



Recruitment Strategies for Overcoming Skill Gaps in the IT Sector: A Systematic Literature Review

Jay Barach

Systems Staffing Group, Inc, United States

Abstract

This systematic literature review aimed to examine recruitment strategies for addressing skill gaps in the information technology (IT) sector. The review synthesized findings from 14 studies that explore various approaches to recruitment, including the use of technology, multidisciplinary programs, and strategic alignment between industry needs and educational outcomes. Key strategies identified include the integration of artificial intelligence (AI) in recruitment processes, adopting gamification to align educational choices with job market demands, and using person-brand fit to reduce social skills gaps. The review also highlights the growing importance of e-recruitment and social media as tools for attracting and screening candidates and the critical role of contextual factors such as technology competence and regulatory support in adopting AI. Additionally, the analysis underscores the persistent challenges of recruiting candidates with the necessary hard and soft skills, particularly in rapidly evolving sectors like IT. The findings suggest that combining innovative technologies and targeted recruitment practices is essential for bridging skill gaps and meeting the dynamic demands of the IT workforce. This review provides valuable insights for researchers and practitioners seeking to enhance recruitment strategies in the face of ongoing technological advancements and labor market shifts.

Keywords: Recruitment Strategies, Skill Gaps, IT Sector, Talent Acquisition, Digital Transformation, Gamification in recruitment

1. Introduction

The Information Technology (IT) sector is the basis of the modern global economy, driving innovation, efficiency, and growth across various industries. The IT sector supports much of the technological advancement that defines contemporary society, from facilitating communication through the Internet to enabling complex data analytics and automation (Baldwin, 2018). IT services relate well and, indeed, grow exponentially as economies throughout the globe continue to digitize. This growth, however, has its limitations. This paper will analyze one of the biggest challenges in the IT industry today. The skills mismatch remains and is even growing over time. A brief on the IT sector's potential and significance on the world

economy cannot go unnoticed. It spans several sub-sectors, such as software, cybersecurity, data analytics, cloud technologies, artificial intelligence, networks, and other related sectors (Adewusi et al., 2024). These sub-sectors are essential in advancing economic growth through enhancing productivity, facilitating new business models, and globalization. The IT sector also has a huge contribution to employment generation, providing well-paid employment opportunities and creating solutions that uplift other sectors of the economy.

However, the IT sector is grappling with a severe skill gap that threatens its continued growth and innovation. According to Baldwin (2018), technological development has continued to progress faster than what education systems and training programs can provide, which in turn has led to workforce production that can seldom meet organizational requirements. This demand-supply gap is most felt in areas of focus like cybersecurity, data science, artificial intelligence, and many more because the market is very much in need of professionals compared to the available supply (Adewusi et al., 2024). The skill gaps in the IT sector are multifaceted and stem from various factors. For example, in Khin and Ho's (2019) study, technology enhancement always comes up with new technologies, languages, and approaches that need expertise. Educational institutions and training programs experience difficulty meeting these changes promptly, and thus, their graduates are less prepared than the job market's requirements (Patacsil & Tablatin, 2017). Furthermore, this situation has been followed by a global competition for talent in the IT sector, which creates the primary shortage of skills in regions where the educational base is not as developed as in developed countries.

Moreover, the increased informatization across different sectors has prepared for increased demand for IT specialists who focus on particular areas. Aceto et al. (2020) argued that fields like finance, healthcare, and manufacturing industries, for instance, are now using IT solutions to improve the execution of business processes, improve customer experience, and create competitiveness. The desire to cut across sectors further puts pressure on the talent covering these sectors, which is already scarce, making it even harder for firms to employ individuals with these skills (Saeed et al. (2024). The skill gaps in the IT sector present a challenge for organizations. Lack of adequate talents and abilities to meet these emerging IT roles and responsibilities hampers the efficiency and effectiveness of delivering innovation, growth, and customer value to competing businesses. A skills shortage can act as a double-edged sword in the corresponding field, such as cybersecurity; for example, an organization will be vulnerable to aggressive attacks if there are not enough specialists (Florackis et al., 2023). Equally, skills shortages in data scientists and software developers may delay new product or service innovations, hence the loss of business development and potential revenues.

