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Understanding Female Motivation in Choosing Computer Science and Information Technology: A Narrative Study from Nepal

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Abstract

In today's technologically advanced world, the underrepresentation of women in Computer Science and Information Technology programs remains a primary worldwide concern, including in Nepal. This study sought to explore the motivations of female students pursuing undergraduate degrees in Computer Science and Information Technology by analyzing their stories guiding their decisions. The Narrative inquiry technique within the qualitative research method was employed to examine how their motivation developed from childhood to the time they enrolled. Six female students who chose Computer Science and Information Technology (CSIT) at their bachelor's degree level were selected from two different colleges in two distinct areas, and in-depth interviews were conducted. Maslow's Hierarchy of Needs Theory directed the research. Findings revealed that extrinsic motivators such as job prestige and financial incentives had a stronger influence than intrinsic motivators, with participants frequently citing career stability and social recognition as key factors. Family encouragement, early exposure to technology, and the presence of inspiring role models also played a significant role in shaping their interest. While the study offers rich, contextual insights, it is based on a small sample size, and its findings are not meant to be generalized. Rather, the study aims to illuminate individual experiences and inform gender-inclusive strategies in education and policymaking. Promoting

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female visibility in the ICT sector is critical to inspiring more women to enter and thrive in the field.

Keywords: Female Students, Computer Science and Information Technology (CSIT), Motivational Factors, Career Choices, Higher Education

Introduction

In this 21st century, information technology (IT) has become a fundamental component of many global innovations. It has transformed different sectors, encouraged creativity, and shaped new economies. Likewise, it has automated business operations and introduced more innovative approaches in healthcare, education, and communication (World Bank, 2023). Information technology continues to be a pivotal influence in addressing contemporary global concerns. Moreover, technological advancements such as artificial intelligence, cloud computing, and big data offer profound insights into how individuals, corporations, and governments will transform their operations (Jonnala, 2024). Indeed, ICT is becoming the fastest-growing sector, creating new employment opportunities and redefining the job space. A recent report by the World Economic Forum (2020) indicates that some of the world's most sought-after occupations include data analysts, technicians in artificial intelligence, and software developers, with tens of millions of similar possible jobs to open shortly. This rapid progress shows the importance of ICT in enabling countries to become more digital and focused on innovations. The Government of Nepal began realizing ICT as a tool for economic growth and social change. Moreover, it has recently put some efforts into developing IT sectors through various policies and initiatives aimed at digital transformation, IT infrastructure development, and promoting technology-driven governance. Building IT parks and establishing tech startups underscores Nepal's role in the global digital economy. However, there is a nominal participation of women in computer science and IT-related courses, even though there is a demand for skilled IT professionals. According to the Asia Pacific Network Information Centre (APNIC, 2018), only 5% to 10% of female workers are in ICT Nepal's workforce. This low participation of females in IT jobs does not bring diversity to the sector and promotes a shortage of IT workers. But, the gender gap in this sector is a worldwide concern, not just exclusive to Nepal. UN Women (2023) reported that women comprise less than 25% of the STEM and ICT workforce globally. In 2023, women occupied barely 19% of ICT specialist positions throughout the European Union. In the same line, 19% of UK university graduates in computer science in 2017 were women (Higher Education Statistics Agency, 2018). Likewise, Just 10% of British software developers are female (Office for National Statistics, 2019). The lack of women in IT roles limits their capacity to participate in technical advancement and make decisions about research agendas, thus limiting diversity and inclusivity (McKinsey & Company, 2019).

Research has shown that motivational factors leading to women's enrollment in computer and IT coursework are numerous. Smith et al. (2018) found that many female computer science students envisioned a future with a strong career. So, career counselors and

