

A Study on the Influence of Average Family Income on Joining Computer Courses and Sources of Learning the Internet with Special Reference to Adolescent Students of South Gujarat

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ABSTRACT

The importance of Digital literacy is increasing day by day in every aspect of life. Computers and other digital devices have become an integral part of our daily lives. This study explores the relationship between students' access to digital learning opportunities beyond the formal school environment, specifically regarding their participation in computer courses. The objectives of this study are (1) to study the association between average family income and the likelihood of joining a computer course outside school, and (2) the association between average family income and the initial source through which students learned to use the internet. The study has employed a quantitative approach and collected primary data from four different government-aided schools through a self-structured questionnaire. Statistical analysis was employed to identify patterns and correlations. Finding indicates that factors beyond just income, such as awareness, priorities, or accessibility, may play a role in the decision to enrol in computer courses. Also reveals that learners from lower-income households depend significantly on family members as a primary source for acquiring internet skills.

Keywords: *Digital Learning, Income and Computer Literacy, Digital Opportunity*

The nation may benefit from its youthful population if they are well-equipped with technology. (Tapashi, 2018) In today's digital era, digital literacy is very crucial for life and computer skills are the cornerstone of digital literacy. Therefore, acquiring computer skills is a very important aspect for digital literacy, joining a computer course is essential for acquiring fundamental skills that are increasingly necessary in education, the workplace and daily life. Computer classes offer organised instruction that improves students' ability to use digital tools, navigate the internet, and comprehend software programs. In a technologically advanced society, these abilities not only boost academic achievement but also raise employability and professional options. An unequal adoption of technology precludes many from harvesting the fruits of the digital economy. Those who are proficient in using new information and communication tools, like the Internet, and those who are not, differ greatly. (Thakur, 2014) Additionally, computer literacy enables people to interact effectively, acquire information, and take part more actively in the digital economy.

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Such courses can promote social and educational justice by bridging the digital divide for students from under-resourced backgrounds.

Need for the Study

Digital literacy is not a choice in the twenty-first century; it is a necessity. Every aspect of modern life, including communication, job searching, online learning, and skill development, depends heavily on the digital world. Having access to digital resources helps young people learn, be creative, grow as individuals, and get ready for a technologically advanced future. However, not everyone has equal access to digital opportunities and resources. It is difficult for many students from low-income families to get devices, internet access, and official instruction. Because of this discrepancy, there is a "digital divide," whereby only people from wealthier backgrounds are able to fully benefit from technological advancements. As a result, students from underprivileged backgrounds might find that their academic performance, social skills, and employment opportunities are lacking. Ensuring equal digital opportunities means ensuring that all young people, regardless of their family's financial status, have the opportunity to learn how to use computers, navigate the internet safely, and use technology for their education and personal growth. Additionally, it involves creating digital infrastructure, providing affordable training courses, and increasing awareness in both urban and rural areas. Giving everyone access to digital opportunities involves more than just technology; it also involves equity, justice, and the future of future generations.

Digital Opportunity in India

India has become a major force in the global digital economy due to a sharp rise in internet access, mobile device use, and digital platforms. The term "digital opportunity" refers to equitable access to digital tools, resources, education, and services that help people prosper in the information-driven world of today. In a nation as diverse and vast as India, digital opportunity can help close gaps in social equity, employment, and education. The Indian government started the Digital India initiative in 2015 with the goal of making the nation a knowledge-based economy and a digitally enabled society. Its three main areas of focus are online service delivery, digital infrastructure, and digital literacy. (MeitY, 2023) According to a report by the Internet and Mobile Association of India (IAMAI) and Kantar (2023), there were over 759 million active internet users in India by the middle of 2022, with rural areas growing faster than urban areas. (KANTAR | IMAI, 2023) Despite these advancements, the digital divide persists. Particularly in rural and isolated areas, many low-income families do not have access to digital devices, dependable internet service, or formal computer education. This disparity affects the learning and skill-development opportunities for teenagers. According to the UNICEF India (2021) report, during the COVID-19 pandemic, only 24% of Indian households with school-age children had internet access, indicating a serious lack of digital inclusion for educational purposes. (unicef, 2021)

To promote accessible online education, particularly for underserved groups, the government responded by launching platforms like as SWAYAM, DIKSHA, and PMGDISHA.(pib,2021) India must continue to invest in digital infrastructure, reasonably priced devices, teacher preparation, and community-level digital literacy programs to fully reap the benefits of digital progress. In order to ensure equitable development and prepare the next generation for a technologically driven future, it is imperative that the digital divide be closed.

