



MOTIVATIONAL BARRIERS TO USE INFORMATION AND COMMUNICATION TECHNOLOGY: TRIBHUVAN UNIVERSITY TEACHER'S PERCEPTION

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ABSTRACT

The integration of Information and Communication Technology (ICT) into higher education has revolutionized teaching and learning, offering opportunities for greater engagement, innovative pedagogy, and efficient management of academic tasks. However, despite the growing digital infrastructure and policy emphasis on ICT, university teachers often encounter several barriers that hinder its effective utilization. Among these barriers, motivational issues stand out as significant factors impacting the willingness and readiness of educators to incorporate ICT into their professional routines. Understanding university teachers' perceptions of these motivational barriers is crucial to developing strategies that can foster a more supportive environment for ICT adoption. This study aims to examine the motivational barriers hindering ICT use among economics teachers at Tribhuvan University. Employing a quantitative research method with a descriptive research design, data were collected through a cross-sectional survey of 404 teachers using structured Likert scale questionnaires. Data were analyzed using both descriptive and inferential statistics. Mean, standard deviation, t-test and ANOVA were examined. Ethical considerations were taken into account throughout the research process. The study found significant barriers related to the absence of a teaching model, insufficient localized content, rigid schedules, lack of administrative support, and n ICT-friendly curriculum. Significant differences in barriers were observed based on campus category and level of education of teachers. Teachers in a community faced

more substantial motivational barriers. Similarly, teachers with PhD and Post-Doc qualifications reported the higher motivational barriers compared to those with MPhil and master's degrees. Addressing these barriers through increased support, curriculum development, localized content, professional development, and clear ICT policies is essential for effective ICT integration in higher education.

Keywords: Higher Education, ICT, quantitative methods, teacher's perception, Tribhuvan University

INTRODUCTION

Information and Communication Technology (ICT) has transformed the educational setting, providing opportunities for enhancing teaching and learning (Alisoy, 2023; Dhital, 2018; Kilag *et al.*, 2023). Despite the evident benefits and global advocacy for ICT integration in education, the actual implementation, particularly in developing countries, often faces numerous barriers (Bala *et al.*, 2023; Enrique Hinostroza, 2018; Ismail *et al.*, 2020). While previous studies have largely focused on structural and technical challenges, such as lack of infrastructure or limited access to resources, motivational factors are equally critical yet often overlooked. Motivational factors play a critical role in determining the extent to which teachers embrace and utilize ICT tools in their teaching practices.

The potential of ICT to transform education is well-documented in educational literature (Dirckinck-Holmfeld *et al.*, 2023; Saradha, 2023). ICT facilitates access to a vast array of resources, supports interactive learning environments, and promotes collaborative learning. It also enables personalized learning experiences and can cater to diverse learning needs and styles (Daniela, 2019; Fontanos *et al.*, 2020; Pombo *et al.*, 2016). The use of ICT in education has been associated with improved student engagement, motivation, and academic performance (Alisoy, 2023).

However, the integration of ICT in education is not without challenges. Researchers have identified several barriers, including infrastructural deficiencies, lack of training and support, and resistance to change among teachers (Bice, 2021; Liesa-Orús *et al.*, 2020; Singhavi & Basargekar, 2019; Zhang, 2021). Among these, motivational barriers are particularly significant as they directly affect teachers' willingness to adopt and effectively use ICT in their teaching practices (Tavakoli & Hallajian, 2021).

Motivational barriers encompass a range of issues related to personal, institutional, infrastructural, and absence of perceived usefulness.

Teachers' attitudes towards ICT, their self-efficacy beliefs, and their motivation significantly influence their ICT usage (Chai *et al.*, 2019; Clipa *et al.*, 2023; Mlambo *et al.*, 2020). Understanding these motivational factors is crucial for developing strategies to encourage teachers to integrate ICT into their teaching practices in the context of Tribhuvan University, the adoption of ICT has been gradual but slow and uneven. Various studies have highlighted the infrastructural and technical challenges faced by teachers (Dhital, 2018; Joshi, 2022; Lim *et al.*, 2020; Kesh Rana & Rana, 2020). However, there is a small amount of research focusing specifically on the motivational aspects influencing TU teachers' use of ICT. This study aims to fill this gap by examining Tribhuvan University teachers' perceptions of the motivational barriers to using ICT, thereby contributing to the broader discourse on ICT integration in higher education. So the objective of this study is to analyze the motivational barriers that hinder the use of ICT among teachers at Tribhuvan University. The integration of ICT in education is a multifaceted issue that requires a deep understanding of the motivational barriers faced by teachers. This study on Tribhuvan University's teacher's perceptions contributes to the growing body of literature on ICT integration in higher education, offering practical recommendations for enhancing ICT integration in similar context.

