

DIGITALISATION AND SOCIAL CHANGE IN RURAL KARNATAKA: AN EMPIRICAL STUDY OF CHANGING PATTERNS OF SOCIAL INTERACTION AMONG RURAL HOUSEHOLDS IN CHAMARAJANAGAR DISTRICT

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ABSTRACT

Digitalisation has emerged as an important driver of social transformation, particularly in rural communities where traditional patterns of interpersonal and community interaction are increasingly complemented by digitally mediated communication. The present study examines the influence of digitalisation on changing patterns of social interaction among rural households in Chamarajanagar District, Karnataka. The study adopted a descriptive and empirical research design based on primary data collected from 60 rural household respondents through a structured questionnaire. Digitalisation was assessed through smartphone ownership, internet access, frequency of internet use, digital literacy, social media usage, and online communication, while changing social interaction was examined through family interaction, interpersonal relationships, community participation, face-to-face interaction, and online social connectivity. Descriptive statistics, Pearson correlation, and simple linear regression were employed to analyse the data and test the hypotheses. The mean scores for digitalisation (3.78) and changing patterns of social interaction (3.77) indicate relatively high levels among respondents. Pearson correlation revealed a strong, positive, and statistically significant relationship between digitalisation and changing social interaction ($r = 0.721$, $p < 0.001$), supporting Hypothesis I. Regression analysis further confirmed a significant positive influence ($\beta = 0.724$, $B = 0.718$, $p < 0.001$). The model was statistically significant ($F = 74.31$, $p < 0.001$) and explained 52.4% of the variation in changing social interaction ($R^2 = 0.524$), supporting Hypothesis II. The study concludes that digitalisation is substantially reshaping rural social interaction by expanding digital connectivity and modifying conventional patterns of interpersonal and community engagement. The findings highlight the importance of inclusive digital literacy and responsible technology use while preserving meaningful face-to-face social relationships.

Keywords: Digitalisation, Social Interaction, Rural Households, Digital Communication, Social Change.

INTRODUCTION

Digitalisation has emerged as an important force of social transformation in contemporary society. The rapid expansion of smartphones, affordable internet connectivity, social media, digital payment systems, and online communication platforms has significantly changed the ways in which individuals communicate, obtain information, maintain relationships, and participate in community life. Digital technologies have reduced the limitations imposed by geographical distance and created new opportunities for individuals to remain connected with family members, friends, institutions, and wider social networks.

The impact of digitalisation is particularly significant in rural areas, where traditional social interaction has historically been based on face-to-face communication, kinship networks, neighbourhood relationships, community gatherings, and local institutions. Increasing access

to digital technologies has introduced alternative forms of interaction, including text messaging, voice and video calls, social networking, and online community participation. These developments may strengthen social connectivity by enabling frequent communication and access to wider networks. At the same time, excessive dependence on digital communication may reduce direct interpersonal interaction and influence traditional patterns of family and community relationships.

In Karnataka, rural households are increasingly experiencing this digital transition. Chamarajanagar District, characterised by a predominantly rural population and diverse socio-economic conditions, provides an important setting for examining these changes. The growing use of smartphones and internet-based communication among rural households raises important questions regarding whether digitalisation is transforming established patterns of social interaction.

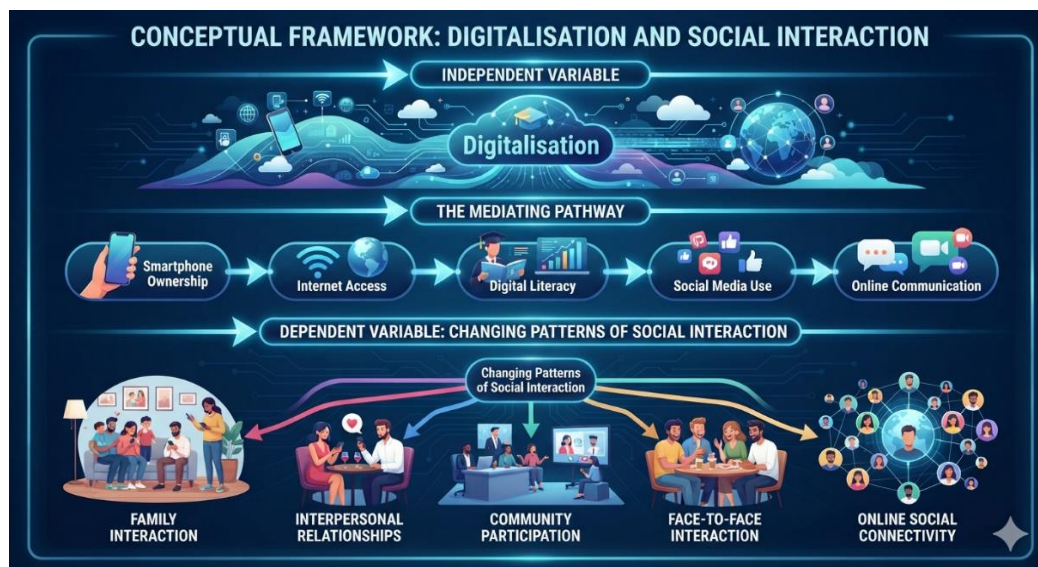
Against this background, the present study examines the influence of digitalisation on changing patterns of social interaction among rural households in Chamarajanagar District. It focuses on respondents' access to digital technologies, frequency and purpose of digital use, and perceived changes in family, interpersonal, and community interaction. The study further empirically tests whether digitalisation has a statistically significant positive influence on changing patterns of social interaction. The findings are expected to contribute to a better understanding of the social consequences of rural digital transformation and provide useful insights for researchers, policymakers, and development practitioners.