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the IT industry should take more initiative in promoting IT careers. Another study on Finnish women who wished for their careers in the software industry found that a passion for technology was a key motivation (Hyrynsalmi & Hyrynsalmi, 2019). Though many research works have been performed in different parts of the world around issues like understanding the motivational factors that could increase females' participation in computer and IT-related studies that will be reflected automatically in the IT sector, the problem persists. This problem becomes aggravated in countries such as Nepal, which has an entrenched patriarchal society, thus posing more societal barriers against women joining computer and IT-related courses in their higher education studies. In some cases, researchers have shown that if an inclusive environment is built, if opportunities to handle computers at an early age and a personalized mentoring approach are created, it will draw female students and retain them within IT programs (FDM Group, 2021; Hyrynsalmi et al., 2024). The persistent gender gap highlights the need for more research on why women choose Computer Science and IT courses, even if much study has been done to determine the elements discouraging female students from majoring in these fields and their growing interest in IT careers. Promoting more gender diversity and addressing the barriers limiting female participation in Nepal's IT sector depends on an awareness of their motivating challenges. This research investigates the causes behind female students' selection of Computer Science and IT (CSIT) courses for their higher education. "How do female students express their narratives of motivation in selecting a CSIT course?" is the primary question the study focuses on here. This study fills a significant knowledge vacuum about the elements influencing female enrollment in the CSIT program. The study's findings can inform higher-education institutions, members of the family, laws and regulations, and campaigns centered on increasing female enrollment in the fields of computer science and information technology (CSIT).

Literature Review

Women's involvement in Information and Communication Technology (ICT) is incredibly small across the globe. Research studies put it that, globally, less than 25% of ICT professionals are women, with much worse numbers in leadership (UN Women, 2023). Thus, in the year 2023, women only made up 19% of these ICT-occupied specialist roles in Europe, reflecting the state of gender inequity (Statista, 2023). The same tendency has been illustrated in developing countries where most women are not able to join the IT field because of socio-cultural norms, economic challenges, and lack of mentorship opportunities (Acilar & Saebø, 2021). For instance, in Nepal, 81% of the entire female population above 15 years old is economically active, while only 0.5% of those are involved in the ICT sector ([CBS], 2018). Therefore, despite the growing need for IT professionals across the globe, women are underrepresented and thus demand critical interventions and targeted policies.

A multitude of studies have highlighted the significant obstacles faced by female students in entering IT education and careers. According to McKinsey & Company (2019), women are deterred by gender stereotypes and workplace discrimination from pursuing a

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career in technology-related sectors. Despite gender-neutral organizational norms in India's software companies, Mishra et al. (2022) revealed that cultural norms remained to discourage women from excelling in their career fields. According to the World Economic Forum (2020), women in Nepal, as women in other South Asian countries, face more challenges because of gender stereotypes, a deficit of computer skills, and an inadequate number of female role models working in technology. In some cases, parents discourage their daughters from studying computers as they do not believe in their capability. Research conducted by Alam and Shakir (2019) shows that mentorship and networking are important sources in reducing dropout rates among women in disciplines related to IT, which clearly indicates that established support programs are much needed. Lopes (2022) suggests that the interest in computing among girls can be raised by linking them with women in IT careers, proving they can also do so. Women's professional choices also rely on parental support. Family encouragement assists females in choosing to pursue STEM education, as reported by Almukhambetova and Kuzhabekova (2020), especially in societies where gender roles discourage women from entering technical areas. Agarwal (2008) claims that career decisions depend heavily on professional image; IT is regarded as a high-status career offering long-term financial stability. Moreover, professional choices also rely on the availability of mentoring possibilities and role models. González-Pérez et al. (2020) highlight how female IT role models contribute to student confidence and ambitions. Many studies, in the meantime, reveal that support networks in IT education are still inadequate, which makes it difficult for female students to choose their career direction (Spieler et al.,2019). Mentoring project works and organizing social meetings for women in information technology help in higher enrollment rates in IT-related courses (Pacheco et al., 2025). These results point out that increasing female participation in IT education could be primarily dependent on greater mentoring opportunities.

In Nepal, the ICT sector evolves with opportunities and challenges for women. Programs on e-governance and digital literacy are the initiatives to bring Nepal to the global level in terms of technological advancements and enlarge the IT workforce opportunities related to this. However, despite all these developments, women have been found in less number in IT education and employment which denotes there may be some serious barriers to their participation. Nepal Telecommunications Authority (2022) made recommendations for developing gender-based policies for women to enter the technology sector, bridging the existing digital divide. This indicates a further need for mentoring programs, scholarships, and support by the institution to improve the number of women in IT-related fields. Although previous research works examined gender disparities in STEM fields, limited studies have focused on the motivational factors that impact female students' choices to enroll in Computer Science and IT programs in higher education. Koirala and Acharya (2005) utilized a comprehensive method to identify the supportive factors and obstructive factors for girls' participation in science and technology education at the school level, while qualitative research examining the lived experiences of undergraduate female students remains limited. Moreover, few studies utilize Maslow's motivational theory to analyze factors affecting women's choices for careers in Computer Science and IT. This study looks to address this gap through the