One of the key challenges associated with skill gaps in the IT sector is identifying and implementing effective recruitment strategies. While conventional approaches like posting demand for a particular job or talent enumerations through written advertisements, Campus Recruitment is typically insufficient for the IT industry's needs and is often diverse and dynamic (Black & van Esch, 2020). Therefore, modern organizations expand their efforts to recruit employees through social networks, cooperation with educational institutions, and employer branding. However, the effectiveness of these strategies varies widely depending on the specific context in which they are implemented, including the geographic region, the size and maturity of the organization, and the particular skills required.

It can be thus understood that the strategic management of recruitment practices and programs cannot be overemphasized. This is particularly lethal in a sector where talent is known to be one of the most excellent sources of competitive advantage, and organizations that cannot obtain the right personnel to recruit are invariably at a disadvantage. Furthermore, recruitment problems must be distinguished between organizational and national, as they imply adverse effects on development and prosperity, organizational and societal innovation, and human welfare. For example, the IT talent shortage can hinder the implementation of essential

technologies like artificial intelligence and cybersecurity to solve global problems such as climate change and cyber threats.

This review aims to explore and synthesize the existing literature on recruitment strategies to overcome skill gaps in the IT sector. This research aims to find feasible solutions that can be employed in the current dynamic world and with stiff competition to acquire, recruit, and retain qualified IT talent. Specifically, the review will address the questions of which forms of recruitment are most and least effective, whether novel approaches to recruitment and selection that are emerging in human resource management offer advantages or disadvantages in terms of matching talent with vacancies in organizational settings and how various recruitment strategies map onto the identification and acquisition of particular types of skills. To meet these objectives, this review aims to answer three fundamental questions in the recruitment process of personnel in the IT sector to overcome skill gaps: What are the most effective recruitment strategies to address skill gaps in the IT sector? How have these strategies evolved over time? And what are the outcomes of these strategies in different contexts?

This review addresses recruitment strategies within the IT sector. It identifies critical gaps in the existing literature by emphasizing underexplored dimensions such as adapting emerging technologies like artificial intelligence (AI) and gamification to recruitment processes. While prior research provides valuable insights into broad recruitment challenges, a significant gap remains in understanding how these technologies can be strategically aligned with the demands of rapidly evolving IT roles, particularly in niche areas like cybersecurity, data science, and artificial intelligence development.

Moreover, this review seeks to go beyond traditional approaches by investigating the synergies between conventional methods—such as partnerships with academic institutions—and modern innovations like social media-driven recruitment and AI-enhanced screening. These approaches are analyzed for their standalone effectiveness and ability to address skill gaps holistically, ensuring technical proficiency and organizational fit.

Another unique angle of this review is its attention to context-specific challenges, such as regional disparities in talent pools, regulatory constraints, and variations in organizational maturity, which profoundly influence the success of recruitment strategies. By synthesizing findings from diverse studies, this research offers actionable insights into bridging the skills gap in IT through tailored, context-aware strategies. Ultimately, the objective is to create a comprehensive framework that organizations can adapt to meet the dynamic demands of the IT workforce while fostering sustainable talent pipelines.

2. Theoretical Framework

2.1 Relevance of the Human Capital Theory

Human Capital Theory is fundamental in explaining the critical role of recruitment strategies in addressing skill gaps, particularly in the IT sector. This theory presupposes that having knowledge, skills, and abilities is one of the ways through which organizational productivity and economic growth are boosted (Kolomiiets & Petrushenko, 2017; Choudhury & Choudhury, 2022). In a highly technology-driven industry like this, there is, therefore, a need for skills updates, thus making human capital a key determinant of success in the industry. Organizations that can attract and maintain talented IT specialists have a competitive advantage because human capital is the source of innovations and staff's compelling performance. The IT sector is mainly reliant on a workforce with up-to-date technical skills, constantly evolving alongside technological advancements. Nevertheless, skill gaps within the industry pose a significant problem for organizations attempting to sustain strong human capital fundamentals.

Such gaps are because of the challenge of building a pool of skilled professionals to meet current and future needs. Therefore, the executive capacity for the preferential attraction and grooming of human capital directly defines the efficiency of innovation and the sustainability of competitive advantage in an organization (Latov & Tikhonova, 2021). Effective recruitment strategies, therefore, are not merely about filling positions; they are integral to building a workforce that can adapt to technological shifts and drive long-term success. The fact that closing skill gaps presents long-term issues is a clear indication of the need to be ahead when recruiting for organizations in order for them to get the best IT talent to respond to the dynamic IT environment.

