Research on the Application of Cloud Computing in Employment Stress Management of Higher Vocational Students Based on the Perspective of Psychological Well-being

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ARTICLE INFO	ABSTRACT
	In an era characterized by the pervasiveness of technology in the workplace, cloud computing has revolutionized the way we work and collaborate. While this transformation offers numerous advantages, it also introduces new challenges, particularly in terms of workplace tension and Student well-being. The purpose of this study was to investigate the relationship between cloud computing and student job search stress, with a focus on the mediating role of psychological well-being and the moderating role of technological proficiency. To achieve these goals, an online questionnaire was distributed to 460 individuals from third year students of higher vocational institutes and detailed demographic data, such as age, gender, field of study, and prior experience with cloud computing, were collected to provide a comprehensive understanding of the sample. Smart PLS 4, a structural equation modeling tool, was used to analyze the data. The research strategy included a thorough evaluation of cloud computing in student stress management, which served as the study's theoretical underpinning. The study found that cloud computing affects student job search and mental health. It also found that psychological well-being mediates the relationship between cloud computing use and student job search stress. Additionally, technological proficiency was identified as a moderator between cloud computing and student stress management, underscoring the importance of individual differences in technological aptitude. This study advances academic understanding by addressing the complexities introduced by cloud computing, thus enriching the existing literature. Moreover, it offers practical guidance to firms and students navigating cloud computing's influence on job search stress. Specific recommendations for enhancing student welfare and reducing stress in the context of cloud computing adoption are provided. The cloud collaboration tools and remote work practices of today's workplace make this research relevant. Overall, it contributes to both academia and practice by providing actionable insights for improving employee well-being and success in the era of cloud computing. **Keywords:** Application of Cloud Computing, Student Job Search Stress, Technological Proficiency, Cloud Service, Cloud Collaboration Tools.

INTRODUCTION

The surge in reliance on cloud computing has transformed the dynamics of how we navigate and engage in the job market during a time when technology shapes the landscape of our professional pursuits. The acquisition of Internet-enabled devices has increased rapidly within society (Rodrigues, 2022). This shift brings about numerous benefits, such as heightened flexibility, connectivity, and efficiency in the job search process (Chiu & Lin, 2022). However, as students increasingly depend on cloud technology in their quest for employment, it also introduces novel challenges that can impact their overall well-being (Aktan, Turhan, & Dolu, 2022). From the blurring of boundaries between personal and professional life to the continual influx of digital tools, the impact of cloud technology on student job search stress and psychological well-being is significant, with effective use reducing anxiety but constant connectivity potentially increasing stress. Data shows proficient users experience lower stress, highlighting the need for targeted training. This analysis delves into the intricate interplay, shedding light on the nuanced effects of cloud computing on the modern job seeker (Cheng, Liu, & Li, 2021).

The stress associated with job hunting is of paramount importance in today's academic and professional landscape, affecting students on multiple levels. The well-being of individuals is directly influenced, spanning both mental and physical health considerations (Cao & AlKubaisy, 2022). Prolonged stress during the job search process can lead to conditions like anxiety and depression, ultimately diminishing the overall quality of life for students. Beyond the personal toll, job search stress exerts a substantial impact on educational institutions, extending to psychological costs. It detrimentally affects the efficiency and performance of students, resulting in errors and decreased productivity (Abdurrahman, Parmin, & Muryanto, 2022). The repercussions extend to student attrition due to stress-related burnout, incurring recruitment expenses and the loss of invaluable academic knowledge. Furthermore, a decline in student morale and campus culture impedes collaboration and innovation in the academic setting. Just as organizations are obligated by legal and ethical considerations to provide a safe and healthy workplace, educational institutions must also address stressors to support students in their job search endeavors.

The landscape of student job searching has undergone a profound transformation with the advent of cloud computing, ushering in both advantages and challenges that significantly impact the stress levels of students. In the realm of student job searches, achieving a balance between academic pursuits and the quest for employment has become increasingly complex as cloud computing enables access to job-related data and applications from virtually anywhere (Suhariadi et al., 2023). While this flexibility offers certain benefits, it has given rise to an "always-on" culture, making it challenging for students to disengage from their job search-related responsibilities. This continuous connectivity affects their ability to unwind and recharge after dedicating time to job search activities. Due to the quick pace of technological advancements associated with cloud computing, students must constantly adapt to new tools and platforms (Faridi, Sarwar, Ahtisham, Kumar, & Jamal, 2022). The fear of falling behind in technological proficiency, especially among those lacking confidence in their tech skills, can amplify job search stress. Lastly, the rise of remote work facilitated by cloud computing presents unique difficulties for students, including feelings of loneliness and detachment from the traditional office environment. These emotional challenges can exacerbate stress related to job searching (Molino et al., 2020). For educational institutions and students seeking to leverage the benefits of cloud computing in the job search process while effectively managing associated tensions, it is crucial to acknowledge and address these intricacies (Lin, Wu, & Gao, 2022). Recognizing the nuanced impact of technology on student job search stress can contribute to the development of strategies that cultivate a more resilient and efficient approach to navigating the employment landscape.

Previous research in this field has extensively examined the influence of cloud computing on the workplace and employee well-being (Dóra, R. Péter, S. Z. Péter, & Andrea, 2019). However, there is a noticeable gap concerning the specific connection between cloud computing and stress in the context of student job searches. This study addresses this gap by emphasizing psychological well-being and technological skills' moderating effects. While previous research has explored the broader implications of technology on stress across various domains, the unique and rapidly evolving challenges posed by cloud computing remain underexplored (Tang, Wei, & Chen, 2024). The objective of this study is to study the impact of cloud computing on tension tiers among college students as they seek employment (Jeong, 2017; Lin et al., 2022; Lv, Tan, Zheng, Zhang, & Wang, 2023). Through this enterprise, it seeks to cope with a substantial void within the studies literature by using offering a comprehensive knowledge of the complex interaction among technology, scholar nicely-being, and activity search-associated strain.

This study aims to analyze how cloud computing impacts student job search stress, examining its emotional effects on students actively seeking employment. It explores the relationship between cloud computing, job search

stress, and the role of psychological well-being, as well as how technological proficiency mitigates this stress. The study intends to provide a solid theoretical foundation by reviewing existing research on cloud computing, job search stress, psychological well-being, and technological skills. It also investigates the mediating role of psychological well-being in the relationship between cloud computing and job search stress. Ultimately, the research seeks to offer actionable recommendations to help students manage job search stress and improve their well-being in the context of increased reliance on cloud computing.