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Statement of the Problem

Proficiency in computer usage and internet navigation has become essential for future employment opportunities, skill development, and academic success in today's rapidly evolving digital environment. However, there are often disparities in access to digital education and the capacity to acquire these skills, especially among youth from different socioeconomic backgrounds. A student's household income can have a big impact on their ability to take part in formal computer training and where they look for internet education in places like South Gujarat, where there are economic disparities. Many students from low-income families may find it difficult to pay for formal computer courses and instead turn to unofficial learning through friends, mobile devices, or local resources. This difference in access has the potential to exacerbate already-existing social and educational disparities by creating a digital divide. Despite public and private efforts to improve digital literacy, little research has been done on the precise effects of family income on the digital learning paths of teenagers in the South Gujarat region. The purpose of this study is to look into the various ways that teenagers learn to use the internet and how average household income affects their decision to enrol in computer courses. The study aims to provide educators, legislators, and community leaders with useful insights to develop more inclusive and successful digital education strategies by better understanding these factors.

Objectives

The following were the objectives of the study.

- To study the association between average family income and the likelihood of joining a computer course outside school, and
- To study the association between average family income and the initial source through which students learned to use the internet.

Hypothesis

The following are the hypotheses of the study.

- **H0:** There is no association between average family income and enrolment in a computer course outside the school curriculum.
- **H1:** There is an association between average family income and enrolment in computer courses outside the school curriculum.

REVIEW OF LITERATURE

(Lukáč et al., 2025) has conducted a study to investigate the influence of socio-demographic factors on digital literacy and cybersecurity. The study has employed a cross-sectional exploratory research design with a quantitative approach. It has used secondary data from OECD and the World Bank. It has used analytical techniques like cluster analysis and multivariate regression to examine the impact of socio-economic and demographic factors on digital literacy. The study has confirmed the influence of socio-economic factors on digital literacy and cybersecurity. The study suggests the policy with a targeted digital literacy programme for all age groups, with the required special training for teachers.

(Lou et al., 2024) has conducted a study to examine the influence of socio-demographic factors on the digital literacy of adolescent students. The study has used cross sectional survey method. It has employed non-probability, convenience sampling methods, collecting data from 1894 respondents from adolescent students belonging to secondary and higher secondary schools. It has used analytical techniques such as correlation analysis, confirmatory factor analysis and hierarchical regression analysis. The study has found a

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significant association between parents' educational status and the family's economic condition with adolescents' digital literacy.

Heni Purnama and Wulansari (2025) have conducted a study involving 533 junior high school students, which found that self-concept, interactions with peers, bullying behaviour, parenting styles, and the use of social media significantly influence teenagers' self-concept in the digital era. The average age of participants was 13, with females making up the majority at 54.4%, and most were in the eighth grade. The parenting style most commonly reported was permissive parenting. The average scores for bullying behaviour and social media usage were 43.53 and 57.00, respectively. Bivariate analysis revealed significant relationships between self-concept and factors such as bullying, peer interactions, parenting styles, gender, and grade level. The findings highlight the need for early preventive actions by educators, healthcare providers, and mental health professionals to foster a positive self-concept. Future research should focus on creating and evaluating interventions aimed at enhancing teenagers' self-concept across various digital and social contexts.