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application of Narrative Inquiry to examine the private narratives of female students in Nepal, offering insights into both intrinsic and external motivational factors. The findings of this research will inform policy recommendations, educational strategies, and gender-inclusive initiatives to enhance female participation in IT education and careers.

Applying Maslow's Hierarchy of Needs to Female Students' Career Decision-making

The framework of Maslow's Hierarchy of Needs (1943) framed this study since it investigates how higher-order wants influence career decisions. According to Maslow, people are said to be motivated to work through a hierarchy of needs that could be visualized in a pyramid: physiological, safety, love and belongingness, esteem, and self-actualization needs. This study does not adhere to the traditional tenets of this theory, where it is generally held that only when lower-order needs have been satisfied can the pressing issues of higher-order needs engage an individual. Generally, within this perspective, safety, love, belongingness, esteem, and self-actualization are tuned separately to discover what influence each would have on the academic course or career path female students would ultimately choose to traverse. Self-actualization and esteem as needs of higher order are more intrinsic with motivation like feelings of personal growth and achieving fulfillment. The opposite is that lower-order wants like safety, belongingness, and physiological needs require some extrinsic factors linked to extrinsic motivation. Researchers have overlooked the reason for choosing computer science and information technology as a subject of higher education for Nepali female students. Though research considering similar issues has been done worldwide, it is usually not guided by Maslow's Hierarchy of Needs theory and the adoption of only qualitative methodologies. So, using Maslow's theory to fill the gap and bring the narrative into inquiry, the present study intends to find motivations behind pursuing bachelor's degrees in computer science and information technology from Nepali females.

Research Method

This study employs Narrative Inquiry, a qualitative research methodology exploring individuals' lived experiences via personal stories (Clandinin & Connelly, 2004). Understanding female students' motivations to pursue Computer Science and Information Technology (CSIT) education makes narrative inquiry the best-suited mode of approach. In contrast to quantitative studies that call attention to available numerical trends, this qualitative method with a narrative analysis allows unique perspectives to emerge, which internally and externally motivates a career choice (Riessman, 2008). Narrative Inquiry is more appropriate for understanding gender issues in education and technology; it gives better insight into the socio-cultural, economic, and personal experiences that inform choices (Mertova & Webster, 2019). The study attempts to focus on the first-hand experiences that prompt females' participation in CSIT education. Personal narratives allow researchers to consider how motivations might have changed through a lifetime, influenced by factors such as family support, financial security, societal perceptions, and real-life role models in students' decision-making processes (McAdams, 2013).

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Six female undergraduate students enrolled in CSIT programs were selected from two colleges: one private institution in Sanepa, Lalitpur, and one public institution in Bhaktapur. Both institutions have over a decade of experience in IT education. Purposive sampling was used to recruit participants who could provide rich, relevant, and diverse insights into their educational journeys and motivations (Creswell & Poth, 2018). The participants were selected based on specific inclusion criteria to ensure the relevance and richness of the data. The selection criteria included being a current female student enrolled in a CSIT bachelor's program, demonstrating a willingness to share personal educational and motivational experiences, and representing diverse academic years and socio-cultural backgrounds. This approach ensured a broader range of perspectives and allowed the study to capture variations in motivation across different stages of academic progression and personal contexts. Data saturation was reached after a few rounds of interviews as there was nothing new that could contribute to theme emergence. The pseudonyms Gita, Rita, Seema, Reema, Junu, and Saru are used in the themes and discussion section to protect the identity of the participants in the investigation. The data were collected through semi-structured, face-to-face interviews and online follow-up discussions when in-person meetings were difficult due to the COVID-19 pandemic. Each interview took about 40–50 minutes and was recorded on the mobile phone for later analysis. Open-ended questions allowed the interviewees to elucidate their experiences and positions in a free manner, reducing the chances of any research bias. The total engagement with all the participants spanned some 34–36 hours.

