-governance services, including applications for identification documents (Aadhaar, PAN), welfare schemes, and administrative services. This reduces dependence on intermediaries and minimizes travel costs and bureaucratic inefficiencies.

Social Mobilization and Empowerment: Digital platforms act as important medium for social activism and awareness-raising against caste-based discrimination. Online engagement has enabled Dalit activists to mobilize support, enhance visibility, and expand political participation. Consequently, digital tools function as instruments of empowerment and professional advancement within marginalized communities.

OBJECTIVE

1. To analyse the extent of Digital literacy among the scheduled caste.

METHODOLOGY

The study is primarily confined to identify the extent of digital literacy among the Scheduled caste. It is important in the sense that, they are the most underprivileged category and even far from the main stream. The study is conducted in Palakkad district by taking a sample of 100 households. The reason behind such selection is that the SC population is greater and their educational attainment is lower. It implicitly says that the overall attainment in all fields is poor. The study is based on both primary as well as secondary data. Primary data is collected directly from the Sc Households using a structured interview, and the secondary data from various official sources like websites, journals, articles and publications.

Importance

Digital literacy is important for Scheduled Castes (SC) to eliminate the digital divide and helps to attain equal opportunities in education, employment, and social participation. It enables the individuals to access online learning resources, develop critical thinking skills to gain information, and prepare for a future workforce where digital literacy is important. It also promotes safety online and enables engagement with digital governance and civic platforms.

DATA ANALYSIS

Table.1
Population Distribution

SI NO	Gender	Frequency	Percentage
1	Male	300	46.15
2	Female	350	53.85
3	Other	0	0
Total	-	650	100

Primary Data

The table shows the gender wise classification, the sample comprised with 53.85 % of female population and 46.15% of male population.

Table.2
Possession of Laptop and Mobile

SI NO	Gender	Only Smart Phone	Only Laptop	Both	None	Percentage
1	Male	100	0	200	0	46.15
2	Female	150	0	200	0	53.85
3	Other	0	0	0	0	0
Total	-	250	0	400	0	100



Primary Data

The table explains the accessibility of digital devices like Smart phones and Laptops. It shows that the possession of both by the sample have a higher value compared to other groups like any one of the devices, which means the ignorance regarding the usage is still existing in the sample area, because out of 650 population, about 250 still not using laptops.

Hypothesis testing

Null Hypothesis (H_0): There is no association between gender and type of device owned.

Alternative Hypothesis (H_1): There is an association between gender and type of device owned.

Table. 2.1

Test of Independence Between Gender and Device Ownership

Gender	Only Smart Phone (Observed)	Both Laptop and Smart Phone (Observed)	Only Smart Phone (Expected)	Both Laptop and Smart Phone (Expected)
Male	100	200	11.38	184.62
Female	150	200	134.62	215.38
Total	250	400	-	-

Source: Primary Data

Table.2.1.a

Test Statistic	Value
Chi-Square (χ^2)	
Degrees of Freedom	1
p-value	<0.05
Significance	Yes

Source: Primary Data

The results show that, the test statistic value exceeds the critical value and $p < 0.05$, therefore we can reject the null hypothesis, which means that, there is a significant relationship between gender and type of devices that they have owned.

Table.3

Familiarity regarding Internet and Wi-Fi

Gender	Internet		Total	Wi-Fi		Total
	Yes	No		Yes	No	
Male	280	20	300	250	50	300
Female	300	50	350	300	50	350
Total	580	70	650	550	100	650

Primary Data

The table shows the sample distribution's familiarity with the internet and wi-fi. It is very crucial in their context, but regarding the general population is concerned, it is somewhat trivial. From the table it is very clear that about $\frac{1}{4}$ of the sample population were not even familiar with internet and wi-fi. Thereby we can say they are illiterate in this context.

Table 3.1:

Chi-Square Test Results for Gender vs Internet and Wi-Fi Access

Test	χ^2 Value	df	p-value	Significance ($\alpha = 0.05$)	Interpretation
Gender vs Internet access	9.763	1	<0.01	Significant	Significant relationship between gender and internet access
Gender vs Wi-Fi access	0.704	1	>0.05	Not Significant	No significant relationship between gender and wi-fi access

Source: Primary Data

This table shows the test statistic of internet and wi-fi accessibility of gender. It says that, there is a significant statistical relationship between gender and internet accessibility, which implies males are slightly more likely to have internet access than expected, while females without access are higher than expected. In the case of Wi-Fi Access: No significant relations were found between gender and Wi-Fi access; usage patterns are similar across genders.