This research holds academic and practical significance as it advances our understanding of the complex interplay between technology, student well-being, and job search stress, with a specific focus on the impact of cloud computing. It addresses a critical gap in the literature by shedding light on the diverse dynamics introduced by cloud technology in the realm of student job searches. From a practical perspective, the study provides tangible benefits to students navigating the challenges of the digital age. It guides decision-making in the utilization of cloud computing resources, offering actionable insights and recommendations to help students build resilience, improve their job search experience, and thrive in an era marked by technological advancements. In the context of a rapidly evolving job landscape characterized by remote work and digital technologies, this study offers timely guidance for students to adapt, succeed, and maintain well-being during their job search. By comprehensively examining these aspects, this research sets the stage for a deeper exploration of how cloud computing influences the job search process, thereby enriching the academic discourse and providing practical strategies for student success.

LITERATURE REVIEW

Application of Cloud Computing

In recent years, the educational landscape has undergone a major shift, driven by continuous technological advancements (X. Sun & Song, 2023). Cloud computing has become a disruptive technology that provides businesses with scalable and affordable options for processing, storing, and delivering data. Its potential to completely transform the IT industry has been acknowledged by academics (Knebel, Trevisan, Nascimento, Abel, & Wickboldt, 2023). Cloud computing, which includes IaaS, PaaS, and SaaS, is popular due to its versatility, on-demand access, and low capital costs (Khoda Parast et al., 2022). It may also drive digital innovation, allowing companies to swiftly adapt to changing market conditions. Nonetheless, the administration of cloud resources, compliance, and data security issues have been major subjects of study in cloud computing (Abdullayeva, 2023). Researchers are looking into how cloud computing is affecting different businesses as it develops and how to optimize its advantages while reducing associated hazards.

Cloud computing services are now an essential component of modern corporate operations. Cloud services, such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS), provide enterprises with scalable and cost-effective solutions (Pezoulas, Exarchos, & Fotiadis, 2020). One of the most popular cloud computing services is cloud storage. It allows users to remotely store and access data. Amazon S3, Google Cloud Storage, and Dropbox are among the most popular cloud storage systems (Marinescu, 2023). Cloud storage is rapidly being used by businesses and people to relieve the strain of data management and backup (Chen, Tong, Feng, & Wang, 2022). Prajapati and Shah (2022) have shown how convenient it is to use cloud storage for data synchronization and backup between devices. Businesses can save money on on-site storage, and anyone with an internet connection can simply access their files from any location. Nonetheless, it also has addressed worries about data privacy and security lapses in cloud storage. Cloud collaboration tools have revolutionized how teams work and communicate. Real-time collaboration, document sharing, and virtual meetings are all possible with platforms such as Microsoft Teams, Slack, and Google Workspace. The importance of cloud collaboration tools in boosting productivity, particularly in remote work circumstances, has been highlighted by Scalera, Gentile, Plantamura, and Dimauro (2020). According to Karnad and Udiaver (2022), cloud collaboration solutions are becoming necessary for contemporary companies. They remove geographical obstacles and enable teams to collaborate easily. Teamwork and information sharing have improved as a result of real-time chat, video conferencing, and document collaboration. However researchers have also brought attention to issues with security, information overload, and successfully leading remote teams.

Psychological Well-being

Psychological well-being is a multidimensional concept that influences an individual's overall mental health and life pleasure. It is made up of multiple interconnected dimensions, one of which is emotional well-being (Ong, Barthel, & Hofmann, 2023) define emotional well-being is an individual's ability to feel, express, and control emotions in a healthy and adaptable manner. High levels of positive affect, emotional stability, and resilience in

the face of stress are examples of this characteristic of psychological well-being (Martin Ginis et al., 2023). Individuals with a strong emotional foundation tend to have more frequent good feelings, better regulate negative emotions, and exhibit more emotional resilience, all of which contribute to their overall psychological health (Kim et al., 2023). Another essential component of psychological well-being is cognitive well-being. It centers on a person's outlook on life and personal development. Dimensions including autonomy, self-acceptance, and having a life purpose are linked to cognitive well-being (Akortiakuma, Dzansi, & Aziato, 2022). Autonomy is the ability to make decisions in accordance with one's values and desires, whereas self-acceptance entails accepting and acknowledging one's own strengths and shortcomings (Bowman, 2023). The third factor that makes up the complicated tapestry of psychological well-being is social well-being. It focuses on an individual's social interactions and sense of belonging to a community or social network (Sek-yum Ngai et al., 2023). The quality of one's social ties, the quantity of social support one receives, and the extent to which they feel integrated and connected with others all contribute to one's social well-being. Strong social connections and a sense of belonging, according to Zahoor, Donbesuur, Christofi, and Miri (2022), contribute greatly to an individual's overall psychological well-being. As a result, social well-being is crucial in shaping an individual's mental health because it can operate as a protective factor against psychological discomfort and improve overall life satisfaction.

Student Job Search Stress

In the dynamic landscape of student job searches, stress has become a prevalent challenge affecting individuals navigating the complexities of employment exploration. Various factors contribute to stress in the pursuit of job opportunities, including the pressures of handling heavy workloads, managing tight time constraints, facing job uncertainty, and the continuous demand to adapt to new technologies (Paoletti et al., 2023). The results of stress during the student job search have garnered attention, with studies highlighting its capability impact on man or woman nicely-being and broader effects for instructional establishments. Interestingly, research has indicated that heightened stress degrees for the duration of the job search method can also cause adverse effects including dwindled process delight, decreased productivity, or even burnout (Pflügner, Maier, & Weitzel, 2021). Moreover, the repercussions are bigger beyond the professional realm, impacting the bodily and intellectual health of students, contributing to conditions like anxiety and depression (Orsi-Hunt, Harrison, Rockwell, & Barbee, 2023). It is vital for academic institutions to understand and cope with pupil task pressure as an extensive problem, given its potential to persuade the well-being of college students and the general success of their instructional adventure.