Thematic analysis was employed to examine the data we gathered. This method entails identifying, analyzing, and reporting patterns (themes) present in the data. This research offers valuable insights into the motivations of female students pursuing CSIT.

Ethical Considerations and Quality Standards

This research followed the ethical guidelines to care for the participants' safety, privacy, and well-being. At first, we received authorization from the institutions. Then, all the participants were provided with a consent form that included details about the purpose of the study, the voluntary nature of the participation, and how the data obtained would be used. The identities of participants were kept confidential, and pseudonyms were used instead of their actual names in all reports and publications. Participants were informed that they could leave the study without consequences. All acquired data were securely stored and accessible only to the researcher. After the data were transcribed, audio recordings from the mobile were deleted. To ensure the authenticity and reliability of the research, the participants were provided a brief overview of the interview findings. Also, descriptions of the research context and participants were mentioned to the readers so that they could examine the applicability of the findings to other contexts. Moreover, a comprehensive and clear description of the research methodology is provided, allowing others to reproduce the work. The results were cross-validated with other data sources, including relevant literature, to ensure reliability.

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Data Analysis and Interpretation

The narratives were analyzed through thematic analysis that followed Braun and Clarke's six phases (2006). The transcripts were read multiple times in the first phase for familiarization. Then, the initial codes were formed based on recurrent words, phrases, and ideas evidenced by participants. The codes were then grouped into wider themes, mirroring the following motivational factors: family influence, financial security, social prestige, and role models. The themes were derived and validated by constantly comparing them against the raw data to ensure the themes encapsulated the participants' experiences. Lastly, member checking involved selected participants reviewing the themes to confirm their relevance and accuracy. The major themes are presented along with the discussions.

Family Support and Its Role in Motivating Female Students to Pursue IT Education

Support from their family greatly affected the motivation of the participants to choose the CSIT course. For instance, though Junu's father had limited knowledge of technology, he was very supportive of her ambition to pursue a career in information technology. He even went to the extent of buying her a computer on which she could practice. Moreover, her father encouraged her every time, and it boosted her confidence, making her feel capable in her selected field. This matches the finding of Nazario et al. (2025), whereby family and community involvement play a significant role in encouraging girls to enroll and continue in computer science education. This study suggests that family encouragement plays a more critical role in shaping career choices than peer pressure. In the case of another participant, Saru, her parents would take her to several IT exhibitions and events from a young age, and the environment they created helped her. Appreciating her parents' support and guidance, she said, *"I consider myself very fortunate to have parents who played a huge role in my academic journey."* This resonates with the idea of Amalina (2025), asserting that the background and environment within which a student grows up significantly determine their career paths. Moreover, Saru's story proves how early experiences with IT opportunities and parental support positively influence students to look into pursuing careers.

Despite initially having a lack of interest in IT, Rita's father also directly influenced her career decision. *"He kept bringing IT-related articles and magazines from the market,"* Rita mentioned, emphasizing how parental support was not only verbal but also put into action. Likewise, another participant, Seema, was persuaded to take IT because of her brother's experience in the same area, but initially, she was pressured to study medicine by her parents. The findings support the research that has found family support to have a positive impact on girls in terms of their decisions to enter STEM fields (Almukhambetova & Kuzhabekova, 2020). Family support, both financial and emotional, encourages students to take risks and thus maintain motivation in the fields they select. *"He inspired me to believe that I can do it,"* says Seema, commenting on the importance of the role of her brother in uplifting her inner strength. This aligns with the findings of Aguboshim and Otuu (2023), who pointed out how sibling affects academic performance and highlighted the fact that older siblings usually act as role models, influencing the educational directions of their younger siblings.