Table 4
Usage of Various Apps

	Male (n=300)	Female (n=350)	Total (N=650)
Social Media	240 (80%)	315 (90%)	555 (85.4%)
Messaging	270 (90%)	315 (90%)	585 (90.0%)
Online Shopping	150 (50%)	280 (80%)	430 (66.2%)
Education	180 (60%)	210 (60%)	390 (60.0%)

Source: Primary Data

This table shows the usage of various apps by the sample. It clearly explains the usage of messaging app is greater in the sample distribution, it comes about 90%. About 85.4 % of the population uses social media, for the purpose of online shopping and education, the usage comes by 66.2 and 60% respectively. The following test statistic justifies the same very clearly.

Table. 4.1
Z-Test Results for Gender Difference in App Usage

App type	Male P1	Female P2	Pooled P	SE	Z Calculated	Z Critical (1.96)	Significance (p<0.05)	Inference
Social media	0.8.	0.9.	0.854	0.028	-3.57	1.96	Significant	Female usage higher
Messaging	0.90	0.90	0.90	0.023	0.00	1.96	Not significant	Equal usage
Online Shopping	0.50	0.80	0.662	0.035	-8.57	1.96	Significant	Female usage higher
Education	0.60	0.60	0.60	0.036	0.00	1.96	Not Significant	Equal usage

Source: Primary Data

The table can be interpreted in the following way

Regarding Social Media Apps: Female usage (90%) is significantly higher than male usage (80%). And its test statistic is $Z = -3.57, p < 0.05$. Which implies Gender difference is significant for the same.

In Messaging Apps: Both genders use messaging apps equally (90%). Whose $Z = 0.00, p > 0.05$, which implies No significant difference between the two genders.

In Online Shopping Apps: Female usage (80%) much higher than male usage (50%). And its $Z = -8.57, p < 0.05$ implies Gender difference is highly significant.

Regarding Educational Apps: Both genders have same level of usage (60%). $Z = 0.00, p > 0.05$ implies no significant difference.

Table. 5
Mode of Transaction by Gender (in Compliance with Internet & Wi-Fi Familiarity)

Mode of Transaction	Male (n=300)	Female (n=350)	Total (N=650)	Percentage (%)
Cash only	70 (23.3%)	100 (28.6%)	170	26.2%
UPI / Mobile Payments	150 (50.0%)	160 (45.7%)	310	47.7%
Debit/Credit Card	45 (15.0%)	55 (15.7%)	100	15.4%
Net Banking	15 (5.0%)	20 (5.7%)	35	5.4%
Mobile Wallets (Paytm, etc.)	20 (6.7%)	15 (4.3%)	35	5.4%
Total	300 (100%)	350 (100%)	650 (100%)	100%

Source: Primary Data

Table 5.1
Z-Test for Difference in Proportions (Digital vs Cash Transactions)

Statistic	Male	Female
Digital Users (Yes)	230	250
Non-Digital (Cash)	70	100
Sample Size (n)	300	350
Proportion (p)	0.767	0.714

Source: Primary Data

The testing procedure shows that Digital transaction preference is higher among Internet- and Wi-Fi-familiar users. Although males show a slightly higher digital usage rate (76.7%) than females (71.4%), the difference is statistically insignificant ($Z = 1.61, p > 0.05$). Regarding Cash dependence, it remains stronger among females (28.6%), reflecting the lower share of Internet/Wi-Fi literacy.

Table 6



Mode of Purchase by Gender

Mode of Purchase	Male (n=300)	Female (n=350)	Total (N=650)	Percentage (%)
Online Purchase	210 (70.0%)	230 (65.7%)	440	67.7%
Offline Purchase	90 (30.0%)	120 (34.3%)	210	32.3%
Total	300 (100%)	350 (100%)	650 (100%)	100%

Source: Primary Data

Table 6.1

Distribution of Mode of Purchase

Variable	Male (p ₁)	Female (p ₂)	Z Calculated	Z Critical (5%)	Result	Interpretation
Online Purchase vs Offline Purchase	0.700	0.657	1.17	±1.96	Not Significant	Males slightly more active in online shopping

Source: Primary Data

The analysis shows that 67.7% of respondents prefer online purchasing. Gender-wise differences exist but statistically insignificant, indicating a narrowing digital divide in e-commerce adoption. Both male and female respondents show similar trends, reflecting the influence of increasing Internet and Wi-Fi familiarity across genders.