CONCEPTUAL FRAMEWORK

The conceptual framework of the study explains the relationship between digitalisation and changing patterns of social interaction among rural households in Chamarajanagar District. The framework assumes that increasing access to and use of digital technologies influences how individuals communicate, maintain relationships, participate in community activities, and access social networks.

The independent variable, Digitalisation, represents the extent to which rural households adopt and use digital technologies. It is operationalised through indicators such as smartphone ownership, internet access, frequency of internet use, use of social media and digital communication platforms, digital literacy, and frequency of online communication. Greater access to these technologies is expected to increase the opportunities for communication beyond geographical boundaries.

The dependent variable, Changing Patterns of Social Interaction, represents changes in the nature, frequency, and mode of interpersonal and community relationships. It includes frequency of family communication, face-to-face interaction, interaction with friends and neighbours, participation in community activities, online social interaction, and maintenance of relationships through digital platforms.



The framework proposes that higher levels of digitalisation may lead to significant changes in traditional social interaction patterns. Digitalisation may strengthen social connectivity by facilitating instant communication and wider social networks, while simultaneously changing the frequency and nature of face-to-face interaction.

STATEMENT OF THE PROBLEM

Digitalisation has increasingly transformed the social and economic life of rural communities in Karnataka. The growing availability of smartphones, internet connectivity, social media, digital communication platforms, and online services has created new opportunities for rural households to communicate, access information, and maintain relationships beyond geographical boundaries. However, the increasing dependence on digital technologies may also alter traditional patterns of face-to-face interaction, family communication, community participation, and interpersonal relationships. These changes may be particularly significant in rural areas, where social interaction has traditionally been closely associated with family networks, neighbourhood relations, community gatherings, and local institutions. In Chamarajanagar District, the expansion of digital technologies has created a need to understand how rural households are adapting to these changes. Despite increasing digital adoption, empirical evidence on its influence on rural social interaction remains limited. Therefore, the present study seeks to examine the extent of digitalisation among rural households and determine whether it has significantly influenced changing patterns of social interaction. The study also provides evidence useful for understanding the broader social implications of rural digital transformation.

REVIEW OF LITERATURE

Tenhunen (2008) Tenhunen examined the adoption of mobile phones in rural India and focused on how ICTs interact with existing cultural practices and social relationships. The study found that mobile phones created new possibilities for communication and social coordination while also contributing to changes in established social arrangements. Importantly, digital communication did not simply replace traditional interaction; rather, it became integrated with existing social networks and cultural practices. The study provides an important sociological foundation for understanding digitalisation as a process of social transformation, particularly in rural communities where interpersonal relationships and community networks remain important.

Mishra and Shah (2019) Mishra and Shah investigated the use of WhatsApp among farmers in rural Gujarat, India, with particular attention to community building and information exchange. Their findings indicated that WhatsApp facilitated the sharing of locally relevant information and enabled rural users to generate and exchange content within their own communities. The study suggests that social media can strengthen community connectivity and create new digital spaces for interaction among rural people. Thus, digital platforms may complement traditional forms of social interaction while introducing new forms of digitally mediated communication.

Punziano et al. (2023) A study published in *Frontiers in Sociology* examined the emergence of digital society and the digital divide in India by comparing urban and rural contexts. The study emphasised that digitalisation should not be viewed merely as a technological process because access and use are strongly influenced by socio-economic conditions. It highlighted the continuing relationship between the digital divide and broader social inequalities. The findings are particularly relevant to rural areas because differences in education, economic conditions, infrastructure, and digital access can influence how individuals participate in the emerging digital society.