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In some cases, as the participants linked, familial pressure first directed them toward another field. However, they initially felt more confident in following a career they loved once their family members supported them in enrolling in the IT academic course. But Gita and Reema's families encouraged them to choose the CSIT course even though initially they were exploring different careers. Reema says, *"My parents assured me that CSIT would bring a more stable income."* This demonstrates how family support allows students to gain confidence, drive, and self-actualization, thereby allowing them to seek a job that meets their interests. The findings of this study align with Maslow's Hierarchy of Needs (1943), which explains how individuals progress through different levels of motivation. Family support plays a key role in fulfilling safety, belonging, esteem, and self-actualization needs, which are essential for female students pursuing IT. Participants felt a strong sense of security and stability due to parental encouragement, reducing concerns about career risks. Their financial support ensured access to education and learning resources, fulfilling their basic and security needs. Additionally, parental encouragement provided a sense of belonging, helping them navigate societal stereotypes. As Maslow states, once belonging needs are met, individuals seek esteem and self-actualization. In this study, participants expressed increased self-confidence and motivation, driven by their families' belief in their abilities. With this foundation, they felt empowered to explore opportunities and establish themselves in IT careers. These findings reinforce Maslow's theory by showing how family support enables young women to progress toward their full potential despite external challenges.

The Appeal of Lucrative Career Opportunities in IT for Female Students

Most participants talked about their desire to earn a steady income, their need for earning, and market potential for earning. Some participants felt they could help their parents, fund their siblings' education, and overcome poverty by attaining financial stability. Most participants believed that financial stability may result from a career in information technology (IT). Some felt that, compared to other sectors, the information technology industry offers favorable ways to make money. Since women are less interested in computer science and information technology, it is necessary to find out what inspires women to seek these fields of study in higher education. One such element that has been well-studied in the literature on motivation is pay, which is a major contributor to employee motivation and work satisfaction (Lawler, 2018). Thus, it indicates that most of the participants often opt for fields of study with the potential for higher salaries in the future. One participant, Junu, shared, *"I heard IT has profound applications in almost all fields. So, the demand for IT professionals is increasing day by day. This would ultimately provide a handsome salary as well."* While Junu did not explicitly prioritize the monetary benefits of selecting the CSIT course, her enthusiasm for embracing challenges in the field was the sector's market potential. June cited her distant cousin's career in IT as an inspiration, stating, *"I am inspired by one of my distant cousins who is doing great success in the IT field. After completing his bachelor's degree, he was hired by a reputable software business in Kathmandu. She was impressed by his lifestyle, and we used to talk about his career, personal development, the atmosphere and culture at work, and his*

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pay. In addition, he has achieved a respectable position and is financially secure. His accomplishments encouraged my enthusiasm to pursue a career in information technology."

Likewise, another participant, Saru, said,*" Many articles cite the excellent job prospects for CSIT graduates, both in Nepal and the global market underscoring the exciting job prospects in the IT sector. There are many possibilities for IT professionals to work in different domains, such as database managers, app and game developers, and data scientists, all of which have a chance of generating high income.* " Another participant, Rita said, *"I read about a lot of rich people who own big IT companies,"* stressing the major influence that income potential had on her decision to pursue IT. She added, *" I don't have to worry about money because this field has a future."* Her statement supports the idea that information technology is an income-producing sector with numerous local and foreign job opportunities. This supports the findings of Green (1995), who revealed that monetary expectations have an immense impact on students' career choices and motivate many of them to pursue computer science. Rita's story indicates how students' educational and employment decisions are influenced by their financial situation and career security. Reema also highlighted the economic advantages of IT. In the same line, she shared, *"Through studies and conversations with experts in the field, I found that IT provides significant pay. This career choice provides monetary benefits and offers the social esteem usually correlated to a medical profession. "* Reema further acknowledged her happiness in transitioning from studying medicine to IT, valuing both financial benefits and professional growth, which she anticipates IT provides. Similarly, Gita said, *"I examined the biographies of highly successful people in the IT industry. In addition, I noted that neighbors working in IT were living lavish lifestyles."* Most participants expressed one of their motivations for selecting the CSIT course was the anticipation that a career in IT would allow them to fulfill their aspiration to take care of their families' expenses and secure their lives. We observed the students from low-income families looked particularly inspired by their hope of attaining financial stability through a career in IT. It reflects their assumption that the effort they applied to receive a CSIT degree would yield lucrative job prospects upon graduation. Chen et al. (2024) confirmed similar findings, suggesting that obtaining stable jobs and an adequate wage were the primary career goals of both male and female students studying STEM fields. This corresponds with the expectations voiced by the participant students, who emphasized their aim to obtain an adequate salary quickly through their chosen field of study. It suggests that most participants selected CSIT because it provides intellectually challenging and lucrative careers that meet safety requirements. They perceived a high salary could increase social standing by offering better living conditions, education, and comfort. Moreover, participants stated that attractive salaries and opportunities for employment they receive after graduating would boost their self-esteem and fulfill their safety needs as stated by Maslow (1943).

