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Socio-Personal and ICT Engagement Factors among Postgraduate Students of Acharya N.G. Ranga Agricultural University

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ABSTRACT

Information and Communication Technologies (ICTs) have significantly transformed educational environments, offering new possibilities for learning and collaboration. However, their effectiveness differs among students due to socio-personal and ICT engagement factors. This study evaluated these factors among postgraduate students at Acharya N.G. Ranga Agricultural University (ANGRAU) in Andhra Pradesh. Conducted during 2022-2023 with an ex-post facto research design, the study involved students from the university's colleges of Agriculture, Agricultural Engineering & Technology, and Community Sciences. A total of 120 students were selected using proportionate random sampling. Data on socio-personal and ICT engagement factors were gathered through an interview schedule and analyzed using descriptive statistics, including mean, standard deviation, frequency, and percentage. The results showed a higher representation of female students and a medium level of ICT tool knowledge. Although students exhibit high awareness of ICT services, they underutilized these tools for academic purposes. ICTs were primarily used for online lectures and entertainment, with minimal engagement in formal online courses. The study recommends enhancing advanced ICT training, improving resource accessibility, and better integrating ICT into educational frameworks. Future research should assess the effectiveness of these interventions and develop strategies to maximize ICT's impact on postgraduate academic success.

Key Words: ICT, Postgraduate students, Socio-Personal, ICT engagement factors

INTRODUCTION

In the contemporary era, Information and Communication Technologies (ICTs) have become integral to the advancement of education, playing a vital role in improving academic performance and supporting scholarly activities (Liaw *et al*,2007). These technologies, encompassing a broad range of hardware, software, and digital tools including video and audio equipment have revolutionized the way information is processed, communicated, and utilized (Singh *et al,*2021). As institutions of higher learning, universities are pivotal in equipping students with the intellectual tools necessary for academic success, and libraries within these institutions have evolved from relying solely on static print materials to embracing dynamic and flexible online resources. In Agricultural Universities, postgraduate students increasingly depend on ICTs to facilitate their research, coursework, and collaborative projects (Gaikwad *et al*,2016). Despite the widespread integration of these technologies into the academic environment, the effectiveness of ICT utilization varies significantly among students. This variability is influenced by a range of socio-personal factors, including but not limited to gender, educational background, family income, and residential location. Additionally, ICT engagement factors such as the level of knowledge about ICT tools, accessibility, and the purpose and extent of ICT usage play a critical role in determining how these technologies impact academic performance.

Understanding the interplay between socio-personal characteristics and ICT

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engagement is crucial for identifying barriers and opportunities in educational settings. This research assessed these factors among postgraduate students at Agricultural University to provide a comprehensive analysis of how they influence academic excellence. The findings offered insights for educators and policymakers to enhance ICT integration and develop targeted support mechanisms. Ultimately, the study seeks to improve educational outcomes and academic success by leveraging a nuanced understanding of ICT utilization and socio-personal factors.

MATERIALS AND METHODS

The study was carried out in 2022-2023 by adopting an *ex-post facto* research design to explore the socio-personal and ICT engagement factors among postgraduate students at Acharya N.G. Ranga Agricultural University (ANGRAU). The university was purposefully selected due to its diverse postgraduate programs offered across various disciplines and colleges, making it an ideal setting for examining a wide range of socio-personal and ICT engagement factors. The study was conducted across several colleges within ANGRAU, specifically targeting the Colleges of Agriculture, Agricultural Engineering and Technology, and Community Sciences, all situated in Andhra Pradesh. The institutions included in the research were: the Agricultural Colleges in Bapatla, Tirupati, Mahanandi, and Naira; the College of Community Science in Guntur; and Dr. NTR College of Agricultural Engineering in Bapatla. These colleges were selected purposefully as they offer postgraduate programs, ensuring the study's relevance to the utilization of ICT tools among postgraduate education. A total of 120 postgraduate students were selected using a proportionate random sampling procedure. This method was employed to ensure that the sample was representative of the student populations across the different colleges and departments. Proportional representation from each institution facilitated a thorough analysis of both socio-personal characteristics and ICT engagement factors. The study examined a comprehensive set of variables categorized into two primary groups:

1. **Socio-Personal Characteristics:** Gender, medium of school education, parental education, family annual income, and residential background.
2. **ICT Engagement Factors:** Knowledge about ICT tools, accessibility of ICT tools, awareness of ICT services, purpose of internet use, expenditure on ICTs, experience with ICTs, time spent and purpose of using ICTs, courses studied through ICTs, and methods of learning internet skills.