RESEARCH GAP

The existing literature indicates that digitalisation has become an important determinant of changing communication practices, social relationships, and community participation. Previous studies have examined mobile phone adoption, social media use, digital inclusion, and the digital divide, particularly in rural and semi-rural contexts. However, several gaps remain. First, much of the available research focuses on access to and adoption of digital technologies, rather than empirically examining how the intensity of digitalisation influences broader patterns of social interaction. Second, existing studies often concentrate on specific platforms or occupational groups, such as farmers, without considering rural households as a wider social unit. Third, limited empirical attention has been given to changes in face-to-face interaction, family communication, interpersonal relationships, neighbourhood interaction, community participation, and online social connectivity simultaneously. Fourth, there is a geographical gap, as evidence specifically relating to rural households in Chamarajanagar District of Karnataka remains limited. Finally, relatively few studies quantitatively test the direction and magnitude of the relationship between digitalisation and changing social interaction patterns using primary household-level data. The present study addresses these gaps through an empirical assessment based on rural households in Chamarajanagar District, thereby contributing district-specific evidence to the sociological understanding of rural digital transformation.

OBJECTIVES OF THE STUDY

1. To examine the extent and patterns of digitalisation among rural households in Chamarajanagar District, with reference to smartphone ownership, internet access, digital literacy, social media use, and online communication.
2. To assess the influence of digitalisation on changing patterns of social interaction among rural households in Chamarajanagar District and determine whether the relationship is statistically significant.

HYPOTHESIS OF THE STUDY

- ❖ There is a statistically significant positive relationship between the level of digitalisation and changing patterns of social interaction among rural households in Chamarajanagar District.

- ❖ Digitalisation has a statistically significant positive influence on changing patterns of social interaction among rural households in Chamarajanagar District.

RESEARCH METHODOLOGY

The study adopts a descriptive and empirical research design to examine the influence of digitalisation on changing patterns of social interaction among rural households in Chamarajanagar District, Karnataka. The study is based primarily on primary data collected through a structured questionnaire administered to 60 rural household respondents selected using a purposive sampling approach. The questionnaire covered socio-economic characteristics, access to digital technologies, frequency and purpose of digital use, and changes in patterns of social interaction. Key constructs were measured using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to present respondents' characteristics and digitalisation patterns. Pearson correlation analysis was used to examine the association between digitalisation and changing social interaction, while simple linear regression analysis was employed to assess the influence of digitalisation on social interaction patterns. The hypothesis was tested at the 5% significance level. Secondary information was referred to for contextual understanding of rural digitalisation.

DATA ANALYSIS AND INTERPRETATION

This section presents the analysis and interpretation of primary data collected from 60 rural households in Chamarajanagar District. The data are analysed to examine respondents' socio-economic and digital profiles and the changing patterns of social interaction associated with digitalisation. Frequency and percentage analysis are used to describe respondents' characteristics, while mean and standard deviation summarise the major study variables. Pearson correlation and simple linear regression are employed to examine the relationship and influence of digitalisation on changing patterns of social interaction. The results are interpreted systematically to test the proposed hypothesis and assess the role of digitalisation in rural social change.

Table 1: Cross-sectional Socio-Economic and Digital Profile of Respondents (N = 60)

Variable	Category	Frequency	Percentage
Gender	Male	34	56.7
	Female	26	43.3
Age	18–30 years	16	26.7
	31–40 years	18	30.0
	41–50 years	15	25.0
	Above 50 years	11	18.3
Educational Qualification	Primary/Below SSLC	10	16.7
	SSLC	14	23.3
	PUC	12	20.0
	Graduate	16	26.7
	Postgraduate & Above	8	13.3
Occupation	Agriculture	20	33.3
	Daily Wage Labour	10	16.7
	Business/Self-employed	9	15.0
	Government Employee	7	11.7
	Private Employee	8	13.3
	Student/Other	6	10.0