Role Models and Their Influence on Career Choices in IT

Role models influence professional choices, especially for women in computer science and IT. Despite efforts to reduce the gender gap, role models in the home and outside of it may impact female students for selecting computer-related courses. Some respondents cited

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relatives who worked in top IT companies as role models. Junu stated, *"My relative brother, who works at a top IT company, is my source of motivation and role model. It greatly reinforced my trust in considering CSIT."* Rita stated, *"Steve Jobs, among the most wealthy individuals in the world who developed Apple goods, inspired me."* Seema was inspired by her female computer teacher, confirming Young et al. (2013) and Cheryan et al. (2013) discoveries that female role models are crucial for female computing excitement. She stated, *"I was extremely impressed with her approach to teaching, ability to encourage others, and happy lifestyle."* Reema admired Mark Zuckerberg for his global status. Reema stated, *"He has not just collected an enormous amount of dollars, yet he has also earned wide respect and admiration for his achievements."* Role models affect career as well as personal values. They boost women's STEM participation in entry-level and higher-level positions (Curtin et al., 2016). Usually, IT role models are male. Consequently, female role models are few. This highlights the necessity for more women in IT leadership roles to inspire generations to come. Torres et al. (2021) discovered that female mentors help retain a high interest in IT. Maslow's Hierarchy of Needs and the influence of role models could be linked in some way, particularly when it comes to fulfilling esteem and belonging needs. Role models serve as an example, showing that success in IT can lead to job security and recognition. Many participants shared that role models acted as a catalyst for boosting their confidence and helped them to believe in their potential. As one of the participants said, *"Seeing someone succeed in this field gives me the confidence that I can achieve it too."* Another participant talked about her role model, a female teacher, though she was challenging the stereotypes, which helped her to ensure that she could overcome challenges in IT. Maslow's Hierarchy of Needs (1943) explores the influence that role models bring to participants in making their decision to choose the same level of profession. For example, by observing the success, recognition, and progress of their role models, the psychological need of the participants is fulfilled with regards to belongingness because it provides a sense of community and a shared identity. At the same time, the observation of stability and respect relating to the careers of the role models can satisfy their safety needs by creating security about the participants' own career choice (Maslow, 1943).

Prestige of IT as a Profession

Many participants perceived IT as prestigious due to its high pay, job security, and social status. Junu got inspired by her relative brother, who worked in IT and had a successful career. She was encouraged to join CSIT more as she saw him employed by a renowned software company in Kathmandu. She said, *"Each individual within his society and circle of friends held him in high esteem and showered praises on him."* Weber(1946) categorized the society's individuals based on class, status, and power. Status depends on the sense of honor belonging to a particular group having unique lifestyles and privileges. However, the status and prestige of the person depend on the country's social and economic status. So, the prestige varies from time to time based on the demand of the professionals at a specific moment. Currently, the IT profession is very popular globally, especially in Nepal. It is growing, and the demand for IT professionals is very high, which makes the profession prestigious and highly payable. She added, *"He seems satisfied and happy with his work. Also, he has good status and*

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a financially stable life." Likewise, another participant, Saru, anticipated the IT profession would bring prestige to her life. We could see commonalities between these two participants in that both were inspired by their male relatives who were considered to have high social prestige. Rita also talked about many rich people worldwide working in IT and doing IT business. Seeing their social status and recognition, she felt that the IT sector could also provide self-satisfaction and respect like other professions can do. Seema, another participant, also selected IT over medicine. She said, *" IT professionals are highly in demand in the country and worldwide."* She seemed aware of the extensive opportunities for IT graduates and their high salaries, which ultimately enhance the prestige of IT professionals. Excitedly, she conveyed that she was happy now choosing her field of study from medicine to IT and believes more now that she can achieve a similar level of prestige in her community by working as an IT professional compared to the medical field.