Theoretical Base of the Study

This study is based on the, three theories, i.e., technological pedagogical and content knowledge (TPACK), resource and appropriation theory, and technology acceptance model. Shulman originated the fundamental concept of the TPACK framework in 1986, designated as a pedagogical content knowledge (PCK)(Maor, 2013). By incorporating technological expertise into Shulman's framework of pedagogical and content knowledge, Mishra and Koehler developed a practical model that integrates pedagogy, content, and technology (Yanuarto, Maat, & Husnin, 2021). The TPACK model is an appropriate theoretical lens for studying ICT-related issues. Resource and appropriation originated by Van Dijk addressed the receiving and implementation of new technologies. Technology Acceptance Model (TAM) is considered a standard model to use in the technology accepting process. This theory can be used to determine and predict the use of technology by users (Rha, 2002). This theory focuses on how peoples accept or reject innovative technology. Therefore, TAM is suited for the quantitative study of ICT adoption.

Methods and Materials of the Study

This study employed a quantitative research method using a descriptive research design. A cross-sectional survey was adopted to collect data from a sample of economics teachers at Tribhuvan University. The target population for this study comprised economics teachers from Tribhuvan University. A total of 404 respondents were selected using a stratified random sampling method. The sampling was done from two strata: Constituent campuses and community campuses. This stratification ensured a representative sample from different types of educational institutions within the university. Data were collected using structured Likert scale questionnaires, which were distributed through Google Forms. The questionnaire was designed to capture various motivational barriers to the use of ICT among teachers. Data collection was conducted from Jestha to Ashoj 2079 BS. The validity of the research tools was established through expert consultations and the item-total correlation method. The item-total correlation values for each item ranged from 0.42-0.90, including good validity (Pinar *et al.*, 2009). To ensure the reliability of the data, Cronbach's' alpha was calculated, yielding a value of 0.95, which indicates high internal consistency (De Barros Ahrens *et al.*, 2020). Data were analyzed using both descriptive and inferential statistics (Amrhein *et al.*, 2019; Stapor & Stapor, 2020). Mean, standard deviation, t-test and ANOVA were examined. Ethical considerations were taken into account throughout the research process. Informed consent was obtained from all participants, and their anonymity and confidentiality were assured. The study was conducted in response to the ethical guidelines set by Tribhuvan University.

RESULT AND DISCUSSION

Status of Motivational Barriers Perceived by Teachers

This study investigates the motivational barriers that hinder economics teachers at Tribhuvan University from effectively integrating Information and Communication Technology (ICT) in their teaching practices. The analysis of the data provides valuable insights into the motivational barriers that economics teachers at Tribhuvan University face when integrating ICT into their teaching practices. Table 1 presents the mean, standard deviation, t-value, and p-value to show the status of these barriers.

Table 1

Status of Motivational Barriers

Reports	Mean	SD	t-value	p-value
Absence of a teaching model for ICT use	2.46	0.90	-12.13	0.00*
Insufficient content in Nepali	2.46	0.93	-11.74	0.00*
Rigid schedules pressure course completion	2.31	0.82	-16.90	0.00*
Lack of administrative support	2.53	0.91	-10.40	0.00*
ICT-friendly curriculum is missing	2.18	0.77	-21.43	0.00*
Unclear benefits of ICT in teaching	3.26	0.98	5.39	0.00*
No distinction between ICT and non-ICT teaching	2.25	0.76	-19.88	0.00*
Students prioritize other needs over ICT	2.56	0.89	-9.95	0.00*
Traditional methods are still effective	3.65	0.84	15.65	0.00*
No clear ICT policy in education system	2.18	0.72	-23.14	0.00*

* $P < 0.05$ (i.e. Significant)

Teachers report a significant lack of clear pedagogical models for ICT integration, with a mean score of 2.46 (SD=0.90) and a significant t-value of -12.13 ($p < 0.05$). This shows that teachers lack clear examples of frameworks on how to effectively integrate ICT into their teaching practices. Previous studies have highlighted the importance of pedagogical models in facilitating ICT adoption Ghassoub (2023) and Ngao *et al.* (2022) underscore the importance of pedagogical models in facilitating ICT integration .

