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An Investigation of Environmental Factors that Influence Student's Decision to Study Information Technology: A Qualitative Approach

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Abstract

Selecting a career path is crucial for students' future success and job market readiness. This study underscores the need to align education with career goals for an easier transition from school to work. It highlights the importance of environmental factors, academic performance, and personal factors in influencing students' career decisions. While many studies focus on social and academic impacts, few explore the environmental aspects affecting the career choices of Information Technology (IT) students. This research aims to fill this gap by investigating these environmental influences using a qualitative approach, concentrating on comprehensive examinations through questionnaires and focus group discussions. The specific scientific research objectives are to identify and analyse the key environmental factors that influence IT students' career choices; and to understand how these factors interact with personal and academic considerations to shape career decisions. By exploring the effects of technological advancements, media trends, societal expectations, and access to IT resources, the study seeks to uncover the core substance of environmental influences on career orientation within the IT field. It involves a diverse student group from various educational and socio-economic backgrounds. The findings reveal a strong influence of technological advancements and media trends on students' perceptions of IT careers, showing a keen responsiveness to new technologies and media representations. In contrast, societal and cultural factors like family expectations and peer pressure have a lesser effect. The study emphasises the importance of resources like IT infrastructure and early technology exposure in career choices. It suggests that educational institutions and policymakers should consider these elements to develop effective strategies. Addressing societal norms, ensuring equal resource access, and improving information availability are key. Such measures can help prepare a skilled generation, contributing to the technological field and societal advancement.

Keywords: Career path, Environmental factors, IT students, Technological advancements

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1. INTRODUCTION

In today's technologically advanced society, the field of information technology (IT) has become increasingly vital. As our reliance on technology continues to grow, it becomes crucial to understand the factors that influence students' decisions to study IT [1]. This interest is driven by the recognition that IT is essential for driving innovation and technological advancements across various industries. Moreover, the skills and knowledge gained through studying IT are highly valued in the job market [2].

Numerous studies have explored the diverse factors shaping students' decisions in pursuing a career in IT. Influences such as the impact of relatives, teachers, and role models play a significant role, providing guidance and serving as mentors for students considering a career in IT [3], [4], [5], [6], [7]. Intrinsic and extrinsic motivations, including a student's drive and interest in technology and the external rewards associated with an IT career, are also pivotal in their decision-making process [8]. Additionally, previous exposure to technology, specific programming experiences, and even early engagement with activities like game design have strongly correlated with the decision to pursue a career in IT [1] , [9]. Research suggests that students' personality composition, self-esteem, learning styles, and cognitive thinking also influence their decision to study IT [10]. Moreover, the environmental context in which students are immersed plays a significant role. For example, technological sophistication of a person's environment can moderate the relationship between personality traits and IT career choices [5].

The study in [11] explored numerous factors affecting career choice in IT, including interest, occupational advantages, recommendations, family factors, grades, and personal characteristics. These findings underline the complex interplay of factors influencing students' decision to study IT. Given the increasing demand for IT professionals, it is vital to understand these environmental factors. This research paper therefore aims to investigate environmental factors that influence students' decisions to study IT, drawing upon various sources and literature. Factors such as future employment opportunities, qualities of universities, individual identity, personal factors, and available information are examined to understand their influence on students' choices in IT education.

The influence of these factors may vary depending on the students' background and environment. For instance, students in rural areas may be more influenced by extrinsic and interpersonal factors compared to their urban counterparts [12]. Understanding these varying influences is crucial for developing effective strategies to attract and retain students in the IT field. This research aims to provide comprehensive insights into the environmental factors that shape students' decisions to study IT, thereby assisting educational institutions,

policymakers, and career counsellors in their efforts to nurture a skilled IT workforce.

A comprehensive understanding of these factors is crucial for educational institutions and career counsellors, enabling them to provide tailored guidance and support. This understanding ensures that students make well-informed decisions that align with their passions and aptitudes. Furthermore, bridging the gap between students' aspirations and the realities of IT professions is vital for cultivating a workforce that is proficient and fulfilled in their chosen careers. Consequently, the central research question driving this study is: What environmental factors influence student decisions to study IT, and how do these factors interact with and complement social and academic influences in shaping their career decisions.