Technological Proficiency

The proficiency to use and adapt to digital technologies, commonly referred to as technological proficiency, is increasingly pivotal in the landscape of student job searches. This skill set holds significant importance in defining an individual's competency with technology, and its impact resonates across various domains, including education and the pursuit of employment opportunities. Research by Labrague, Aguilar-Rosales, Yboa, & Sabio (2023) suggests that technological proficiency is correlated with heightened adaptability and success in the job search process. In the context of student job searches, individuals equipped with strong technological aptitude demonstrate the ability to complete tasks more efficiently, adapt to emerging technological trends, and contribute to the overall success of their job-seeking endeavors (Belda-Medina, 2022). Moreover, technological proficiency is identified as a critical component of digital literacy, enabling students to communicate, collaborate, and problem-solve in digital contexts (Rahayu & Haningsih, 2021). As the job market continues to integrate new technologies, students possessing advanced technological competency are better positioned to contribute effectively to their job search teams and foster creativity.

Application of Cloud Computing and Student Job Search Stress

The impact of cloud computing on student job search stress is gaining recognition in the contemporary digital landscape. The accessibility, scalability, and flexibility inherent in cloud computing have the potential to influence the dynamics of job searching and student well-being. Research by Ampatzidis, Partel, and Costa (2020). suggests that the adoption of cloud computing during the job search process can bring about both positive and negative effects. On the positive side, cloud computing offers the advantage of remote work flexibility, potentially enhancing the work-life balance for students engaged in job searches and reducing the stress associated with commuting. Additionally, the seamless collaboration and communication capabilities facilitated by cloud services can streamline job search processes, alleviating stress caused by organizational inefficiencies (S. Ahmad, Shakeel, Mehfuz, & J. Ahmad, 2023). However, the widespread integration of cloud computing introduces new dimensions that may contribute to job search stress among students. One notable concern is data security. Cloud services store sensitive personal and corporate data off-site, raising concerns about privacy and the risk of data breaches (ThiBac & Minh, 2022). Students may experience heightened stress levels due to fears of unauthorized access or loss of sensitive information. Moreover, the rapid evolution of cloud technology introduces additional stressors.

Students may feel pressure to continually adapt to new tools and systems during their job search, leading to technological stress and skill-related stressors (Cao & AlKubaisy, 2022). The expectation to stay current with evolving technologies may add an extra layer of complexity to the already demanding process of seeking employment opportunities. Hence based on the above literature we purposed the following hypothesis.

H1: Application of cloud computing has a significant impact on student job search stress.

Application of Cloud Computing and Psychological Well-being

The use of cloud computing has revolutionized the way we engage with technology and work, which has an impact on psychological health. The accessibility, adaptability, and collaborative features of cloud computing have an impact on people's psychological health in both direct and indirect ways. Work-life balance and stress reduction are directly impacted by the capacity to access work-related data and applications remotely, which is made possible by cloud technology (T. Sun et al., 2022). Directly, the capacity to access work-related data and applications remotely, made possible by cloud technology, has profound effects on work-life balance and stress reduction. For students engaged in job searches, the flexibility provided by remote access enables autonomy in selecting work schedules and locations, potentially contributing to improved psychological health and job satisfaction (Pendyala, Yadav, Kulkarni, & Vadlamudi, 2022). Furthermore, cloud collaboration technologies, by facilitating teamwork and communication, play a role in enhancing social well-being among students. The sense of community and belonging fostered by these technologies can positively impact the psychological well-being of students actively participating in collaborative job search endeavors (Tabuenca, Moreno-Sancho, Arquero-Gallego, Greller, & Hernández-Leo, 2023). However, the indirect impact of cloud computing on psychological well-being introduces unique tensions and challenges for students. Concerns related to data security and privacy can elevate stress levels, particularly as students worry about the protection of their personal and academic information stored in the cloud (Ahmad et al., 2023). Moreover, the rapid pace of technological change associated with cloud technologies may induce technological stress among students, who must continually adapt to evolving tools and systems (Manoj, Krishnamoorthi, & Narendra, 2023). Hence based on the above literature we propose the following hypothesis.

H2: Application of cloud computing has a significant impact on psychological well-being.

Psychological Well-being as a Mediator

Understanding the intricate relationship between the use of cloud computing and stress during student job searches requires acknowledging the mediating role played by psychological well-being. The impact of cloud computing on students' mental health can be multifaceted (Aktan et al., 2022). On one hand, the adoption of cloud computing technology, by providing remote access to job-related data and applications, offers students the opportunity to enhance autonomy and achieve a better work-life balance (Chu, Chan, & So, 2022). This has the potential to positively influence psychological well-being and increase satisfaction in the context of the job search process. Similarly, collaborative features of cloud collaboration tools can enhance teamwork, alleviate stress stemming from inefficient job search procedures, and improve communication all of which can positively impact psychological well-being during the job search (J. Sun, Sarfraz, Ivascu, Iqbal, & Mansoor, 2022). However, the impact of cloud computing on psychological well-being may not always be straightforward. Stressors related to data security and technological adaptation, as mentioned earlier, might have a negative impact on psychological well-being by inducing feelings of anxiety and insecurity (Martí, Caballero, & Sellabona, 2020; Sheng, Yang, Han, & Jou, 2023). Consequently, psychological well-being may serve as a mediator in the association between the use of cloud computing during student job searches and the experience of stress, highlighting the intricate interplay between the advantages and disadvantages of this technology in the context of job search stress (Puliafito, Cicconetti, Conti, Mingozzi, & Passarella, 2023). Recognizing the mediating role of psychological well-being is crucial for comprehensively understanding how cloud computing shapes the student job search experience. Hence based on the above literature we purposed the following hypothesis.

H3: Psychological well-being mediates the relationship between application of cloud computing and student job search stress.

Technological Proficiency as a Moderator

Understanding the impact of cloud computing on stress during student job searches involves considering the moderating influence of technological proficiency. Technological proficiency—the capacity to use and adapt to digital technology—influences how students use cloud computing throughout job searches. Students with higher technological proficiency may perceive cloud technology as more accessible and user-friendly, potentially leading to reduced stress levels associated with the adoption of new technologies (Dubey & Verma, 2023). Proficient users are likely to adapt quickly to cloud-based solutions and possess a heightened awareness of data security standards, contributing to a decrease in stress related to data security concerns (Cao & AlKubaisy, 2022). Additionally, these

individuals may find it easier to navigate the ever-changing cloud environment, mitigating technological stress associated with staying current (Yadav et al., 2022). On the contrary, students with lower technological proficiency may find the adoption of cloud computing more challenging, potentially heightening their stress levels. For these students, job search stress may be intensified by the need to acquire new skills and concerns about the use and security of technology (ThiBac & Minh, 2022). Consequently, the relationship between the use of cloud computing and stress during student job searches can be moderated by technological proficiency. This proficiency not only impacts how students engage with technology but also influences their perception of how technology affects their overall well-being (Puliafito et al., 2023). Hence based on the above literature we purposed the following hypothesis.