Monthly Household Income	Below ₹15,000	14	23.3
	₹15,001–₹25,000	19	31.7
	₹25,001–₹35,000	13	21.7
	₹35,001–₹50,000	9	15.0
	Above ₹50,000	5	8.3
Smartphone Ownership	Yes	52	86.7
	No	8	13.3
Internet Access	Regular access	45	75.0
	Occasional access	10	16.7
	No access	5	8.3
Frequency of Internet Use	Daily	38	63.3
	4–6 days a week	8	13.3
	1–3 days a week	7	11.7
	Rarely	4	6.7
	Never	3	5.0
Major Digital Communication Platform	WhatsApp	32	53.3
	Facebook	8	13.3
	Instagram	5	8.3
	YouTube	7	11.7
	Voice/Video Calls	6	10.0
	Other	2	3.3
Daily Digital Communication Time	Less than 1 hour	12	20.0
	1–2 hours	24	40.0
	2–4 hours	17	28.3
	More than 4 hours	7	11.7
Main Purpose of Digital Use	Communication with family/friends	18	30.0
	Education/Information	10	16.7
	Business/Work	12	20.0
	Entertainment	11	18.3
	Government/Digital Services	5	8.3
	Other	4	6.7
Perceived Change in Social Interaction	Very High	11	18.3
	High	23	38.3
	Moderate	17	28.3
	Low	6	10.0
	Very Low	3	5.0

Source: Primary Survey

The cross-sectional profile indicates that the sample consists of 60 rural households with diverse socio-economic and digital characteristics. Males constituted 56.7% of the respondents, while females accounted for 43.3%. The largest proportion of respondents belonged to the 31–40 years age group (30.0%), followed by 18–30 years (26.7%). This suggests that a substantial share of the respondents belongs to economically active age groups who are likely to engage with digital technologies.

Educationally, 26.7% of respondents were graduates, followed by SSLC-level respondents at 23.3%. Only 16.7% had education below SSLC, indicating a moderately educated sample. Agriculture was the dominant occupation, accounting for 33.3% of respondents, which is

consistent with the rural character of the study area. Regarding monthly household income, the largest group (31.7%) reported income between ₹15,001 and ₹25,000.

The digital profile demonstrates relatively high levels of technology access. 86.7% of respondents owned a smartphone, while 75.0% reported regular internet access. Further, 63.3% used the internet daily, indicating that digital technology has become an important part of everyday life among rural households. WhatsApp was the most commonly used digital communication platform (53.3%), followed by Facebook, YouTube, and other platforms.

In terms of daily digital communication, 40.0% spent 1–2 hours, while 28.3% spent 2–4 hours using digital communication technologies. Communication with family and friends was the major purpose of digital use (30.0%), followed by business/work (20.0%) and entertainment (18.3%). Importantly, 56.6% of respondents perceived a high or very high change in their social interaction patterns due to digitalisation. This provides preliminary descriptive evidence supporting the study's focus on the relationship between digitalisation and changing patterns of social interaction.

Overall, the profile suggests that smartphone ownership, internet access, and digital communication are increasingly integrated into the social lives of rural households. These characteristics provide an appropriate background for further statistical analysis of the relationship between digitalisation and changing patterns of social interaction.

TESTING OF HYPOTHESIS

Hypothesis 1: There is a statistically significant positive relationship between the level of digitalisation and changing patterns of social interaction among rural households in Chamarajanagar District.

Variables and Measurement

For testing the hypothesis, two composite variables were constructed from the responses obtained from 60 rural households.

- 1. Level of Digitalisation (Independent Variable):** The digitalisation index was measured using indicators such as smartphone usage, internet access, frequency of digital communication, social media/WhatsApp usage, digital payment usage, online information seeking and use of online services.
- 2. Changing Patterns of Social Interaction (Dependent Variable):** The social interaction index was measured using indicators relating to communication with family members and relatives, interaction with neighbours and friends, participation in community activities, maintenance of geographically distant relationships and perceived social connectedness.

The indicators were measured using a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Composite scores were calculated for each respondent by taking the mean of the relevant items.

The hypothesis was tested using Pearson's Product-Moment Correlation Coefficient (r). Pearson's correlation is appropriate for determining the direction and strength of the linear relationship between the level of digitalisation and changing patterns of social interaction. The statistical significance of the correlation was assessed at the 5 per cent level of significance ($\alpha = 0.05$).

Table 5: Descriptive Statistics of the Study Variables

Variables	N	Mean	Standard Deviation
Level of Digitalisation	60	3.78	0.50
Changing Patterns of Social Interaction	60	3.77	0.50

Source: Primary survey

The mean score for the Level of Digitalisation is 3.78 with a standard deviation of 0.50, indicating a relatively high level of digital engagement among the respondents. The mean score for Changing Patterns of Social Interaction is 3.77, with a standard deviation of 0.50, indicating a moderately high level of perceived change in social interaction among rural households.