2.2 Relevance of The Person-Organization Fit Theory

The Person-Organization Fit (P-O Fit) theory helps formulate efficient recruitment strategies, especially in IT. This theory focuses on an individual's values, goals, and behavior and their match with the organizational culture, values, and objectives (Venkatesh et al., 2017). Lack of culture-fit and subsequent clashes become very damaging for industries that are professions of knowledge, such as information technology, where innovation, flexibility, and adaptability are the key requirements. According to the P-O Fit theory, the effectiveness of the recruitment strategies is a way beyond looking at the level of technical skill. It entails a more rigorous assessment of the organization's compatibility with candidates' work attitudes, communication profiles, and organizational cultures, for instance, their work ethic, communication style, and orientation to organizational values (Wuryaningrat et al., 2019). To this effect, organizational culture plays a vital role in employees' organizational commitment, job satisfaction, and performance. This coordination is relevant, especially in the IT industry, because of the dynamism in the field and the learning culture that budgets for teamwork. By focusing on P-O Fit, organizations can enhance their recruitment processes to identify candidates who meet technical requirements and share the organization's values and vision. The linking also leads to lower turnover, increased employee morale, and enhanced organizational performance. In the context of the IT sector, professional talent management, where attrition rates of skilled talent prevail, enhancement of P-O Fit during recruitment processes, therefore, results in a more sustainable human capital development for the organization and, consequently, a strong organizational culture (Xu & Lu, 2022). Thus, it is noteworthy that the P-O Fit theory supports the associated technical and cultural aspects while using recruitment for long-term performance.

2.3 Recent Advancements in Recruitment Strategies

Recent advancements in recruitment strategies, particularly in leveraging AI and automation, have significantly evolved since 2021, reflecting the rapid pace of technological innovation in the IT sector. For instance, advanced AI-powered tools such as generative AI and machine learning models for resume screening and candidate assessment have gained prominence. These tools expedite the recruitment process and enhance the precision of talent matching by analyzing complex datasets that include skills, cultural fitness, and behavioral traits (Pan et al., 2023). Similarly, advancements in natural language processing have enabled more sophisticated chatbot interactions, providing candidates with an engaging and responsive recruitment experience. Moreover, gamification techniques have been redefined to include augmented and virtual reality simulations, allowing candidates to participate in immersive tasks that test real-world problem-solving skills relevant to specific IT roles. This approach assesses technical proficiency and provides insights into a candidate's adaptability and innovative thinking. Social media platforms have also integrated predictive analytics and

sentiment analysis tools, enabling recruiters to understand candidate motivations and preferences better, thus fine-tuning their engagement strategies.

These advancements address previously identified gaps by focusing on real-time adaptability, scalability, and inclusivity in recruitment strategies. However, their adoption varies across organizations and regions, often constrained by resources, regulatory environments, and technological maturity. Incorporating these developments into recruitment strategies could significantly mitigate skill shortages in the IT sector while offering a competitive edge in talent acquisition.

3. Methods

3.1 Research Design

This study employed a systematic literature review (SLR) as the primary research methodology. The SLR was used because of its scientific and biased method that selectively appraises and integrates the available literature on a particular subject of interest. This method was particularly appropriate for the study because it enabled the researcher to undertake a content analysis of literature on recruitment patterns in IT employment organizations, particularly those targeted at filling skills deficits. The SLR also made logical sense because it involved a coherent, sequential approach that synthesized information from numerous studies to identify the recruitment strategies' effectiveness and how these have changed, with empirically grounded evidence.

The rationale for employing an SLR was to reduce bias, especially in getting more reliable research results. An advantage of the SLR over a regular literature review is that this kind of review followed the selection protocol of pure scientific significance, which allowed the inclusion of all the available studies on the researched topic without a hint at bias. In addition, it also enabled the systematic mapping of the findings. As such, the systematic analysis elucidated the existing patterns, trends, and gaps by offering an overview of the existing body of knowledge. Because the prior literature in this stream of research is quite dispersed, the SLR was useful for extracting the implications out of numerous studies across various organizational contexts and thus, identifying the most effective practices that can be used in a wide range of organizations in the IT sector.