Another participant, Reema, also stressed the numerous job opportunities in the IT sector. She shared her hope of getting high pay in this profession and living comfortably, along with admiration from the people in her society. She looked up to Mark Zuckerberg as her role model, who achieved global fame through his success in the IT field. Similarly, Gita shared her opinion that the CSIT course would provide her with good job prospects and financial stability after completion of the course. Thus, the participants' narratives indicate that they consider the IT profession prestigious. According to Heslin (2005), the perception of professional prestige in career choices is essential. This is also evident in our participants, who mentioned prestige, recognition, and social status as contributing factors in their decision-making process. According to Maslow's hierarchy of needs (1943), these are categorized as esteem needs; esteem implies self-respect, achievement, recognition by peers, and status. Hence, choosing the IT profession would be closely linked with fulfilling their esteem needs, thus providing professional pride and identity satisfaction.

IT as an Alternative to Other Disciplines

The research findings showed that some participants enrolled in CSIT degrees just because they failed to join their first choice of study. Thus, while looking for alternative options, they finally decided to study CSIT. Participants like Gita, Seema, and Reema chose CSIT due to financial security and job prospects after their initial career plans did not materialize. For example, after failing to secure a seat in medical studies, Reema turned to CSIT, seeing it as a career that would provide financial stability. All of these participants were motivated extrinsically, prioritizing the practical benefits of a career in IT, such as job and economic security, which aligns with Maslow's safety and esteem needs.

One of the participants, Gita, explained that she chose CSIT as a high-paying job opportunity. She said, *"I was curious about various career options that could offer a stable future and faster earning potential."* Despite being young, she was amiable with seniors, and she sought their advice, along with that of her relatives, to explore career opportunities and decided to choose it. This illustrates extrinsic motivation. Like them, we see lots of individuals deviate from their initially planned career choices due to their problems or parental pressure, especially in developing countries like Nepal, where patriarchal values are given higher

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priority. In this study, two of the participants were in this line. The narratives of Seema indicate that her parents had a specific career path in their minds for her, but her interest was different. Despite her interest, she decided to follow her parents' wishes and had worked for it. She had chosen biology as a major in higher secondary education. Later, however, she had to choose an alternative field of study as her medical entrance was postponed for an extended period. She said, *"My parents and I started searching for another subject to guarantee a secure job, high salary, and social status."* However, developing an interest in a field one is not naturally drawn to would be challenging.

Likewise, initially, Reema was pressured by her parents to study medicine, and she followed them. It supports the findings that parental expectations, especially those of fathers for their daughters, impact young adults' career choices (Jacobs et al., 2006). However, her parents' economic condition was unstable, and they ran a canteen in a medical college where they could meet medical students daily. This environment strongly built her parents' mindset that medicine is only the best option for her. Unfortunately, she could not book her seat in the medical entrance exam and had to search for another option to study. She said, *"After I failed the entrance exam of a medical study, I took a gap year and searched for a career that could help me earn faster."* Then, she thought CSIT would be another career path, allowing her to earn quickly and support her family financially. Eventually, she joined CSIT.

From their narratives, it can be assured that all three participants chose the CSIT course as an alternative to other courses due to their distinct circumstances. While selecting alternative courses, they looked for fields that would provide job and financial security related to safety needs. It conveys that their motivations were extrinsic, and they searched for safety, and the esteem needs to be described by Maslow (1943).

IT for Contribution to Society

The stories about the experiences of participants highlighted the different motivations among them for pursuing the field of study at CSIT. Some perceive the field will provide financial stability and job opportunities in the future, while others mention different reasons. Although there are some commonly shared motivational issues among participants, there are also issues unique to each participant's circumstances. However, it can be implied that job opportunities, financial stability, desire for self-respect, meaningful relationships, personal attainments, love, etc., may be some crucial factors that can drive people toward this field. However, we found a unique perspective from one participant about how she got motivated. She believed in using IT skills to address social issues and positively impact society in the future, which we felt was commendable. Thus, embracing the challenges of the IT field, Junu sees opportunities to improve the lives of others and contribute to the greater good. This aligns with the research focused on the most significant advancement in using ICT to enhance government service delivery, increase productivity, enhance the quality of life, reduce poverty, improve information access and distribution, and promote knowledge sharing (Mansell & Wehn, 1998). It indicates that she is interested in IT because she assumes the field is challenging and dynamic. She declared that she researched the scope, importance, job opportunities, trends, and challenges of IT before deciding to study CSIT courses. It reveals