Table.7

Online Movie Watching distribution

Mode of Watching Movies	Male (n=300)	Female (n=350)	Total (N=650)	Percentage (%)
Online Movie Watching	200 (66.7%)	220 (62.9%)	420	64.6%
Offline Movie Watching	100 (33.3%)	130 (37.1%)	230	35.4%
Total	300 (100%)	350 (100%)	650 (100%)	100%

Source: Primary Data

Table 7.1

Z-Test Summary for Online Movie Watching

Variable	Male (p ₁)	Female (p ₂)	Z Calculated	Z Critical (5%)	Result	Interpretation
Online Movie Watching	0.667	0.629	1.01	±1.96	Not Significant	Usage comparable across genders

About 64.6% of the sample watch movies online. Gender differences are minimal and statistically insignificant, indicating that digital media consumption for entertainment is fairly gender-neutral among respondents familiar with Internet and Wi-Fi. Offline movie watching (theaters, TV, DVD) remains more common among respondents lacking Internet/Wi-Fi familiarity, consistent with patterns seen in digital transaction and online shopping behavior.

Table.8

Social Media Account Ownership

Social Media Account	Male (n=300)	Female (n=350)	Total (N=650)	Percentage (%)
Has Social Media Account	250 (83.3%)	280 (80.0%)	530	81.5%
No Social Media Account	50 (16.7%)	70 (20.0%)	120	18.5%
Total	300 (100%)	350 (100%)	650 (100%)	100%

Source: Primary Data

Table 8.1

Z-Test Summary for Social Media Account Ownership

Variable	Male (p ₁)	Female (p ₂)	Z Calculated	Z Critical (5%)	Result	Interpretation
Social Media Account Ownership	0.833	0.800	1.08	±1.96	Not Significant	Ownership comparable across genders

Source: Primary Data

Approximately 81.5% of respondents have social media accounts. Gender differences are minimal and not statistically significant, reflecting gender-neutral adoption of social networking platforms among Internet/Wi-Fi-literate respondents. Respondents without Internet or Wi-Fi familiarity are much less likely to have social media accounts, consistent with trends in online transactions, movie watching, and online purchases

Table.9



NEFT Familiarity

NEFT Usage	Male (n=300)	Female (n=350)	Total (N=650)	Percentage (%)
Uses NEFT	180 (60.0%)	190 (54.3%)	370	56.9%
Does Not Use NEFT	120 (40.0%)	160 (45.7%)	280	43.1%
Total	300 (100%)	350 (100%)	650 (100%)	100%

Source: Primary Data

Table 9.1

Z-Test Summary for NEFT

Variable	Male (p ₁)	Female (p ₂)	Z Calculated	Z Critical (5%)	Result	Interpretation
NEFT Usage	0.600	0.543	1.46	±1.96	Not Significant	Usage comparable across genders

Source: Primary Data

About 56.9% of respondents use NEFT for digital banking. Gender differences are minimal and statistically insignificant, indicating that digital banking adoption via NEFT is nearly gender-neutral among Internet/Wi-Fi-literate respondents. Respondents lacking Internet/Wi-Fi familiarity are largely non-users, consistent with observed patterns in digital transactions, online purchase, movie watching, and social media usage.

Table.10

Familiarity on Crypto currency

Cryptocurrency Usage	Male (n=300)	Female (n=350)	Total (N=650)	Percentage (%)
Uses / Invests in Crypto	60 (20.0%)	40 (11.4%)	100	15.4%
Does Not Use Crypto	240 (80.0%)	310 (88.6%)	550	84.6%
Total	300 (100%)	350 (100%)	650 (100%)	100%

Source: Primary Data

Table 10.1

Z-Test Summary for Cryptocurrency

Variable	Male (p ₁)	Female (p ₂)	Z Calculated	Z Critical (5%)	Result	Interpretation
Cryptocurrency Usage	0.200	0.114	3.03	±1.96	Significant	Males significantly more likely to use crypto

Source: Primary Data

Only 15.4% of respondents use cryptocurrencies. Gender differences are statistically significant, with males (20%) more likely to adopt crypto than females (11.4%).

This contrasts with other digital behaviors like NEFT, online purchases, and social media, which showed minimal or non-significant gender differences, indicating that cryptocurrency adoption is still emerging and gender-skewed.

CONCLUSION

The study highlights the prevailing disparities and gradual progress in digital literacy among the Scheduled Caste (SC) community in Palakkad District, Kerala. Although access to smartphones and the internet has expanded considerably, a significant portion of the population continues to face barriers related to awareness, affordability, and training. Statistical analyses such as Chi-square and Z-tests confirm that gender-based variations in digital engagement are narrowing, particularly in areas like online education, e-governance, and social media use. However, differences remain evident in emerging domains such as cryptocurrency usage and advanced digital financial tools.

The findings underline the need for holistic digital inclusion strategies that go beyond basic device access, focusing instead on capacity building, skill enhancement, and awareness of cybersecurity and online privacy. Strengthening the implementation of initiatives like PMGDISHA and integrating digital education into community development programs can substantially improve socio-economic outcomes for the SC population. Ultimately, digital literacy should be viewed not merely as a technical competency but as a transformative tool for empowerment, social equality, and inclusive growth in India's digital era.

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