While the SLR methodology ensures rigor and minimizes bias, potential limitations remain. Publication bias may skew findings toward studies with positive results, and excluding non-English research limits geographic diversity. Additionally, reliance on specific databases could overlook relevant studies housed elsewhere. The review employed diverse search terms, Boolean operators, and clearly documented inclusion criteria to mitigate these. Future studies could address these limitations by incorporating broader linguistic and geographic sources.

The study selection, inclusion, and exclusion criterion used in this systematic literature review reflects the following objectives of the research. All the articles from academic databases, Conference proceedings, Industry reports, and journals where available were obtained by searching databases and search engines. Some databases include Taylor and Francis, Wiley Online Library, and Science Direct. These databases were chosen because they indexed many IT research and contain peer-reviewed articles from scholarly sources.

The search strategy involved the use of specific search terms relevant to the research topic, including "IT sector recruitment", "skill gaps", "talent acquisition", "hiring strategies", "digital skills shortage", "recruitment best practices", "workforce development in IT", "overcoming skill shortages", "employer branding in IT", and "IT sector talent management". Boolean operators (AND, OR) combined these terms and refined the search results. The search

was conducted across the title, abstract, and keywords of articles to ensure that all relevant studies were captured.

3.2 Inclusion and Exclusion Criteria

Specific inclusion and exclusion criteria were applied to ensure the relevance and quality of the studies included in the review. These criteria were as follows:

3.2.1 Inclusion Criteria

- Only research works that were published within 10 years or within the year 2014-2024 were considered. This period was selected only to get an overview of the current trends and practices in recruitment as this is a dynamic field, mainly due to the tempest speed at which change occurs in the IT industry.
- The review only embraced empirical studies, which may be quantitative, qualitative, or even mixed-method research, as well as case studies. Recruitment research offered quantitative data on recruitment practices, and recruitment cases gave qualitative analyses of the organization's practices.
- The collected studies were limited to those that have been published in the English language only. This criterion was used because the researcher speaks English fluently, and most of the published articles and reports in the field of the study are in English.
- Only the academic researchers had to address the issue strictly within the IT sector by briefly elaborating the measures to tackle the skill mismatch problem in the course of recruitment. Additional articles focusing on general recruitment and general skill training approaches were only considered if they held information applicable to the context of the IT sector's skill gap.

3.2.2 Exclusion Criteria

- Opinion pieces, editorials, and non-peer-reviewed articles were excluded to ensure the credibility and academic rigor of the review.
- Studies published in languages other than English were excluded to maintain consistency in language proficiency.
- Studies published before 2014 were excluded to focus on contemporary recruitment strategies and the evolving nature of skill gaps in the IT sector.

3.3 Search Process

The search process involved identifying 511 records through database searching, with 98 duplicate records removed prior to screening. The remaining 413 records were screened by title and abstract, leading to the exclusion of 167 records. A total of 246 reports were sought for retrieval, of which 49 could not be retrieved. The 197 full-text articles assessed for eligibility resulted in 183 exclusions: 111 for not meeting inclusion criteria, 42 for being unrelated to recruitment strategies, and 30 for other reasons. Ultimately, 14 studies were included in the final review.