Rezki Suci Qamariaac et al. (2025) have conducted a study that defines Digital resilience refers to the capacity to safeguard oneself and bounce back from adverse experiences encountered through online digital channels. Risk and digital resilience are interconnected since the former only emerges through encounters with circumstances that relate to stressful online interactions, a principle emphasised in resilience theory. As individuals learn to navigate challenges in the digital realm, they cultivate their digital resilience. Current research typically focuses on digital resilience in children, adults, and minority groups. However, the adolescent demographic, which is particularly susceptible to online dangers, requires more in-depth investigation. The ecological perspective is the prevalent approach in studies of digital resilience. To foster digital resilience among adolescents, it is essential to promote close interactions across individual, family, community, and societal levels. These four dimensions can offer protective factors that enhance adolescent digital resilience. Regarding the digital resilience of young people, future research should take into account protective elements such as parental support, the quality of friendships, and emotional regulation skills. Additionally, adolescents' comprehension of and proficiency in using online digital media can further bolster the impact of these protective factors on the development of sufficient digital resilience. The findings of this study highlight the necessity of nurturing digital resilience in adolescents by utilising an ecological theory perspective tailored to young populations.

(Scherer & Siddiq, 2019) has conducted a study which examines the relation between students' socioeconomic status and ICT- information and communication technology literacy. The study reveals that there may be gaps in the ICT literacy area, as shown by the study's finding of a positive and substantial connection with socioeconomic status. Although these gaps did exist, they were not as prominently exhibited in studies as they were in other, more conventional disciplines like science, math, and reading.

(Harris et al., 2017) has conducted a study that tries to examine how the use of ICT devices influences the digital divide. Its results indicate that a person belonging to the lower section has used an ICT device for non-productive and non-academic use. These patterns may affect future economic, academic, and health outcomes.

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(Hurwitz & Schmitt, 2020) Conducted a study that tries to examine the relationship between the impact of internet use and digital skills during early childhood on middle childhood's academic performance. Study results reveal that digital skills were significantly correlated with school performance in middle school. It also suggests that the early introduction of digital technology proved to be productive in future as long as children use it to acquire digital skills.

There is a limited number of studies on the subject of digital literacy of adolescent students of the selected region, that is, South Gujarat. Also, studies on digital literacy and the socioeconomic status of students who attend government-supported schools are very limited. So, the present study can add valuable knowledge about the relationship between digital literacy and economic conditions.

RESEARCH METHODOLOGY

The study is descriptive and analytical in nature. A descriptive research design is used to describe the patterns of computer course enrolment and internet learning sources. An analytical research design is used to analyse the influence of family income on digital education access.

The study mainly uses primary data, which was collected through a self-constructed questionnaire. The universe of the study is adolescent students of classes 11th and 12th. A total of 400 samples were collected from four different government-aided higher secondary schools of Surat district. The present study has employed statistical measures and techniques like Chi-Square to check the association between average family income and the likelihood of joining a computer course outside school, and to study the association between average family income and the initial source through which students learned to use the internet.