H4: Technological proficiency moderates the relationship between application of cloud computing and student job search stress.

Based on the above literature and discussion following conceptual framework has been developed as shown in **Figure 1**.
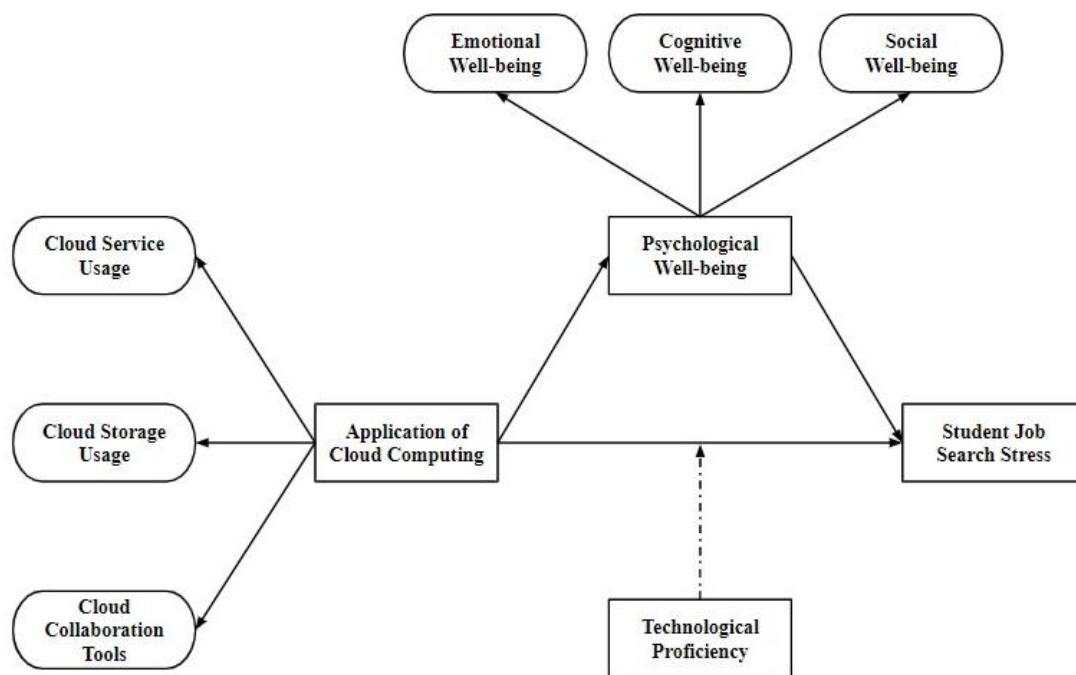

Figure 1. Conceptual Framework

METHODOLOGY

This study utilized a cross-sectional research technique to investigate the relationship between cloud computing and job search stress, considering the moderating influence of technological competency and the mediating role of psychological well-being and the items for these variables were adapted from previous research. The cross-sectional methodology was chosen as it allowed data collection from a diverse range of individuals at a specific point in time, offering a comprehensive snapshot of the relationships under examination. The study's population consisted of 460 from various higher vocational institutes. The sample size was calculated to ensure statistical power and accuracy, with a 95% confidence level and a 5% margin of error. Participants were selected using random sampling techniques to enhance the study's external validity and generalizability. Detailed demographic data, such as age, gender, field of study, and prior experience with cloud computing, were collected to provide a comprehensive understanding of the sample. Random sampling was conducted by obtaining a list of eligible third-year students from the participating institutions. A random number generator was used to select participants, ensuring that each student had an equal chance of being included in the study. This method reduces selection bias and enhances the generalizability of the findings to the broader population of students with cloud computing responsibilities. Online questionnaires were employed to facilitate data collection from geographically dispersed participants, increasing efficiency and reach. While online surveys are practical, they can introduce

response biases and limit control over data quality. To mitigate these issues, the study included measures such as reminder emails to improve response rates and built-in validation checks within the questionnaire to ensure data integrity. Online questionnaires were used to account for participant geographic dispersion and increase data collecting efficiency. The questionnaire was well-designed to assess participants' job searching stress, cloud computing knowledge, psychological well-being, and technological skills. After that, SeM and Smart PLS 4 were used to evaluate the data. Structural equation Modeling (SeM) and Smart PLS 4 were used to analyze the data, enabling the examination of complex variable relationships, mediating effects, and moderating effects. The analysis involved several key steps: defining the hypothesized relationships between cloud computing, job search stress, psychological well-being, and technological competency; using Smart PLS 4 to estimate the strength and significance of the direct and indirect paths; evaluating the model fit using criteria such as the chi-square test, RMSeA, CFI, and TLI; and conducting bootstrapping procedures to test the significance of the mediation and moderation effects, with a focus on path coefficients and their relevance. Path analysis was employed to examine the direct and indirect effects of cloud computing on job search stress, considering the mediating role of psychological well-being and the moderating role of technological competency. Specific hypotheses tested included: cloud computing reduces job search stress, psychological well-being mediates the relationship between cloud computing and job search stress, and technological competency moderates the impact of cloud computing on job search stress.

RESULTS

Measurement Model

The study utilized a measurement paradigm that incorporated both second-order reflecting and formative characteristics. The PLS-SEM criteria for assessing the measurement model include using reflecting indicators to quantify formative constructs (Zaman, Florez-Perez, Anjam, Ghani Khwaja, & Ul-Huda, 2022). Partial Least Squares Structural equation Modeling (PLS-SEM) is a suitable method for examining proposed connections in intricate models, particularly when dealing with limited sample sizes and higher-level constructs that include both formative and reflecting indicators (Roh, Seok, & Kim, 2022). In reflective measuring models, the projected relationships are determined by the factor loading and the absolute contribution of an item to its assigned structure (Wang, Sun, & Chen, 2023). The study findings indicate that the PLS model of assessment meets the minimum criteria for all items and first-order reflecting structures. All first-order constructs that reflect were found to have standardized factor loadings over 0.70. Based on Hair, Risher, Sarstedt, and Ringle (2019), every scale component with a factor loading below 0.50 should be removed from the model. All of our constructs have met the minimum criterion of reliability. Therefore, we examined the potential correlations among study variables by considering only the reflective items of individual constructs with a loading above 0.50.