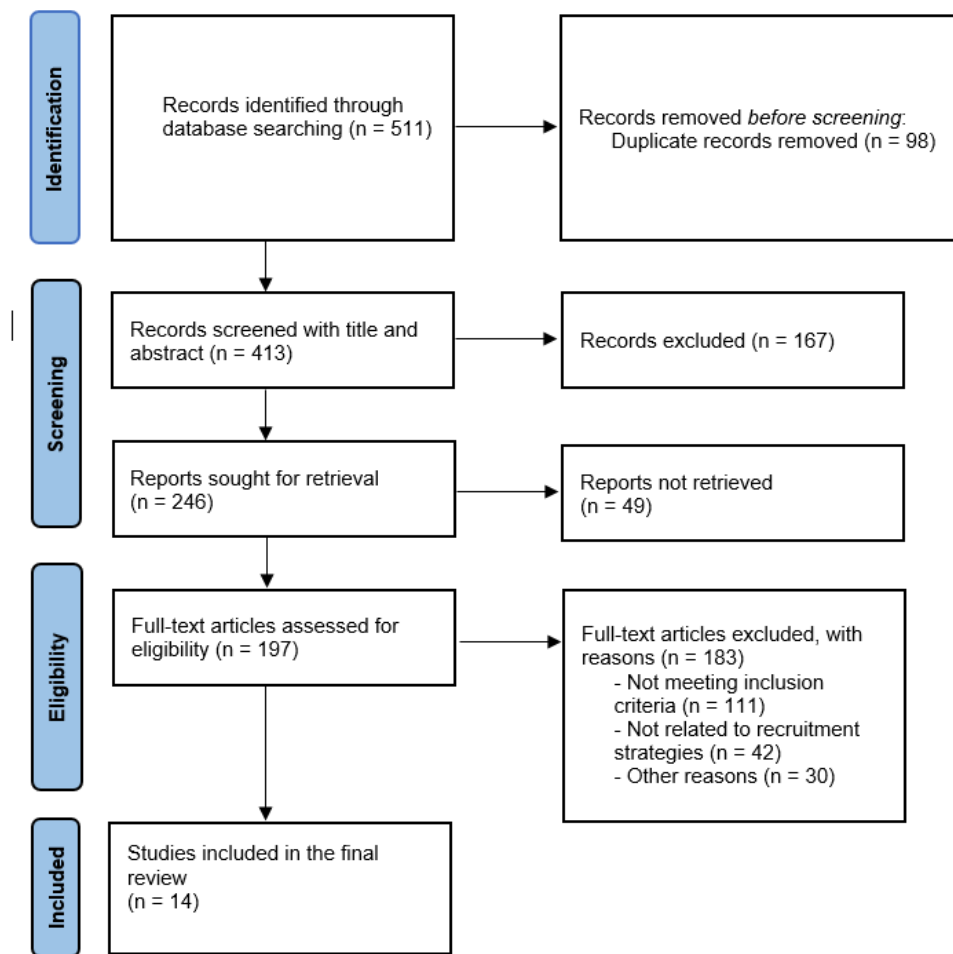


Figure 1. The search process for the reviewed articles

3.4 Data Extraction and Synthesis

The extraction of more data from the selected studies was systematic and was done consistently. A data extraction table was designed with the following fields: article title, authors list, year of publication, study design, recruitment strategies used, and key findings. This standardized approach made it possible to document all the relevant data without compromising their comparability, and it also allowed for the synthesizing of comparable data across the studies. The approach to synthesizing findings involved both thematic analysis and content analysis. To analyze the results of the survey, recruitment strategies, and those participants missing one or many skills required for their job, thematic analysis was used to look for similarities. These themes were then organized into larger categories that corresponded with the study's research questions. Quantization was also used in content analysis to determine how often particular recruitment strategies were used and were effective. Recruitment strategies and their effectiveness analysis process also involve synthesizing inter-contextual comparison of the findings ranging from geography, size of organization, and the sub-sector in Information technology.

4. Results

The review of selected studies highlights diverse recruitment strategies implemented to address skill gaps across various sectors. For instance, Doerschuk et al. (2016) demonstrated the effectiveness of a multidisciplinary program in recruiting, retaining, and transitioning at-risk students into STEM careers, thereby addressing gaps in higher education. Similarly, Hurrell and Scholarios (2014) emphasized the importance of aligning recruitment with person-brand fit to reduce social skills gaps in service organizations. In the context of e-recruitment, Kissi (2023) explored factors influencing job seekers' satisfaction, identifying expectations, perceived performance, and fraud as critical determinants. Lyu and Liu (2016) also underscored the prioritization of hard skills over soft skills in the energy sector's recruitment practices, reflecting sector-specific demands. The integration of technology into recruitment processes is a recurring theme across the studies. Allal-Chérif et al. (2021) and Pan et al. (2021) explored AI adoption in recruitment, with the former focusing on its global applicability and the latter on contextual factors influencing AI adoption. Rukadikar and Khandelwal (2024) examined the use of chatbots in recruitment, emphasizing the need for strong data protection and communication strategies. Gamification, as discussed by Saeed et al. (2015), was proposed as a tool to bridge the skills gap in the UAE job market by aligning educational choices with market demands. Finally, the analytical review by Okolie and Irabor (2017) highlighted the benefits and challenges of e-recruitment, while van Esch et al. (2019) stressed the importance of marketing AI-enhanced recruitment to attract candidates with positive perceptions of technology. These findings collectively illustrate the evolving landscape of recruitment strategies aimed at mitigating skill gaps in the IT sector and beyond.