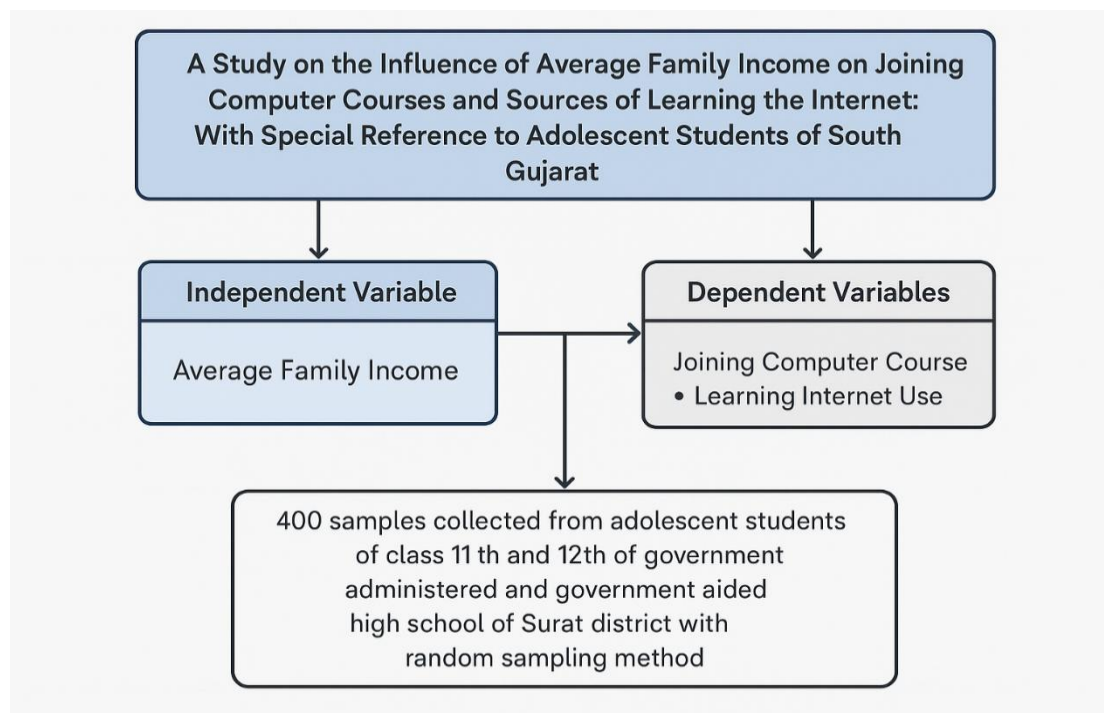


Fig.1 research methodology

RESULT AND DISCUSSION

Relationship between family income and participation in a computer course

To understand the influence of family income on students' participation in computer courses outside their school curriculum, a cross-tabulation was prepared, followed by a Chi-Square test of association.

Table 1: Average income of the family and joining a computer course outside your school curriculum.

Crosstab			A Computer Course Joined Outside the School Curriculum		Total
			Yes	No	
The Average Income of the Family	Below 20,000	Count	63	48	111
		%	56.8%	43.2%	100.0%
	Between 20,001 to 25,000	Count	74	61	135
		%	54.8%	45.2%	100.0%
	Between 25,001 to 30,000	Count	0	108	108
		%	0.0%	100.0%	100.0%
	More than 30000	Count	23	23	46
		%	50.0%	50.0%	100.0%
Total		Count	160	240	400
		%	40.0%	60.0%	100.0%

Table 1 reveals that out of the total 400 students, only 160, which is 40%, have taken a computer course outside of their school. This means that 60% (240 out of 400) have not participated in any external computer courses. The income brackets of Rs. 20,000 to Rs. 25,000 and below Rs. 20,000 represent the highest levels of engagement, both in terms of numbers and percentages. Among those earning below Rs 20,000, 63 out of 111 students (56.8%) have enrolled in courses. In the income range of Rs. 20,001 to Rs. 25,000, 74 out of 135 students (54.8%) have signed up. Notably, all 108 students in the income category of Rs. 25,001 to Rs. 30,000 have not taken any computer courses, showing complete disengagement. In the group of students earning over Rs 30,000, participation is evenly split. It is worth noting that 100% of individuals in the Rs 25,001 to Rs 30,000 income range have chosen not to participate, which might suggest a lack of interest or access, along with other priorities in this income category. Although this specific group may not belong to the lowest income bracket, it could be beneficial to explore the reasons behind their lack of participation. The motivation to gain skills for improved future opportunities might explain why individuals from lower-income groups (earning under ₹25,000) show higher rates of involvement.

Table 2: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	99.249 ^a	3	.000
Likelihood Ratio	136.898	3	.000
Linear-by-Linear Association	30.009	1	.000
N of Valid Cases	400		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.40.			

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Table 2 reveals that the null hypothesis has been dismissed because the Pearson Chi-Square value is 99.249 and the p-value is 0.000, both of which are below 0.05. There is a significant correlation between enrolling in a computer course and family income. This significant value suggests that while enrolment in a computer course may not always increase, it does change in correlation with income levels. There is a statistical correlation between average family income and students' enrolment in computer courses. This indicates that a student's ability or choice to take additional computer courses is affected by their economic status, although not in a consistent manner (as evidenced by the lack of participation from the middle-income group).