To assess the internal consistency (reliability) of each construct, composite reliability (CR) and Cronbach's α, as suggested by Haugeland, Følstad, Taylor, and Bjørkli (2022), were employed. **Table 1** displays the range of Cronbach's α values, which vary from 0.771 to 0.905. These values are above the threshold of 0.7 set by Nunnally (1978). All CR values simultaneously exceed 0.8, surpassing the Fornell and Larcker (Afthanorhan, Ghazali, & Rashid, 2021; Henseler, Ringle, & Sarstedt, 2014) criterion of 0.7. Consequently, the measurement items exhibited sufficient reliability and stability. AVE conducted a convergent validation assessment to determine the extent of variation in the variable items (Hafiza AReesha Javed, Nawaz, & Hafiza Arooba Javed, 2023). The AVE value should exceed 0.50, as recommended by Afthanorhan et al. (2021). This implies that at least 50% of the variability in the indicator will be included. **Table 2** demonstrates that, in accordance with this recommendation, all the AVE values fulfill the threshold condition of being more than 0.50. This indicates an appropriate level of convergent validity for each structure.

Table 1. Construct Reliability and Validity

Variables	Items	Loadings	α	CR	AVE
Application of Cloud Computing					
Cloud Collaboration Tools	CCT1	0.831	0.813	0.877	0.642
	CCT2	0.769			
	CCT3	0.853			
	CCT4	0.746			
Cloud Storage Usage	CSTU1	0.849	0.790	0.877	0.704
	CSTU2	0.809			

| Variables	Items	Loadings	α	CR	AVE
	CSTU3	0.858			
Cloud Service Usage	CSU1	0.910	0.792	0.879	0.708
	CSU2	0.794			
	CSU3	0.817			
Student Job Search Stress	SJSS1	0.850	0.895	0.927	0.761
	SJSS2	0.852			
	SJSS3	0.910			
	SJSS4	0.875			
Psychological Well-being					
Cognitive Well-being	CWB1	0.760	0.837	0.885	0.605
	CWB2	0.753			
	CWB3	0.834			
	CWB4	0.773			
	CWB5	0.768			
Emotional Well-being	EWB1	0.840	0.771	0.868	0.686
	EWB2	0.833			
	EWB3	0.812			
Subjective Well-being	SWB1	0.745	0.879	0.912	0.676
	SWB2	0.825			
	SWB3	0.812			
	SWB4	0.875			
	SWB5	0.846			
Technological Proficiency	TP1	0.881	0.905	0.930	0.725
	TP2	0.855			
	TP3	0.883			
	TP4	0.831			
	TP5	0.807			
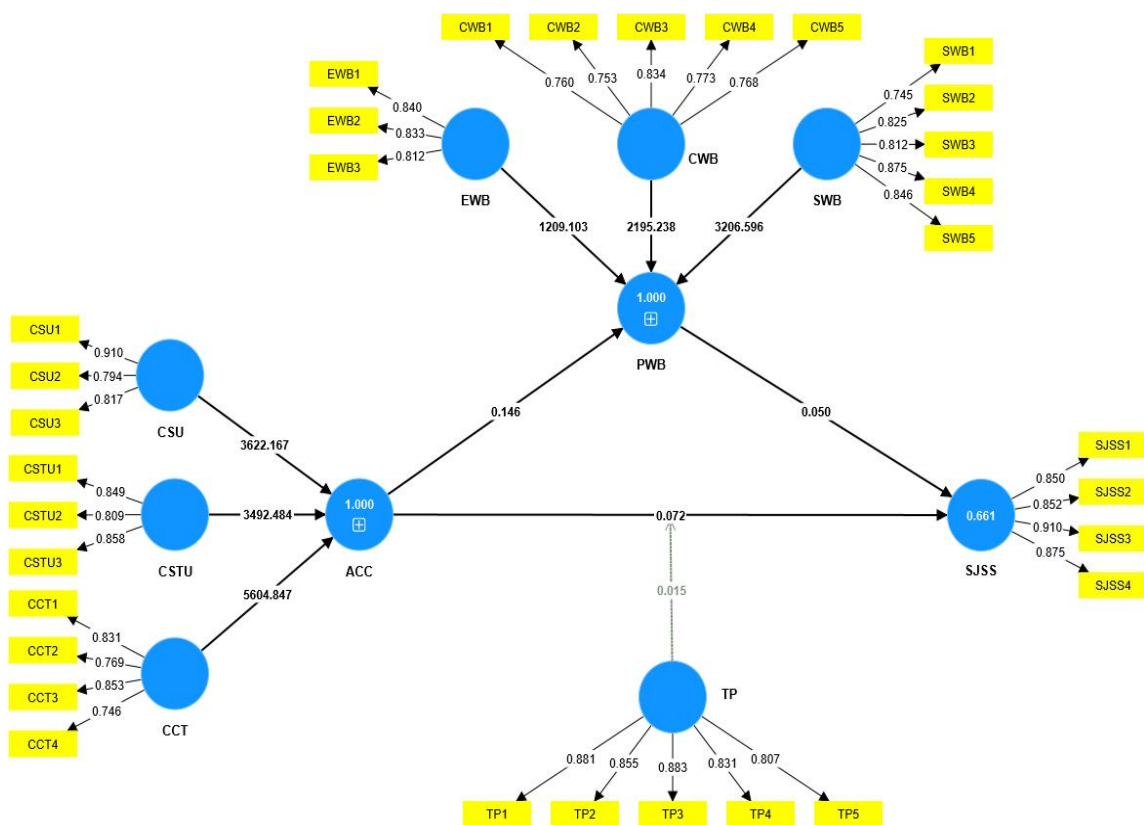
Figure 2. Measurement Model

Discriminant validity ensures that each construct in the study model is clearly distinguishable from the others, while also indicating the level of interactions among the items that represent specific constructs (A. Javed, J. Iqbal, S. M. J. Iqbal, & Imran, 2021). The HTMT technique was utilized to assess the precise relationships between the components. The HTMT technique is strongly advised for demonstrating discriminant validity due to its ability to address the limitations and inefficiencies of the standard Fornell-Larcker criterion (Zaman, Nawaz, Javed, & Rasul, 2020). According to Hair, Sarstedt, and Ringle (2019), the HTMT method is used to quantify the ratio between-trait correlation and within-trait correlation. The HTMT value, located above the diagonal values, is consistently below the threshold value of 0.90, as indicated in **Table 2**. Furthermore, the measuring model also confirmed the discriminant validity of the research constructs.