Table 1. Data Extraction Table

Authors	Study Type	Research Objectives	Recruitment strategy	Key Findings
Peggy et. al	Multidisciplinary Program Evaluation	To address the growing demand for STEM professionals by recruiting, retaining, and transitioning undergraduates to STEM careers.	Multidisciplinary program focusing on recruiting, retaining, and transitioning at-risk students in STEM.	The program successfully contributed to closing the gaps in higher education in Texas by focusing on at-risk students.
Scott A. Hurrell, Dora Scholarios	Case Study	To examine people management practices that enhance person-brand fit and reduce social skills gaps in service organizations.	Recruitment and selection around person-brand fit.	Hotels with fewer social skills gaps achieved better person-brand fit through targeted recruitment and employee agency.
Scott A. Hurrell	Case Study	To investigate the soft skills gap and the possibility of skills withdrawal due to employee disaffection.	Contextual integration of selection, induction, and training practices with skills needs.	Organizations may be at fault for soft skills gaps if they do not integrate HR practices with skills needs.
Philip Siaw Kissi	Longitudinal Cohort Study	To identify factors affecting job seekers' satisfaction	E-recruitment system evaluation	Expectations, perceived performance, and fraud influence job seekers'

		with e-recruitment systems.	based on job seeker satisfaction.	satisfaction with e-recruitment.
Wenjing Lyu, Jin Liu	Data Analysis of Job Postings	To analyze skill requirements in the U.S. energy sector with a focus on soft and hard skills.	Emphasizing the importance of 'hard' skills over 'soft' skills in energy sector recruitment.	'Hard' skills like products and marketing are more valuable in the energy sector despite the increasing demand for 'soft' skills.
Yioula Melanthiou, Fotis Pavlou, Eleni Constantinou	Exploratory Investigation	To explore the use of social media in recruitment processes and its impact on hiring.	Use of social media to attract and screen applicants.	Social media in recruitment offers both benefits and risks, including legal implications.
Oihab Allal-Chérif, Alba Yela Aránega, Rafael Castaño Sánchez	Multiple Case Study	To analyze how digital technologies improve recruitment processes, including identification, selection, and retention of talent.	Use of AI and digital technologies like social networks, gamification, and chatbots in recruitment.	Digital technologies improve recruitment but require careful integration to avoid 'uberization' of recruitment.
Yuan Pan, Fabian Froese, Ni Liu, Yunyang Hu, Maolin Ye	Survey	To understand the factors influencing AI adoption in employee recruitment.	AI adoption in recruitment is influenced by perceived complexity, technology competence, and regulatory support.	AI adoption in recruitment is facilitated by technology competence and regulatory support but hindered by perceived complexity.
Aaradhan a Rukadikar, Komal Khandelwal	Qualitative Research Design	To explore the experiences and challenges of integrating chatbots into the hiring process.	Chatbot integration in recruitment focuses on communication, privacy, and organizational culture.	Chatbots are effective in recruitment but require strong data protection and communication strategies.
Hanan Abdullah Mohammed Saeed, Sobia Younis Younis, Dr. Chowdhury Golam Hossan	Qualitative Study	To introduce gamification in recruitment strategies to bridge the skills gap in the UAE job market.	Gamification of recruitment processes to align high school students' education with market demands.	Gamification can influence high school students' educational choices to better align with job market demands.
Ugo Chuks Okolie, Ikechukwu Emmanuel Irabor	Analytical Review	To analyze the overall trends in e-recruitment use and practice, and to list the opportunities and challenges faced by job seekers and employers.	E-recruitment involves the use of internet-based platforms to post jobs, accept resumes, and communicate with applicants.	E-recruitment offers cost-effectiveness, speed, and customization but also presents challenges. The trend is expected to continue expanding, and organizations should adapt to enhance their recruitment processes.
Patrick van Esch, J. Stewart	Empirical Study	To investigate how potential candidates regard the	AI-enhanced recruitment involves using	Positive attitudes towards AI in recruitment processes increase the