Similarly, insufficient content in the Nepali language is another major barrier, reflected by a mean score of 2.46 (SD=0.93) and a significant t-value of -11.74 ($p < 0.05$). This finding aligns with literature emphasizing the necessity of localized content for effective ICT implementation in education (Wolfenden *et al.*, 2024). Similar to the finding of this study, a study by Stumbrienė *et al.* (2024) revealed that the lack of learning content in digital form in the national language is the major barrier to integrating ICT in the education sector.

Moreover, the mean score of 2.31(SD=0.82) and a significant t-value of -16.90 ($p < 0.05$) reflect the challenge posed by rigid schedules that pressure course completion. Teachers found it difficult to incorporate ICT activities within tight academic timelines, which can discourage its use, as also highlighted by Karunakaran and Dhanawardana (2023) and Ünlüer (2011).

The lack of administrative support, with a mean score of 2.53 (SD=0.91) and a significant t-value of -10.40 ($p < 0.05$), is another critical barrier. Administrative backing is crucial for providing necessary resources and creating a supportive environment for ICT integration (Bariu & Chun, 2022; Burns, 2023; Knyazeva *et al.*, 2023). Similar to the finding of this study, Nikolopoulou *et al.* (2023) found the lack of support to integrate ICT is a main barrier in the educational sector.

A significant barrier is the absence of an ICT-friendly curriculum, indicated by a mean score of 2.18 (SD=0.77) and a t-value of -21.43 ($p < 0.05$). This highlights the need for curricular reforms that incorporate ICT effectively (Phulpoto *et al.*, 2024; Uzodinma *et al.*, 2023).

Similarly, teachers' perception of unclear benefits of ICT in teaching and a mean score of 3.26 (SD=0.98), with a significant positive t-value of 5.39 ($p < 0.05$). This explores that while some teachers recognize the potential advantages of ICT, others remain skeptical, indicating a mixed understanding that needs to be addressed through professional development.

Teachers reported the lack of distinction between ICT and non-ICT teaching methods poses a barrier, indicated by a mean score of 2.25 (SD=0.76) and a significant t-value of -19.88 ($p < 0.05$). This underscores the need for clear guidelines and strategies that differentiate and integrate ICT effectively into teaching practices (Li *et al.*, 2022).

The barriers of students prioritizing other needs over ICT have a mean score of 2.56 (SD=0.89) and a significant t-value of -9.95 ($p < 0.05$). This points to competing demands on students' time and resources that can hinder their engagement with ICT-based learning.

Traditional teaching methods are perceived as still effective, with a mean score of 3.65 (SD=0.84) and a significant t-value of 15.65 ($p < 0.05$). This indicates that teachers prefer established methods over ICT, which they perceive as reliable and effective (Luo & Watts, 2023).

The lack of clear ICT policy in the education system, with a mean score of 2.18 (SD=0.72) and a significant t-value of -23.14 ($p < 0.05$), is a substantial barrier. This finding emphasizes the need for coherent policies to guide and support ICT integration in the education sector (Aziz, 2020; Karna Rana *et al.*, 2020).

Motivational Barriers with Affecting Factors

This study examined significant differences between various factors on motivational barriers to the use of ICT among economics teachers at Tribhuvan University. The results are presented in table 2.