Table 2. Discriminant Validity (HTMT)

	CCT	CSTU	CSU	CWB	SJSS	EWB	SWB	TP
CCT								
CSTU	0.686							
CSU	0.571	0.323						
CWB	0.579	0.815	0.863					
SJSS	0.612	0.836	0.843	0.818				
EWB	0.774	0.809	0.753	0.760	0.674			
SWB	0.834	0.829	0.814	0.805	0.781	0.783		
TP	0.818	0.808	0.798	0.780	0.802	0.600	0.708	

As per the guidelines of PLS for evaluating formative modeled higher-ordered constructs (Zaman et al., 2022), the initial analysis necessitates the disclosure of the outer-weights and their related p-values for the first-order (reflective) dimensions. **Table 3** displays the importance of application of cloud computing and psychological well-being, which are measured as second-order formative constructs. The dimensions of these constructs are measured using first-order reflecting items. The table also shows the outer-weights and accompanying p-values. The dimension that made the greatest contribution to the application of cloud computing was cloud collaboration tools (β = 0.403; p < 0.01), compared to the other dimensions cloud storage usage (β = 0.306; p < 0.01) and cloud service usage (β = 0.336; p < 0.01). The importance of psychological well-being (measured as a second-order formative construct) and its individual aspects (measured as first-order reflective constructs) may be observed in **Table 3**. The findings indicate that subjective well-being, which is a facet of psychological well-being, has the greatest impact on overall psychological well-being (β = 0.440; p < 0.01). In comparison, cognitive well-being (β = 0.410; p < 0.01) and emotional well-being (β = 0.252; p < 0.01) have slightly lower contributions.

Table 3. Assessments of Formative Dimensions of Application of Cloud Computing and Psychological Well-being

First Order	Second Order	Beta	T values	P values
Application of Cloud Computing	Cloud collaboration Tools	0.403	38.8484	0.0001
	Cloud Storage Usage	0.306	38.160	0.0001
	Cloud Service Usage	0.336	36.047	0.0001
Psychological Well-Being	Cognitive Well-Being	0.410	39.545	0.0001
	Emotional Well-Being	0.252	33.398	0.0001
	Subjective Well-Being	0.440	37.823	0.0001

Structural Model

In order to examine the hypothesis, the researchers employed structural equation modeling, which is the second step of the PLS-SEM technique (Hafiza AReesha Javed et al., 2023). The level of correlation between variables is measured by the path coefficient, while the R2 value indicates the extent to which the independent variable may be used to predict outcomes. To assess the relevance of the model, bootstrapping was employed to calculate the t-values. Based on particular guidelines, t-values should exceed 1.64 (A. Javed et al., 2021). **Figure 2** depicts the multidimensional structural model for employment stress, whereas **Table 4** displays the significance level, path coefficient, and t-value of the variables of the study. The link between the application of cloud computing, psychological well-being, and student job search stress was directly identified by the use of PLS-SEM (Zaman et al., 2020). Furthermore, the coefficient of determination (R2 value) was employed to assess the evaluation of the primary structural model.

Table 4 demonstrates that the utilization of cloud computing, psychological well-being, and technological

competency collectively account for 66.1% of the variance in occupational stress. The R2 value demonstrated a greater statistical power in estimating the parameters for the PLS model (Irshad et al., 2023). Moreover, the predictive relevance of the PLS model was validated using the blindfolding approach (Munawar, Yousaf, Ahmed, & Rehman, 2022). The calibrated value of Stone-Geisser (Q2 = 0.523) in this investigation met the stipulated criteria, indicating statistical validity for the PLS model (Fagerholm, Spjuth, & Hellberg, 2022). The PLS-SEM analysis evaluated the standardized root mean residual value (SRMR) and validated that the model's fitness was satisfactory (SRMR = 0.080, which is less than the threshold of 0.08), as shown in **Table 4**. The PLS-SEM bootstrapping technique was used to evaluate the structural path model hypothesis of the study, as shown in **Table 4**. The model demonstrates the immediate impact of implementing cloud computing on student job-related stress. The findings of the study indicate a substantial and favorable influence of implementing cloud computing on student job search stress, with a coefficient (β) of 0.327, a t-value of 3.682, and a p-value of 0.0001. Consequently, H1 was accepted. Furthermore, the utilization of cloud computing has shown a notable favorable impact on psychological well-being (β = 0.003; t = 2.118; p = 0.017). Hence H2 was accepted.

Table 4. Path Analysis

Relation	Beta	T values	P-values	F2	R2	Q2	SRMR
ACC -> SJSS	0.327	3.682	0.0001	0.172	0.661	0.324	0.080
ACC -> PWB	0.003	2.118	0.017	0.012			
ACC -> PWB -> SJSS	0.207	3.013	0.001				
ACC*TP -> SJSS	0.074	4.788	0.0001				

Mediation Effect

The PLS-SEM bootstrapping technique was used to analyze the mediating impact of psychological well-being on the relationship between the application of cloud computing and employment stress. **Table 4** demonstrates that the impact of utilizing cloud computing on student job search stress is effectively and positively mediated by psychological well-being (β = 0.207; t = 3.013; p = 0.001). Hence H3 was accepted. Mediation refers to the process through which an independent variable (in this case, cloud computing) influences a dependent variable (job search stress) through one or more intermediary variables (psychological well-being). The bootstrapping results confirm this mediation effect, showing that cloud computing's positive attributes, such as increased flexibility and communication, enhance psychological well-being, which in turn reduces job search stress.