Environmental factors, encompassing elements beyond students' control such as cultural norms, parental expectations, peer influence, economic circumstances, and educational opportunities, significantly impact students' career choices. This study employs qualitative research methods such as surveys, interviews, and rigorous data analysis. Through an exploration of these complexities, the research endeavors to contribute valuable knowledge to educational institutions, policymakers, and career counsellors. This insight can inform the development of targeted interventions and support systems, ensuring that aspiring IT professionals are equipped with the necessary tools and guidance to thrive in their chosen field. While the study acknowledges certain limitations, including the scope of research and potential biases in data collection methods, it aims to offer nuanced insights into the intricate dynamics of students' decision-making processes when selecting IT as their career path.

The significance of this investigation is underscored by the pivotal role that IT plays in driving innovation, enhancing productivity, and fostering economic growth in the contemporary world. Moreover, understanding the factors that influence students' decisions regarding IT education is indispensable for universities and colleges offering IT programs. It can inform their recruitment and retention strategies, aid in curriculum development, and enhance support services, thereby ensuring a more informed and empowered IT workforce in the future.

The subsequent sections of the paper are organised as follows: Section 2 elucidates the research methodology employed in this study, outlining the approach taken to gather and analyse data. In Section 3, the findings of the research are comprehensively discussed and analysed. Finally, Section 4 presents the conclusions drawn from the study, summarising the key insights and implications derived from the research findings.

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2. METHODS

This study utilizes a qualitative research design to investigate the environmental factors that influence students' decisions to pursue a career in IT. [13] asserts that qualitative approach is particularly suited for exploring complex, subjective experiences and provides a rich understanding of how technological, societal, and media-related factors impact career decisions. The methodology includes focus group interviews, open-ended questionnaires, and thematic analysis to capture the diverse experiences of students from varied socio-economic and educational backgrounds. The research flow as shown in Figure 1.