Table 2

Significant Differences between Factors on Motivational Barriers

Factors	Types	Frequency	Mean	SD	p-value
Teaching Level	Bachelor	231.00	2.59	0.45	0.40
	Master	65.00	2.66	0.57	
	Both level and MPhil	108.00	2.55	0.63	
Faculty of Teaching	Humanities	67.00	2.60	0.53	0.40
	Management	170.00	2.64	0.51	
	Education	46.00	2.54	0.37	
	Others	121.00	2.54	0.57	
Gender	Female	55.00	2.65	0.48	0.37
	Male	349.00	2.58	0.53	
Years of computer Use	< 5 Years	102.00	2.55	0.48	0.38
	5-10 Years	116.00	2.56	0.50	
	10- 15 Years	96.00	2.66	0.58	
	>15 Years	90.00	2.61	0.52	
Nature of Job	Permanent	192.00	2.63	0.58	
	Contract	99.00	2.54	0.46	
	Part-time	113.00	2.56	0.46	
Having Additional Income	No	204.00	2.57	0.48	0.47
	Yes	200.00	2.61	0.56	
Training of Technology	No	281.00	2.58	0.50	0.47
	Yes	123.00	2.62	0.57	
Category of Campus	Constituent	200.00	2.54	0.50	0.05*
	Community	204.00	2.64	0.54	
Level of Education	Masters	326.00	2.56	0.47	0.01*
	MPhil	41.00	2.64	0.65	
	PhD and Post Doc	37.00	2.84	0.69	

* $P < 0.05$ (i.e. Significant)

Table 2 revealed significant differences in motivational barriers to the use of ICT among economics teachers based on specific factors i.e.

category of campus and the level of education. These findings provide important insights into the underlying barriers faced by different groups of teachers.

The study found a significant difference in motivational barriers between teachers from constituent and community campuses ($p=0.05$). Teachers from community campuses reported higher mean scores (2.64) compared to those from constituent campuses (2.54). This suggests that teachers in community face more substantial motivational barriers. This could be attributed to differences in resources, administrative support, and ICT infrastructures between these types of campuses (Liesa-Orús *et al.*, 2020; Singhavi & Basargekar, 2019; Zhang, 2021). Previous research has similarly highlighted that insufficient resources and support are critical barriers to effective ICT integration in education settings (Macharia & Pelser, 2014).

Similar to the campus category, a significant difference was observed in the level of education of teachers ($p=0.01$). Teachers with PhD and Post-Doc qualifications reported the highest mean score (2.84), indicating more pronounced motivational barriers compared to those with MPhil (2.64) and master's degree (2.56). This finding reflects the higher expectations and demands placed on more highly educated teachers to integrate advanced ICT tools into their teaching, coupled with potential gaps in support and training. Studies have shown that highly qualified teachers often face greater pressure to innovate and integrate new technologies, which can lead to increased stress and motivational barriers (Espinoza & Pañares, 2023).

Other factors, including teaching level, faculty of teaching, gender, years of computer use, nature of the job, having additional income, and training in technology did not show significant differences in motivational barriers. A Study conducted by Kalinga and Ndibalema (2023) also explored that there were no differences between teachers' gender and other factors in using ICT for teaching purposes. This suggests that the perceived barriers to using ICT are relatively consistent regardless of these factors. These findings align with studies suggesting that motivational barriers to ICT are not the level of teaching, discipline, gender, and years of computer use, nature of the job, having additional income, and technology training rather universal across universities. This consistency suggests that the barriers faced by teachers in integrating ICT are widespread across various disciplines, reinforcing the need for university-wide strategies to address

these issues. However Mercader and Gairín (2020) revealed the significant difference between academic disciplines regarding the barriers to integrating the ICT, studies conducted by Sain *et al.* (2024), Undie *et al.* and Vahdani Asadi *et al.* (2023) also found widespread barriers to integrating ICT in education.

CONCLUSION

This study explored the motivational barriers hindering economics teachers at Tribhuvan University from integrating ICT into their teaching. Key challenges identified included the absence of pedagogical models for ICT use, lack of localized content in Nepali, rigid academic schedules, insufficient administrative support, and an ICT-unfriendly curriculum. Teachers also showed a preference for traditional methods and some skepticism about ICT's benefits, compounded by a lack of clear ICT policies. While most demographic and professional variables did not significantly influence motivational barriers, two factors did: campus type and level of education. Teachers from community campuses and those with higher qualifications (PhD/Post-Doc) reported more substantial motivational barriers, likely due to limited institutional support and higher expectations for ICT use. The study recommends that Tribhuvan University develop ICT-focused pedagogical models, provide localized content, reform curricula, and strengthen support structures, especially in community campuses. Tailored training and policy reforms are vital to reducing these barriers and enhancing ICT integration across the university.

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