Moderation Effect

The PLS-SEM bootstrapping technique was used to analyze the moderating impact of technological proficiency on the relationship between the application of cloud computing and employment stress. This analysis is illustrated in **Figure 3**. **Table 4** demonstrates that the impact of utilizing cloud computing on student job search stress is effectively and positively influenced by technological proficiency (β = 0.007; t = 4.788; p = 0.0001). Moderation, on the other hand, refers to the interaction between an independent variable and a moderator variable, which affects the strength or direction of the relationship between the independent and dependent variables. Students with higher technological proficiency experience lower job search stress when using cloud computing, suggesting that proficiency enhances the beneficial effects of cloud computing on stress reduction. Hence H4 was accepted. In PLS-SEM, the magnitude of the dependent variable, as anticipated by the independent factors, is assessed using the effect size f2 (Hafiza AReesha Javed et al., 2023) provides various classifications of effect sizes. As to the author's statement, a value of f2 = 0.02 indicates a minor effect size, a value of f2 = 0.15 indicates a medium effect size and a value of f2 = 0.35 indicates a considerable effect size. The impact of implementing cloud computing on job stress was significant (F2 = 0.172), whereas the effect size of psychological well-being (F2 = 0.012) on work stress is moderate.
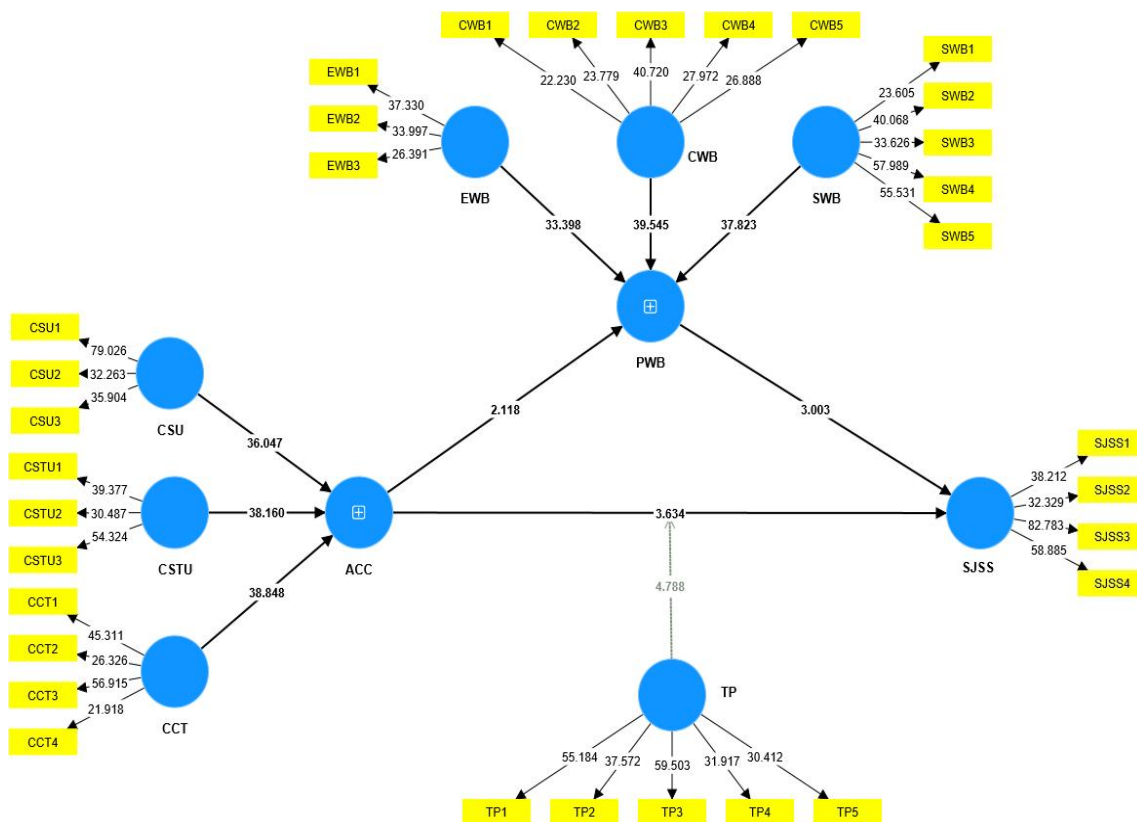
Figure 3. Structural Model

DISCUSSION

The study aimed to investigate the impact of cloud computing on student job search stress, while also examining its influence on psychological well-being and the moderating role of technological proficiency. Hypothesis 1 (H1) states that cloud computing affects student employment search. This relationship is crucial for understanding how technological advancements affect the well-being of students navigating the complexities of job searches (Brooks & Patel, 2022). The study's results corroborate H1, showing that there is a connection between employment stress and cloud computing use. To begin with, cloud computing technology has become commonplace in modern businesses, providing several benefits such as more flexibility, remote work capabilities, and improved communication (Puliafito et al., 2023). However, as technology advances, it creates new obstacles that might contribute to job stress (Cao & AlKubaisy, 2022). While remote access improves flexibility, technology may blur the lines between work and personal life, potentially leading to an always-on work culture in which employees feel obligated to be available at all times (Nakimuli, Garcia-Reinoso, Sierra-Garcia, & Serrano, 2022). This constant contact might cause stress by interfering with work-life balance. Using cloud collaboration technologies may also boost communication and teamwork (Ma, Ollier-Malaterre, & Lu, 2021). A sense of urgency that fuels work-related stress can be produced by the quick speed at which information is shared and the pressure to react.

Hypothesis 2 (H2) proposes that the application of cloud computing has a significant impact on psychological well-being. This study's findings complement H2, suggesting that the use of cloud computing has an effect on employees' psychological well-being. This finding emphasizes the significance of addressing the larger ramifications of technological improvements on people's mental and emotional states (Gao, Wu, Wang, & Zhao, 2020). There are numerous ways that cloud computing affects psychological health. On the one hand, more job flexibility brought about by cloud computing applications can improve psychological well-being (Seddiki et al., 2022). Employees have more control over their work settings when they can access work-related data and applications remotely, which may lower stress and improve psychological health in general (Brooks & Patel, 2022). Better work-life balance and increased job satisfaction are two possible outcomes for employees. These are crucial elements of psychological well-being (Wissing & Van Eeden, 2002). Furthermore, improved communication and cooperation can be promoted via cloud collaboration technologies, which enhances social well-being and a sense of community. An individual's psychological well-being can be positively impacted by a healthy work environment

that is created through effective teamwork and improved communication.

Hypothesis 3 (H3) suggests that psychological well-being plays a mediating role in the relationship between the application of cloud computing and employment stress. The findings of this study confirm H3, emphasizing the significance of psychological well-being as a moderator in the association between cloud computing use and job stress. This result highlights the need to assess workers' psychological health when examining how technology affects stress at work (Ampatzidis et al., 2020). It is necessary to comprehend the psychological well-being that acts as a mediator in the relationship between cloud computing and workplace stress in order to fully comprehend the complex dynamics at play (ThiBac & Minh, 2022). Cloud computing has the potential to directly affect workers' psychological well-being because of its capacity to enhance communication, remote collaboration, and job flexibility (Maheswari, Siva, & Nalinipriya, 2023). It can promote greater social well-being, a better work-life balance, and greater job satisfaction, as was previously said. There's a chance that this improvement in psychological health will reduce work-related stress. Employees who have higher levels of psychological well-being may be more robust in the face of pressures and better able to manage work-related issues (J. Sun et al., 2022). Because of their enhanced ability to cope with job demands and negotiate the intricacies of the modern workplace, they are more likely to report lower stress levels.