Data were collected using a structured interview schedule designed to capture detailed information on these variables. The interview schedule was pre-tested to verify its reliability and validity, ensuring that it effectively gathered accurate and relevant data. Statistical analysis was performed on the collected data using descriptive techniques, including mean, standard deviation, frequency, and percentage. These techniques were employed to summarize the data and interpret patterns (Akhila *et al*, 2024 and Nasre *et al*, 2024) in socio-personal and ICT engagement factors, aiming to provide meaningful insights into how these factors influence ICT utilization and academic outcomes among postgraduate students.

RESUTS AND DISCUSSION

a) Socio-Personal Factors

The data (Table 1) indicated that over half of the respondents (55.83%) were female postgraduate students, compared to 44.17% male students. This gender distribution may reflect initiatives promoting female education or increased female interest in higher studies, as these findings were in agreement with Tamta and Ansari (2015). Regarding the medium of schooling, nearly two-thirds (64.17%) were educated in English, followed by Telugu (24.17%), with smaller proportions in Hindi (5.00%) and other languages (6.67%). This underscores the significance of English in higher education, suggesting a need for additional support for students from regional language backgrounds, aligning with Sharma and Hasan

Table 1. Distribution of postgraduate students according to their socio-personal factors (n= 120)

Sr. No	Variable	Category	Students	
			F	%
Socio - Personal Factors				
1	Gender	Male	53	44.17
		Female	67	55.83
2	Medium of school education	Telugu	29	24.17
		Hindi	6	5.00
		English	77	64.17
		Other	8	6.67
3	Education of parents	Illiterate	14	11.67
		Up to middle	24	20.00
		Higher secondary	30	25.00
		Graduation / Diploma	27	22.50
		Post graduation / Ph.D.	25	20.83
4	Family annual income	Low (< Rs. 2,00,000)	38	31.67
		Medium (Rs. 2,00,000 to Rs. 4,00,000)	53	44.1 7
		High (> Rs. 4,00,000)	29	24.17
5	Residential background	Rural	50	41.67
		Semi -urban	46	38.33
		Urban	24	20.00

* F=Frequency, %= Percentage

(2012). Parental education varied: 25.00% had higher secondary education, 22.50% had degrees or diplomas, 20.83% had postgraduate degrees or Ph.D., and 11.67% were illiterate. Higher parental education is linked with better academic support, consistent with Bello *et al*, (2017). Most students (44.17%) came from medium-income families, reflecting the economic constraints of rural areas. The residential background was balanced, with 41.67% from rural, 38.33% from semi-urban, and 20.00% from urban areas, highlighting challenges in resources and connectivity, as noted by Kumar (2009).

b) ICT Engagement Factors

Table 2 revealed that a significant majority of students (80.83%) were aware of ICT services, indicating a strong familiarity with digital tools, which is crucial for both academic and personal growth. However, there was still an opportunity to enhance awareness of advanced ICT tools such as statistical software and AI applications. Over half of the students (54.17%) possessed medium-level knowledge of ICT tools, 23.33% had high-level knowledge, and 22.50% had low-level knowledge. This suggested that while students were familiar with tools like Google Scholar and ResearchGate, there is room for improvement in utilizing advanced tools such as ChatGPT and statistical software, as noted in the study by Priyanka (2017). The data further revealed that 74.17% of students had medium accessibility to ICT tools, 15.83% had high access, and 10.00% had limited access, likely reflecting the availability of tools through university resources and free services, consistent with Mailavelan and Baskaran (2018). All students (100%) used the internet for entertainment, social networking, and banking, with significant portions also used it for knowledge enhancement (71.67%), research (65.83%), shopping (67.50%), and education (60.00%). However, only 46.67% used it for emailing, indicating a predominance of internet use for non-academic purposes. This pattern suggested that students might not be fully leveraging the internet's potential for educational