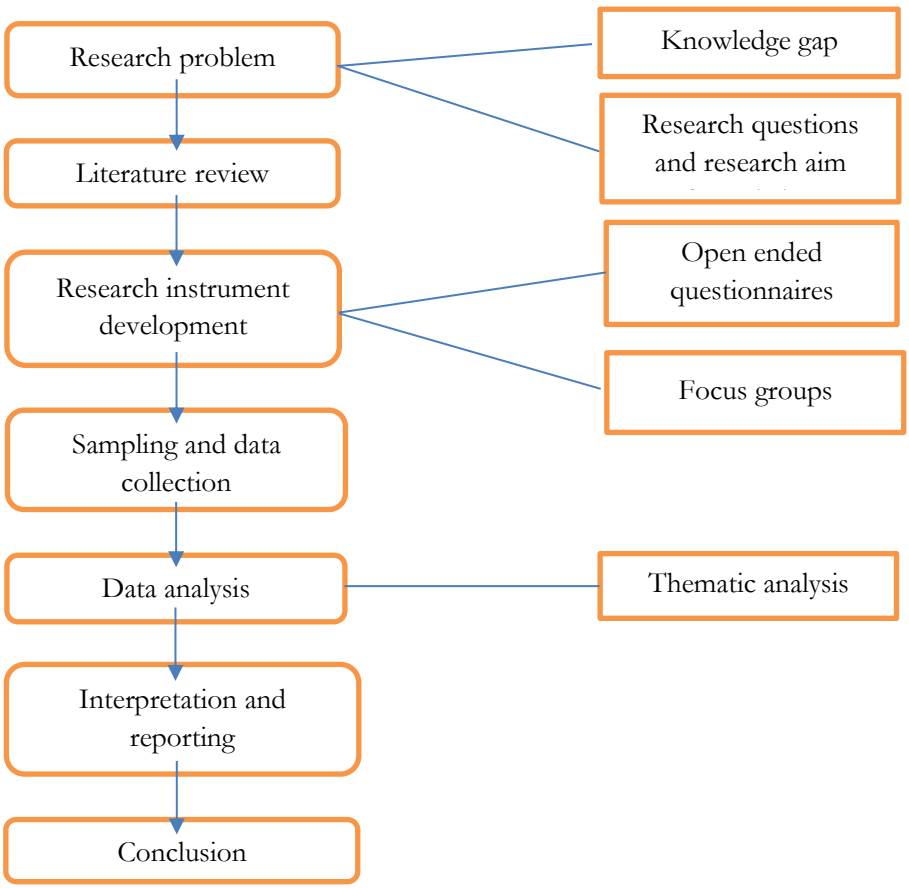

Figure 1. Research Flow

The research methodology of this study follows a structured approach, designed to thoroughly explore the environmental factors that influence students' decisions to pursue a career in IT. This approach is visually represented in the research flow diagram (Figure 1), which outlines the sequential steps taken throughout the study. Each stage was carefully crafted to align with the research objectives, ensuring a comprehensive investigation of the key factors involved. The following subsections provide a brief overview of the steps outlined in Figure 1. A more detailed explanation of how each step was executed is provided in the relevant sections of this research.

2.1 Problem Identification

The first step involves clearly identifying the research problem, which in this case is the need to understand how environmental factors such as technological advancements, societal expectations, media trends, and access to IT resources shape students' decisions to study IT. This issue was identified as part of a previous study by the authors [8], which examined broader factors affecting students' choice of IT careers. This step was critical in setting the foundation for the entire research process, as it helped in framing the scope and focus of the study.

2.2 Research Questions

Based on the identified problem, specific research objectives were formulated to guide the study. The primary objectives were to: (i) Identify and analyze the key environmental factors that influence students' career choices in IT. (ii) Understand how these factors interact with personal and academic considerations to shape career decisions. These objectives ensured that the study remained focused on its core goals, facilitating a targeted exploration of the environmental influences on students' career choices. To guide the research process and ensure a targeted exploration of the core issues, the following research questions (RQs) were formulated:

1) RQ1: What are the key environmental factors influencing students' decisions to pursue a career in Information Technology?
2) RQ2: How do these environmental factors interact with personal and academic considerations in shaping students' career decisions?

These research questions informed the selection of participants, the design of data collection instruments, and the focus of data analysis, ensuring that the study remained centered on the exploration of these critical themes.

2.3 Literature Review

A comprehensive review of existing literature was conducted to ground the study in previous research. This step involved exploring various studies on career choice

influences, particularly in the IT field [1], [3], [4], [10], [11], to identify gaps that this study aimed to address. The literature review also informed the selection of appropriate research methods and provided a contextual understanding of the environmental, social, and technological factors at play.

2.4 Research Design

Given the exploratory nature of the study, aimed at understanding the environmental factors that influenced participants to pursue IT, a qualitative research design was chosen. According to [14], a qualitative approach is particularly well-suited for investigating the subjective, multifaceted factors influencing career decisions, as it allows for an in-depth exploration of individual and collective experiences. The research design incorporated focus group interviews and open-ended questionnaires to gather data.

2.4.1 Population & Sampling

A purposive sampling method was used to select participants from the population of first year and Extended Curriculum Programme (ECP) students enrolled in the IT Diploma program at a University of Technology. Purposive sampling is ideal for this type of study, as it targets individuals who are most relevant to the research question [15]. This step ensured that the data collected would be rich in insights and directly relevant to the objectives of the research. The research population for this study consists of all registered first-year and Extend Curriculum Programme (ECP) students enrolled in the Diploma in IT program at a University of Technology for the year 2023. The ECP caters to students who meet the basic entry criteria but need additional preparation for the standard three-year diploma program. Therefore, the ECP students in this research refer to students in their first year of the extended four-year qualification. Targeting 100 first year and 49 ECP students, the study aimed to examine the career choice perspectives at the onset of their academic journey, with a total targeted population of 149 students.