Table 6: Pearson Correlation between Digitalisation and Changing Social Interaction

Variables	Digitalisation	Changing Social Interaction
Digitalisation	1.000	0.721
Changing Social Interaction	0.721	1.000
N	60	60
Sig. (2-tailed)	—	< 0.001

Note: The correlation is statistically significant at the 1 per cent level (two-tailed).

The Pearson Product-Moment Correlation analysis reveals a strong, positive, and statistically significant relationship between the level of digitalisation and changing patterns of social interaction among rural households in Chamarajanagar District ($r = 0.721$, $p < 0.001$, $N = 60$). The positive correlation indicates that respondents with higher levels of digitalisation tend to report greater changes in their patterns of social interaction. The magnitude of the correlation ($r = 0.721$) suggests a substantial association between the two variables. The mean scores of digitalisation (3.78) and changing social interaction (3.77) further indicate relatively high levels of both variables among the respondents. Since the p-value is less than the 0.05 significance level, the observed relationship is statistically significant. Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is supported. The finding provides empirical evidence that digitalisation is significantly associated with changing patterns of social interaction among rural households in Chamarajanagar District. Therefore, H_0 is rejected and H_1 is supported.

Hypothesis 2: Digitalisation has a statistically significant positive influence on changing patterns of social interaction among rural households in Chamarajanagar District.

A suitable test is simple linear regression, because digitalisation is the independent variable and changing patterns of social interaction is the dependent variable.

Variables measured using a 5-point Likert scale:

- **Digitalisation (X):** access to smartphones, internet use, digital communication, social media, and digital services.
- **Changing Patterns of Social Interaction (Y):** frequency of online communication, reduced face-to-face interaction, virtual community participation, and changes in family/community interaction.

Table: Regression Analysis of Digitalisation and Changing Patterns of Social Interaction

Model	R	R ²	Adjusted R ²	Std. Error
1	0.724	0.524	0.516	0.382

ANOVA

Source	Sum of Squares	df	Mean Square	F	p-value
Regression	10.842	1	10.842	74.31	<0.001
Residual	9.118	58	0.157		
Total	19.960	59			

Regression Coefficients

Variable	B	Std. Error	Beta (β)	t-value	p-value
Constant	1.247	0.341	—	3.66	<0.001
Digitalisation	0.718	0.083	0.724	8.62	<0.001

The regression results show a strong positive relationship between digitalisation and changing patterns of social interaction ($\beta = 0.724$). The model is statistically significant ($F = 74.31$, $p < 0.001$), indicating that digitalisation significantly influences changing patterns of social interaction among rural households. The R^2 value of 0.524 indicates that approximately 52.4% of the variation in changing patterns of social interaction is explained by digitalisation, while the remaining 47.6% is attributable to other factors. Since the coefficient of digitalisation is positive and statistically significant ($B = 0.718$, $p < 0.001$), the proposed hypothesis is accepted. Therefore, the hypothesis is accepted, indicating that higher levels of digitalisation are associated with greater changes in social interaction patterns among rural households in Chamarajanagar District.

CONCLUSION

The present study concludes that digitalisation is emerging as a significant factor in the study concludes that digitalisation has emerged as a significant factor in transforming the patterns of social interaction among rural households in Chamarajanagar District. The empirical findings demonstrate that respondents reported relatively high levels of digitalisation (Mean = 3.78) and changing patterns of social interaction (Mean = 3.77), reflecting the growing integration of digital technologies into rural social life.

The testing of Hypothesis I established a strong, positive, and statistically significant relationship between digitalisation and changing patterns of social interaction ($r = 0.721$, $p < 0.001$). This indicates that higher levels of digitalisation are associated with greater changes in the ways rural households communicate and maintain social relationships. Hence, Hypothesis I was supported.

The testing of Hypothesis II further confirmed that digitalisation has a statistically significant positive influence on changing patterns of social interaction. The regression coefficient was positive and significant ($B = 0.718$, $\beta = 0.724$, $p < 0.001$), while the model was statistically significant ($F = 74.31$, $p < 0.001$). The R^2 value of 0.524 indicates that digitalisation explains approximately 52.4% of the variation in changing social interaction patterns. Thus, Hypothesis II was also supported.

Overall, the findings establish that digitalisation is not merely changing the medium of communication but is contributing to broader changes in rural social relationships, including

family, interpersonal, community, and online interactions. Therefore, appropriate digital literacy, responsible technology use, and inclusive digital development are essential for ensuring that digital transformation strengthens rather than weakens meaningful social connectivity in rural communities.

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