Table 2. Distribution of postgraduate students according to their ICT engagement factors (n= 120)

Sr. No	Variable	Category	Students	
			F	%
ICT Engagement Factors				
1	Awareness about ICTs services	Aware	97	80.83
		Not aware	23	19.17
2	Knowledge about ICTs tools	Low (< 3.83)	27	22.50
		Medium (3.83 to 10.05)	65	54.17
		High (>10.05)	28	23.33
3	Accessibility of ICTs tools	Less accessible (<30.98)	12	10.00
		Medium accessible (30.98 -39.06)	89	74.17
		Highly accessible (>39.06)	19	15.83
4	Purpose of internet use	For education	72	60.00
		For academics	72	60.00
		For enhancing knowledge	86	71.67
		For research work	79	65.83
		For entertainment	120	100.00
		For social networking	120	100.00
		For banking	120	100.00
		For shopping	81	67.50
		For sending emails	56	46.67
5	Expenditure incurred on use of ICTs	Low <314	24	20.00
		Medium 315-840	85	70.83
		High >840	11	9.17
6	Experience of ICTs use	6 months to 1 year	07	5.83
		1 to 2 years	18	15.00
		2 to 4 years	45	37.50
		More than 4 years	50	41.67
7	Time spent and purpose of using ICTs	Online live lectures (6 hrs per week)	111	92.50
		Live webinars (3 hrs per week)	78	65.00
		Classroom quizzes (2.5 hrs per week)	26	21.67
		Online exam preparation (5 hrs per week)	89	74.17
		Presentations (4.5 hrs per week)	99	82.50
8	Courses studied through ICTs	Studied any course	37	30.83
		Not studied any course	83	69.17
9	Method of learning internet skills	Trial and error	55	45.83
		Training from college officials	47	39.17
		Self-instruction	49	40.83
		Guidance from colleagues and friends	67	55.83
		Experts	68	43.33

* F=Frequency, %= Percentage

functions, aligning with findings from Chandrakar (2014).

Table 2 further showed that over two-thirds (70.83%) of students spent between Rs. 315 and Rs. 840 per month on ICT usage, indicated moderate expenditure on technology. Only 9.17% reported high expenditure (above Rs. 840), while 20.00% had low expenditure (below Rs. 314). This spending pattern may reflect costs related to smartphones, electronic devices, and subscription plans, with some students also investing in premium ICT tools like advanced paraphrasing tools and ChatGPT. Experience with ICTs varied: 41.67% had over four years, 37.50% had between two to four years, 15.00% had between one to two years, and 5.83% had six months to one year. This distribution aligned with their academic focus and interest in ICTs. Most students (92.50%) used ICTs for online live lectures, followed by 82.50% for presentations, 74.17% for exam preparation, 65.00% for webinars, and 21.67% for quizzes. Time spent weekly ranged from 6 hours for lectures to 2.30 hours for quizzes. Despite awareness, over two-thirds (69.17%) had not studied any courses through ICT, suggested underutilization of these tools. Common methods for acquiring internet skills included guidance from friends (55.83%) and self-instruction (40.83%), reflecting a preference for peer support and practical experience, results aligned with Beniwal (2016).

CONCLUSION

This study provided insights into socio-personal and ICT engagement factors among postgraduate students at Acharya N.G. Ranga Agricultural University (ANGRAU). It found a higher representation of females in postgraduate programs and that most students received education in English. Parental education levels varied, and most students came from medium-income families, potentially impacting their access to ICT resources. There was a balanced representation of rural and semi-urban students, aligned with the university's agricultural focus. While students demonstrated high awareness of ICT tools, their knowledge and access were moderate, highlighted the need for advanced training. Internet use was frequent for entertainment and social networking but limited for academic purposes. The study revealed a gap in integrating ICT into formal education, with many participating in online lectures but few enrolled in ICT-based courses. To enhance academic outcomes, it is crucial to improve ICT training, promote its educational integration, and address access disparities. Future research should evaluate ICT interventions and develop strategies to optimize technology use in academics.

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