These students represent a diverse group regarding educational backgrounds, socio-economic status, and cultural diversity. Their inclusion in the study provides a comprehensive view of the environmental factors influencing students' decisions to study IT. By focusing on this specific population, the research aims to obtain valuable insights directly relevant to students' experiences and choices within the academic context of the chosen University. A structured questionnaire was developed based on research themes that address environmental factors for career choices. The questionnaire aims to investigate various critical factors affecting students' choices to embark on IT education. These factors encompass family influence, societal norms, financial considerations, availability of resources, and the caliber of their earlier educational experiences, among other pertinent factors.

2.4.2 Data Collection

Data collection involved two primary methods: focus group interviews and open-ended questionnaires. The focus groups allowed participants to engage in discussions about the factors influencing their career choices, while the questionnaires provided an opportunity for individual responses. This dual approach ensured a comprehensive collection of both collective and personal experiences, enriching the overall data set. Online surveys comprising open-ended questions were distributed to all first-year and ECP students in the ICT department at a selected University of Technology in South Africa, totaling 149 students. Out of these, 104 responses were received. Online surveys were chosen to capture detailed and subtle perspectives from a broader student cohort, leveraging the convenience and accessibility of the digital format to facilitate comprehensive qualitative data collection.

2.5 Data Analysis

Once data was collected, it was analyzed using thematic analysis, which involves identifying and interpreting patterns and themes within the qualitative data. Thematic analysis is a flexible and systematic method for examining qualitative data [13], [16], making it ideal for this study. The analysis process included identifying recurring themes and synthesizing the findings in relation to the research questions. The data obtained through the surveys and focus group interviews underwent systematic thematic analysis. This analytical process involved identifying recurring patterns, themes, and categories within the data, enhancing the researchers' understanding of the participants' experiences and perspectives. The initial questionnaire analysis pinpointed specific areas for further exploration. Subsequently, group interviews were conducted, fostering in-depth discussions and allowing for clarification of responses and exploration of emergent themes. Through this comprehensive methodology, the study aimed to offer a nuanced and thorough understanding of the subject matter.

2.6 Interpretation and reporting

The findings were structured around key themes identified during data analysis, focusing on how environmental factors such as technological advancements, media influences, and societal expectations impact students' IT career decisions. The authors were also influenced by the fact that environmental factors is one of the Social Cognitive Career Theory (SCCT) constructs for career choices [17]. This step involved linking the themes to the research questions and discussing the broader implications of the findings in relation to existing literature.

2.7 Conclusion & Recommendations

The final step involved summarizing the key insights drawn from the research and providing recommendations for educational institutions, policymakers, and career counsellors. The conclusions highlighted the central role of technology and media in shaping career decisions, while the recommendations focused on strategies to better support students in making informed career choices in the IT field.

2.8 Limitations of the study

The study has several limitations that must be considered when interpreting its findings. Firstly, the research sample is confined to a specific group of students, which may not be representative of the broader student population engaged in IT education across various academic settings. This specificity could limit the generalizability of the results. Additionally, the reliance on self-reported data through online surveys and focus group interviews raises concerns about response bias, as participants might tend to provide socially desirable answers or may not fully articulate their true perceptions and experiences. Despite its limitations, this study is significant as it contributes to a deeper understanding of a specific educational context, lays the groundwork for future research, provides methodological insights, raises awareness about the intricacies of response bias, and adds to the ongoing discourse in educational theory and practice in IT education.

2 RESULTS AND DISCUSSION

The results of this study are presented in alignment with the research questions. Thematic analysis of the data revealed key themes that address the environmental factors influencing IT career choices and their interaction with personal and academic factors.