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that she was interested in the field intrinsically and wanted to apply IT skills to various places where necessary, including social sectors. Although Junu was also motivated by the job opportunity and security in the IT career, like other participants, her major plan was to serve society through IT skills. She stated, *"I thought I could contribute to society by solving social problems through IT."* This statement of participant resonates with the research that highlights nations with advanced information society development also tend to exhibit elevated social and economic progress. Apart from physiological and safety needs, Junu emphasized the love and belonging needs (Maslow, 1943) in life, which provides opportunities for social interaction and the ability to build meaningful relationships with colleagues, family, and people around her in society. She seems focused on esteem needs that provide opportunities for recognition, achievement, and status, which could help her feel valued and respected. Additionally, she acknowledged that she did not deviate from her interest in computers, though she could not pursue computer science subjects after grade 8 till grade 12 due to the unavailability of computer teachers in her school. It shows that she has had a strong passion for becoming an IT professional since her school days and is eager to face any challenges in between. Further, the fact that few females are in the IT field has also inspired her to explore the challenge. She believed that she could accept all kinds of challenges in her IT career and contribute to society by using her skills in CSIT to solve social problems rather than earning massive amounts. All this suggests an intrinsic motivation within the participant.

Conclusion

The findings from the interviews indicate that both extrinsic and intrinsic factors drive the motivations of female students to choose CSIT. Key influences include family support, individual interest in technology, expected employment opportunities, income levels, and social status appreciation. While some participants expressed genuine enjoyment of technology - often nurtured through early exposure and encouragement - most female students in Nepal appear more influenced by extrinsic factors such as job prospects, financial stability, and social prestige. Family support was identified as a critical factor shaping perceptions and sustained interest in CSIT, with parents providing guidance, resources, and encouragement to engage in technology-related activities. Role models, primarily male relatives or influential figures worldwide, also significantly inspired students' ambitions. Many participants viewed CSIT as a lucrative and respected career, highlighting the importance of promoting these positive perceptions to motivate more women to enter IT fields. A few participants also expressed a desire to use technology to contribute to society, indicating emerging intrinsic motivations. Some considered CSIT as an alternative after other fields were unavailable, emphasizing the need for flexible pathways into IT careers. This study acknowledges limitations, including its small sample size and focus on only two colleges in the Kathmandu Valley, which may limit the generalizability of the findings. Future research should explore broader populations across diverse regions and examine the long-term effects of interventions aimed at increasing female participation in ICT. Overall, the findings underscore the necessity of creating supportive environments that foster both intrinsic enthusiasm for technology and extrinsic incentives.

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Strong encouragement from families, educators, and institutions, along with visible female role models and gender-equity policies, can motivate more young women to pursue higher education in IT-related fields and ultimately succeed in IT careers. Addressing gender disparities in technology education is vital for promoting social equity and driving Nepal's broader economic and technological development.

Implications of the Study

Study explored the motivational issues of female students from childhood until they enrolled in CSIT programs.The findings from this research found out several significant implications for encouraging female participation in CSIT. The first benefit is the strong influence of family support, which is very much needed when parents promote daughters to pursue technological careers, hence awareness programs. Educational institutions could also use this knowledge to create more welcoming and supportive learning environments that help build communities among these women. Such initiatives as mentoring, outreach, and scholarship programs can target female students' particular needs to decrease gender disparities in the IT field. The study also discusses that visible role models and media representation would motivate young women interested in computing. In addition, the resulting findings should give policymakers parameters for drafting those gender-sensitive policies geared towards supporting equal access and participation. Since this study may not represent all the female students in Nepal, further studies with broader and more diverse participants are encouraged. Finally, this study emphasizes the need to eliminate gender stereotypes and foster a culture where men and women enjoy equal opportunities within the technological sector.

CRediT authorship contribution statement

Ganga Subba: Conceptualization, Data Curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Writing – original draft, Writing – review & editing. **Bal Chandra Luitel**: Supervision, Writing - review & editing.

Data Availability

All data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest

The corresponding author declare that there are no conflict of interest related to this study.

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