Relationship between family income and the first learning source of the internet

Table 3: Average Income of the Family and Sources of learning to use the internet

			Source of first learn to use the internet				Total
			Computer course	Friends	Family	By own self	
The average income of the family	Below 20,000	Count	21	0	74	16	111
		%	18.9%	0.0%	66.7%	14.4%	100.0%
	Between 20,001 to 25,000	Count	25	0	89	21	135
		%	18.5%	0.0%	65.9%	15.6%	100.0%
	Between 25,001 to 30,000	Count	0	78	0	30	108
		%	0.0%	72.2%	0.0%	27.8%	100.0%
	More than 30000	Count	10	2	21	13	46
		%	21.7%	4.3%	45.7%	28.3%	100.0%
Total		Count	56	80	184	80	400
		%	14.0%	20.0%	46.0%	20.0%	100.0%

The largest proportion of students (46% overall) acquired their internet skills from their families. Friends and self-directed learning each accounted for 20%, while only 14% participated in a computer-based course. Among low-income individuals (earning less than ₹25,000), approximately 66% learned from their families, whereas only about 18% attended computer classes. In contrast, the middle-income group (₹25,001–30,000) shows a different trend: 72.2% learned through friends, with no one learning from family or classes. For those in higher income brackets (above ₹30,000), the distribution is more balanced: 45.7% learned from their families, 28.3% were self-taught, 21.7% took courses, and 4.3% learned from friends.

Table 4: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	302.618 ^a	9	.000
Likelihood Ratio	355.959	9	.000
Linear-by-Linear Association	.671	1	.413
N of Valid Cases	400		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.44.			

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The results are highly statistically significant, evidenced by a Pearson Chi-Square value of 302.618 with a p-value of 0.000. Consequently, the null hypothesis is rejected, which demonstrates a strong relationship between family wealth and the primary means by which students initially accessed the internet. There is a pronounced and statistically significant correlation between a student's family income and their original method of learning to use the internet. This variation is meaningful and not attributable to chance, as different income brackets depend on various sources such as friends, family, self-education, or formal courses.

The findings indicate that family income significantly influences the pathways through which students acquire digital skills. Lower-income families depend heavily on household guidance, while higher-income families enable diverse opportunities such as formal courses and self-learning. Middle-income families, particularly those earning between ₹25,001–₹30,000, present a unique case, with low engagement in computer courses and reliance on peers for internet learning.

The study results indicate the existence of a digital inequality not only between high- and low-income groups but also within middle-income segments. It also supports the findings of Previous studies (Scherer & Siddiq, 2019), which have emphasised that socioeconomic conditions shape both access to and modes of digital skill acquisition. The present study findings are consistent with such perspectives and highlight the need for targeted interventions to ensure equitable digital literacy across income groups.

CONCLUSION

The study concludes with the result suggesting that a statistically significant relationship exists between family income and participation in computer courses. Lower- and higher-income families demonstrate stronger engagement, while middle-income families (₹25,001–₹30,000) show minimal participation.

The study also found that Family income is significantly associated with the first source of internet learning. Lower-income groups depend largely on family members, middle-income groups on friends, while higher-income families support diversified learning sources such as courses, family guidance, and self-directed exploration.

These findings reveal a clear digital inequality influenced by socioeconomic status, which affects not only access to computer courses but also the nature of internet learning pathways.

The study suggests a specific intervention programme that should focus not only on lower-income groups but also on middle-income families. The study found that there is a need for encouragement and support from parents to use digital devices. The government should introduce free or subsidised digital literacy programs targeted at economically weaker and middle-income groups.

Limitations of the Study

The present study is limited to only adolescent students aged 16-17-18. Also, samples were collected from the four high schools of the Surat district, which include classes 11th and 12th only. Samples were taken from only government-aided or administered schools, so there is no representation of private school students or students belonging to classes other than classes 11th and 12th. The accuracy of the information depends on the adequacy of the understanding of the respondents.

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Conflict of Interest

The author(s) declared no conflict of interest.

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