3.1 RQ1: Key Environmental Factors Influencing IT Career Decisions

From the analysis of the focus groups and open-ended questionnaires, several dominant environmental factors emerged:

1) **Technological Advancements:** A large proportion of students reported that technological advancements had a significant influence on their decision to pursue IT. The rapid pace of technological development and the perceived future potential of IT were strong motivators for students.
2) **Media and Social Media Influence:** The portrayal of IT careers in the media, including news, movies, and social media platforms, emerged as a powerful factor. Students noted that positive media representations of IT

professionals and technological innovations played a pivotal role in shaping their perceptions of the field.

3) **Educational Resources and IT Infrastructure: Access** to modern IT resources and exposure to technology during high school influenced students' interest in the field. Students from schools with better technological infrastructure were more inclined to pursue IT, highlighting the importance of resource availability.

3.2 RQ2: Interaction with Personal and Academic Factors

The study also explored how environmental factors interacted with students' personal interests and academic experiences:

1) **Personal Interest in Technology:** Many students cited their intrinsic interest in technology as a major factor in their decision-making. This personal motivation often intersected with external factors like media and technological exposure, reinforcing their decision to choose IT.
2) **Academic Experiences and Performance:** Students' prior academic exposure to IT-related subjects, or lack thereof, played a role in shaping their career choices. Those who had opportunities to engage with IT coursework or extracurricular activities during high school were more confident in pursuing the field, further illustrating the interaction between academic and environmental factors.

3.2. Discussion

This study provides important insights into how different environmental factors influence students' decisions to pursue careers in IT. The discussion focuses on the key findings, addressing the research questions and explaining the broader implications of these results. Each theme identified in the analysis is discussed based on its impact on career decisions and how it interacts with personal and academic factors.

3.2.1 Impact of tech-saturated environments and technological advancements

One of the main findings of this study is the strong influence of technological advancements on students' decisions to pursue IT. The widespread integration of technology in today's environment significantly shapes children's cognitive development, education, and future career paths. In essence, the tech-environment that children are exposed to is expected to shape their career preferences. In this study 89% of students indicated that technological advancements had played a substantial role in their choice to pursue IT as a career. This considerable proportion emphasises the strong draw that the current wave of

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technological change and innovation has in attracting students to the field. A student from the study expressed, "Seeing the rate at which new tech is released, from apps to new smartphones, made me want to be a part of that innovation wave. I want to contribute to that constant progress." The continual emergence of novel tools, platforms, and capabilities is a primary motivator for students considering IT careers. Another student added, "It's like every day there's something new in technology that can change the world, and I decided I wanted to be a part of that change." These testimonials from students reflect a deep-rooted fascination with innovation in technology, indicating that students are not merely passive observers of the current tech boom but are actively seeking to engage with and contribute to future advancements.

In addition to technological advancements, 96% of students cited media trends as influential in choosing IT. This figure highlights the power of media portrayal in shaping perceptions of IT careers. The representation of IT in various media forms, including news, documentaries, films, and social media, seems to play a pivotal role in popularising the field and presenting it as a desirable and forward-looking career choice. The media's focus on success stories, innovative developments, and the societal impact of technology contributes to creating an appealing image of IT careers. Furthermore, 72% of students were influenced by social media in their decision to study IT. A student articulated this influence by stating, "Every time I see a breakthrough in technology headlining the news or trending on Twitter, it reinforces my decision to get into IT. It's like the world is telling you this is the field where the future is being made." The various depictions of IT across media outlets, from in-depth news coverage and compelling documentaries to portrayals in films and dynamic discussions on social media platforms, are pivotal in making the field popular and presenting it as an attractive, progressive career path. Another student shared their perspective: "I watched a documentary on cybersecurity and it hit me—this is where the action is. It's not just about gadgets and coding; it's about making a real difference in the world." This sentiment reflects how the media's emphasis on success narratives, groundbreaking advancements, and the broader societal implications of technology are integral in crafting an alluring narrative around IT careers, drawing students towards the discipline.

This data points to the growing importance of digital platforms in the lives of students and their career decision-making processes. Social media not only serves as a source of information about the IT industry but also as a space where students can observe and engage with tech trends, communities, and professional networks. This indicates that social media is not just a passive influencer but an active agent in shaping students' interests and aspirations towards IT.