Hypothesis 4 (H4) introduces the concept of technological proficiency as a moderating factor in the relationship between the application of cloud computing and employment stress. The study's results validate H4, indicating that technological competence has a moderating effect on the association between cloud computing use and job stress (Tang et al., 2024). This finding highlights how important it is to take into account individual variations in technological proficiency when evaluating how cloud technology affects worker well-being (Rezaee Vessal, Partouche-Sebban, Scuotto, & Maalaoui, 2021). Employees' experiences with cloud computing are heavily influenced by their technological skills. Higher-level technologists are frequently better at exploiting cloud technology, adapting to new tools, and navigating digital settings (Scalera et al., 2020). Cloud computing may be related to less stress for these folks since they have the knowledge and confidence to use the technology efficiently.

CONCLUSION

This study has shed important light on the complex interactions between cloud computing, mental health, technology competence, and the stress associated with job searching for students. The results validate the predictions by showing that cloud computing affects the stress of students looking for work, affecting their psychological health as well as the moderating effect of technology proficiency. The widespread use of cloud computing in contemporary job searches offers benefits like increased communication and flexibility, but it also presents drawbacks like the pressure to provide information quickly and the possibility of creating an "always-on" mentality. Psychological well-being emerges as a critical mediator, demonstrating how cloud technology's positive qualities, such as increased flexibility and communication, might lead to reduced stress during the job search process. The practical implications of these findings are significant. For educators and career counselors, the results suggest the need to integrate technical competency training into school curricula, focusing on skills like data management, cybersecurity, and cloud-based collaboration tools. Additionally, career counseling services should emphasize strategies for maintaining a positive work-life balance and effective time management, such as workshops on setting boundaries and using productivity tools. To support students' mental health during job searches, schools could implement interventions such as mindfulness workshops, stress management sessions, and online modules that teach coping strategies. These resources can help students navigate the pressures associated with cloud computing and the digital job search process. Looking ahead, future research should explore specific technological skills that mitigate stress, the long-term impacts of technological proficiency on career outcomes, and the effectiveness of digital literacy programs in enhancing student well-being. Investigating targeted interventions that improve both technical skills and psychological resilience will provide valuable insights for educators and policymakers.

IMPLICATIONS

The results of this study have applications for educators, career counselors, and organizations that assist students in finding employment. The results highlight how crucial it is to include technical competency training in school curricula in order to improve students' ability to use cloud computing technology. With this knowledge, career counseling services can better target their advice, stressing the creation of a positive work-life balance and

efficient time management techniques to lessen the possible pressures related to using cloud computing. Additionally, schools may explore the use of seminars or other resources aimed at improving the mental health of students during their job search. Examples of such interventions could include mindfulness workshops, stress management sessions, and access to mental health support services. Schools could also offer online modules that teach coping strategies for dealing with the pressures associated with using cloud computing and navigating the job search process in a digital environment.

This study's theoretical implications add to a better understanding of the interaction of technology, well-being, and stress in the context of student job searches. This study enhances previous frameworks in organizational psychology by confirming the mediating role of psychological well-being and the moderating influence of technical proficiency. Specifically, it highlights how individual disparities in technological skills can impact the psychological effects of technology adoption, suggesting that students with higher technical proficiency experience less stress and greater well-being during job searches. It emphasizes the importance of a nuanced perspective that takes into account individual disparities in technological skills as well as the psychological impact of technology adoption. This study lays the groundwork for future research into the diverse dynamics that influence students' experiences and well-being in an increasingly digital labor market. Key areas of inquiry could include exploring how specific technological skills mitigate stress, identifying the long-term impacts of technological proficiency on career outcomes, and examining the role of digital literacy programs in enhancing student well-being. Additionally, investigating the effectiveness of targeted interventions designed to improve both technical skills and psychological resilience could provide valuable insights for educators and policymakers. These suggestions highlight gaps in the literature and offer a clear direction for advancing knowledge in the field.

LIMITATIONS

While the valuable insights offered by this study are noteworthy, several limitations warrant consideration. Initially, self-reported data, which are susceptible to biases and inaccuracies, are utilized in the research. To minimize these biases, measures such as ensuring anonymity and confidentiality, as well as employing validated scales, were implemented to enhance the credibility of the data. Moreover, the research is constrained to a particular demographic or educational environment, which may restrict the generalizability of the results. This limitation impacts the applicability of the findings across different populations. To mitigate this, future studies could employ strategies such as stratified sampling or comparative analysis across diverse demographics to improve generalizability. Additionally, the study's cross-sectional design provides a momentary depiction of associations but precludes the ability to deduce causal relationships. To address this limitation, future research could utilize longitudinal designs or experimental approaches to establish causal connections and better understand the temporal dynamics of technology's impact on student job searches. Furthermore, it is worth noting that the rapid progression of technology implies that the results might be susceptible to revision as cloud computing and associated technologies continue to develop. This evolving landscape underscores the importance of ongoing research to keep findings relevant and up-to-date.

FUTURE DIRECTIONS

In order to overcome these constraints and enhance comprehension of the influence of technology on student job searches, subsequent studies may utilize longitudinal designs to document alterations over a period and establish causal connections. Examining a range of student demographics and employment environments may improve the findings' generalizability. To gain a more nuanced knowledge of the moderating influence of technical proficiency. For instance, workshops on resume building using advanced software, seminars on digital networking, and mental health support programs tailored to the challenges of digital job searching could be beneficial, researchers could explore in further detail particular technological abilities that contribute to proficiency. Furthermore, examining interventions or programs targeted at improving students' digital literacy and mental health while job searching may provide useful tactics for colleges and career advisors. Lastly, given the way that digital collaboration and remote work are developing, it would be interesting to investigate how new technologies that go beyond cloud computing may affect students' experiences looking for jobs. Emerging technologies such as artificial intelligence (AI) for job matching, virtual reality (VR) for interview simulations, and blockchain for verifying credentials could significantly impact the job search process.

CONFLICT OF INTEREST

No potential conflict of interest was reported by the authors.

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