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3.2.2 Educational setting and curricular structure

Secondary schools that provide advanced technological resources, engaging IT curriculum, and a supportive learning environment are crucial in inspiring students' interest in IT. This impact is not limited to the availability of technology alone but extends to the overall educational environment, characterised by proactive educational support and opportunities for hands-on learning experiences. Interestingly, the findings reveal that 73% of students reported that their secondary education and the institutions (also referred to as tertiary education) had not influenced their decision to pursue studies in IT. One student mentioned, "Our school had some computers, but they were outdated, and we rarely did any actual coding. My interest in IT grew from fixing old computers at home and using the internet to learn more about software." Furthermore, all the students indicated that the IT curriculum did not play a role in their career choice in fact not even a single participant indicated that they looked at the curriculum or subjects they will do in IT. 81% stated that their secondary school teachers had not influenced their decision.

The data suggests a striking disconnect between the students' career choice in IT and the influence of their secondary educational environment. The limited impact of peers and educational institutions in this context may point to the possibility that career decisions in IT are shaped outside the traditional school setting. This could be due to the nature of the IT field, which is often perceived as highly specialised and driven by personal interest and aptitude rather than school-based encouragement or exposure. The minimal influence of the IT curriculum and secondary school teachers on career choices is particularly noteworthy. This could indicate that the way IT is taught at the secondary level may not be engaging or relevant enough to inspire students to pursue it further. It suggests a potential gap in the curriculum, where IT subjects might not effectively highlight the breadth and dynamism of the field, failing to capture students' interest or illustrate the vast array of career opportunities within IT.

This scenario presents an opportunity for educational reform. There is a need for innovative teaching methods in IT education at the secondary level, including integration of real-world applications, industry-relevant projects, and exposure to the latest technological advancements. Additionally, professional development for teachers in the field of IT could enhance their ability to guide and inspire students effectively. Moreover, the findings highlight the importance of external influences in shaping students' interest and decisions to pursue IT. This might include exposure to technology outside of school, personal exploration, online resources, or influence from media and current events. Given the rapid evolution of the IT sector, keeping curriculum content up-to-date and relevant is also crucial to spark interest among students.

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3.2.3 Economic background

The enticement of the IT sector, renowned for its economic benefits and perceived job security, significantly influences students' educational decisions. This inclination is not merely a product of personal interest in technology but is profoundly shaped by societal narratives that equate success with careers in burgeoning tech industries. Consequently, 69% of the participants in this study expressed confidence in job opportunities within the careers they had chosen, indicating a positive outlook towards their future in the IT field. Yet, this confidence seems to hover in a space somewhat detached from a concrete understanding of the IT job market. This is evidenced by the fact that 86% of the students mentioned careers unrelated to IT when asked to discuss job availability in their chosen field of study. One student candidly shared, "I feel like IT is growing, and there will be jobs waiting for me. There's a lot of buzz about tech innovation, and I want to be part of that," illustrating a sense of optimism not necessarily grounded in specific market realities. Another student reflected a similar sentiment, "I've always heard there's a high demand in IT, so I'm confident about finding a good job, although I'm not exactly sure which IT roles will be available." These statements from the students encapsulate the optimism about career prospects in IT, highlighting a gap in understanding the specific job roles and opportunities that the IT market offers.

This discrepancy highlights a critical gap in students' awareness and understanding of the IT job market. The high confidence level suggests that students are optimistic about their career prospects, driven by the general perception of IT as a field with abundant opportunities. This optimism is a positive indicator of student attitudes towards IT careers. However, the lack of awareness about specific IT-related job opportunities points to a deficiency in career guidance and education about the diverse roles available within the IT sector. Students may not be fully cognizant of the range of career paths that their IT education can lead to, potentially limiting their ability to make informed career decisions.

The findings suggest a need for enhanced career counselling and informational resources that provide detailed insights into the IT job market. Educational institutions and career counsellors should focus on bridging this knowledge gap, equipping students with a realistic and comprehensive understanding of the various career options available in IT. This could involve organising career fairs, industry talks, and workshops that bring professionals from different areas of IT to share their experiences and advice with students. Moreover, integrating more practical, real-world insights into the IT curriculum could also help students better understand the applicability of their skills in the job market. Exposure to current industry trends, emerging roles in IT, and the practical challenges of the field can prepare students more effectively for their future careers.

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3.2.4 Peer pressure and societal expectations

Students often feel a strong pull to align their educational and career choices with those of their peers, especially in environments where IT is perceived as a prestigious or financially rewarding field. This tendency reflects a broader social pattern where students are swayed by their peer group's collective choices and opinions. In contrast, a significant 90% indicated that their direct peers, namely their classmates, did not influence their decision to pursue IT. Additionally, only 8% of the students reported being influenced by their surrounding community in choosing IT. "Most of my friends were leaning towards business or medicine, but when I saw what I could create and solve with IT, I knew it was my path," one student explained, emphasising the divergence of their interest from peer group trends. Another student shared, "The community I come from doesn't really understand the scope of IT. They admire traditional professions more. But exploring technology on my own made me realise its potential to change lives." These narratives underscore the limited influence of direct peers and the community, challenging common assumptions about the role of peer pressure in career decisions. Students' career choices in IT suggests that traditional peer dynamics play a lesser role in this field. This could be attributed to the highly individualised nature of IT as a career choice, where personal interests and aptitudes are more influential than the opinions and choices of peers. In addition, the low influence of the community also points to a potential lack of awareness or understanding of the IT field among the general population. This lack of influence may indicate a gap in communication and outreach efforts, highlighting the need for increased public awareness about the opportunities and potential within the IT industry. There is an opportunity for educational institutions to engage more actively with local communities, promoting IT education and careers through various outreach programs, workshops, and seminars.

The findings further reveal that 62% of the students acknowledged being influenced by past students in their decision to choose IT as a career. This data suggests a nuanced understanding of peer influence in career decisions. The substantial impact of past students highlights the importance of alumni networks and mentorship in shaping students' perceptions and choices. The success stories and experiences of former students in the IT field serve as a significant source of inspiration and guidance for current students. This positive influence from alumni underscores the value of establishing strong connections between current students and successful graduates, as these relationships provide real-world insights and practical advice on navigating IT careers.

3.2.5 Family influence on career decisions

It is usually expected that family expectations and pressure shape children's career paths. However, our findings reveal that 65% of the students reported that family friends did not influence them, and 57% indicated that immediate family members had no significant impact on their decision to study IT. On the contrary, [18] suggests that family shapes students' intentions in their career selection. This is crucial for understanding the dynamics of career choice among IT students, highlighting a trend towards autonomous decision-making.

One student from our study poignantly encapsulated this trend of independence, saying, "My choice to study IT was truly my own. My family, unfamiliar with what a career in technology entails, had different expectations. My drive was fueled by the endless possibilities technology offers." This sentiment illustrates the growing inclination among IT students from economically disadvantaged backgrounds to make career choices anchored in personal interests and the opportunities perceived within the field rather than conforming to the expected, traditional pathways influenced by family. Moreover, another student shared, "My family envisioned a more traditional path for me, perhaps because that's what they were familiar with. But the lure of innovation and the future prospects in IT were too compelling for me to ignore." These personal accounts underscore a shift towards prioritising individual aspirations and interests over the guidance or expectations of family members who might not fully grasp the value and potential of higher education, especially in fields as dynamic as IT.

This trend suggests that students in IT are more inclined to make career choices based on personal interests, passions, or perceived opportunities in the field, rather than adhering to traditional family-guided pathways. Such a shift towards individual decision-making reflects broader societal changes where personal preferences and aspirations are increasingly valued over familial advice or expectations. The diminished role of family in career decisions implies a changing perception of IT as a career, now viewed as a field driven more by personal interest and aptitude[19]. The findings necessitate a recalibration in the approaches of educational institutions and career counsellors, emphasising the need to provide resources and guidance catering to individual exploration and decision-making in career choices. This includes facilitating opportunities for students to explore their interests and strengths in IT, independently of family influences. Furthermore, these insights suggest that universities and colleges might need to adjust their recruitment and outreach strategies to focus more directly on students' aspirations and interests, rather than appealing to family influences. Marketing strategies could be more effective if they directly address students' aspirations, highlighting the diverse opportunities and career paths within the IT sector.

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Lastly, the limited influence of family on students' decision to study IT could be indicative of broader societal trends, reflecting a growing recognition of the importance of aligning one's career with personal interests. It also points to the evolving nature of the IT industry, perceived as dynamic and innovative, offering numerous opportunities that resonate directly with the younger generation. This trend has significant implications for how educational institutions approach student recruitment, career guidance, and support services, and it also mirrors broader societal shifts in career decision-making, particularly in rapidly evolving and highly individualistic fields like IT.

3.2.6 Gender representation and socio-cultural environment

Usually, the environment shapes how people think, and it is expected that cultural stereotypes should influence students. However, this was not the case in this study, and the data indicated that 62% of the participants were female. This suggests a significant shift in thinking. In essence, environmental and cultural stereotypes no longer shape how people think. This may be attributed to broad access to information due to the proliferation of the internet. This is a notable finding, as it challenges the long-standing gender stereotypes associated with the IT field. According to [20], [21], IT and related technological fields have been male dominated, with women significantly underrepresented. The high proportion of female students in this study indicates a positive shift towards greater gender diversity in IT education, which is crucial to achieving gender balance in the IT workforce.

This trend has several implications. Firstly, it highlights the changing landscape of IT education and suggests that efforts to encourage female participation in IT are gaining traction. This shift is essential not only for promoting gender equality but also for harnessing a diverse range of perspectives and skills in the IT industry. Diverse teams are known to foster creativity and innovation, which are key drivers in the technology sector. However, while the increased female participation is promising, it also underscores the need for continued efforts to support and empower women in IT. Educational institutions, policymakers, and industry leaders must ensure that the environment in IT education and the broader IT industry is inclusive, supportive, and free from biases that might deter women from entering or advancing in the field. This can include initiatives like mentorship programs, scholarships, workshops focusing on women in IT, and campaigns to challenge and change any existing stereotypes. Additionally, the cultural aspects of this theme, though not explicitly detailed in the provided data, are also crucial. Cultural factors, including societal norms and expectations, can significantly influence career choices and are often closely intertwined with gender roles and perceptions.

3 CONCLUSION

This study investigated the environmental factors that influence students' decisions to pursue careers in Information Technology (IT), addressing two core research questions. The study identified three primary environmental factors that shape students' IT career choices: technological advancements, media influence (including social media), and access to IT resources and infrastructure in schools. Technological progress motivates students by presenting the IT field as innovative and full of potential. Additionally, media portrayals and social media trends significantly shape students' perceptions of IT as an attractive and exciting career path. The availability of IT resources, such as modern technology in educational settings, plays a crucial role in fostering early interest and engagement in IT (RQ1). The environmental factors identified in the study interact closely with students' personal interests in technology and their academic experiences. Students who had a natural curiosity about technology, along with early exposure to IT-related courses or extracurricular activities, were more confident in pursuing IT. This highlights the importance of aligning personal passion and academic opportunities with external factors, particularly the access to IT infrastructure and the positive portrayal of IT careers in media (RQ2). These findings have important implications for educational institutions and policymakers. Schools must invest in IT infrastructure and provide hands-on learning opportunities to spark student interest. Career guidance programs should also help students critically assess media portrayals of IT careers to ensure realistic expectations. Finally, educational strategies should nurture students' personal interests by offering diverse, engaging IT-related coursework and extracurricular activities to build a solid foundation for their future in the field.

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