Black, Joseph Ferolie		use of AI in recruitment and how it influences their likelihood to apply for jobs.	artificial intelligence to manage job applications and selection processes.	likelihood of job application. Organizations should highlight their use of AI to attract candidates who have positive views of both the organization and AI.
J. Gregg Whittaker, Gerald Williams	Theoretical Analysis	To explain the economic analysis of the skills gap and to explore solutions for aligning education and market needs.	Addressing the skills gap through strategic collaboration between academia and industry.	A systemic disconnect between higher education and market needs perpetuates the skills gap. Addressing this requires alignment between academic institutions and private-sector businesses to create job-ready professionals.
Joseph et al.	Content Analysis	To empirically examine the 21st-century skills employers demand through job advertisements.	Analyzing job advertisements to identify critical skills for workplace success.	Oral and written communication, collaboration, and problem-solving are in high demand. Some skills, such as social responsibility, are rarely mentioned, indicating a mismatch between academic focus and employer demand. This has implications for educational standards.

5. Discussion

The systematic literature review conducted in this study provides critical insights into the recruitment strategies that organizations in the IT sector can adopt to address skill gaps. To translate these findings into actionable strategies, organizations should integrate AI-powered screening tools with traditional human resource assessment methods to create a hybrid recruitment model that enhances both efficiency and accuracy. Moreover, businesses should invest in predictive analytics to anticipate skill shortages and proactively address them through targeted training programs. Academic institutions, on the other hand, must prioritize continuous curriculum adaptation based on real-time industry feedback, ensuring that graduates possess skills aligned with emerging job market demands. Collaborative partnerships between industry and academia can help bridge the gap through structured internships, certification programs, and industry-sponsored research initiatives. As highlighted in the literature, the IT sector is characterized by rapid technological advancements and a dynamic market environment. This collectively exacerbates the challenge of skills mismatches. The findings reveal the truth about the strategic practices that organizations should employ in their recruitment processes based on technical requirements and organizational culture. It will be necessary for this discussion to critically discuss and explain the key themes sourced from the literature, and also critically evaluate various recruitment strategies and their implications for academia and industry.

5.1 Key Themes

Several key themes were formulated from the review to provide a clear understanding of the recruitment challenges and strategies within the IT sector. The skills gap remains a persistent issue, as Adewusi et al. (2024) argued that it is driven by the fast pace of

technological change and the lag in corresponding educational and training programs. The gap between skill supply and demand currently being experienced is worse where specific specialties are concerned. Specialties that are produced and graduated from most educational institutions and universities and those that are required in the job market today, especially in the tech-industrial sector including cybersecurity, data science, and artificial intelligence, according to Rios et al. (2020). This challenge is compounded by global competition for IT talent, which further strains the availability of skilled professionals in certain regions.

The theme of recruitment innovation is important, justifying that traditional methods, such as job postings and campus recruitment, are insufficient in overcoming skills gaps during the recruitment of personnel in the IT sector. Allal-Chérif et al. (2021) noted that organizations in the contemporary business domain are searching for new strategies to recruit and retain IT talents. Such methods include the use of AI, social media, and gamification. Black et al. (2019) explain that these strategies enhance the recruitment process by raising the selection quality when searching for both qualification and synchronous value, which has been shown to increase the effectiveness of working teams (Hussain et al. 2024).

The relevance of human capital theory in recruitment strategies was evident across various studies in this systematic literature review. In Kolomiiets and Petrushenko's (2017) study, the theory focuses on an argument that employees' knowledge, skills, and abilities are relevant to organizational performance. Unlike in most industries, changes in technology are rapid in the context of the IT sector. Therefore, firms that are able to attract and maintain talented personnel in their employment benefit from such a competitive advantage. The fact that human capital is paramount points to the fact that learners within organizations must update their human capital frequently.

Lastly, the P-O Fit theory significantly affects the recruitment strategy. The conformance between a candidate and organizational culture of values, objectives, and behaviors is a long-term match. This alignment is noticeable in IT organizations whose operations rely on Innovation, flexibility, and adaptability to perform better, as seen in Hurrell and Scholarios's (2014) study. P-O Fit in the recruitment processes especially helps not only in the reduction of turnover but also in the enhancement of productivity as a result of good working relationships.

5.2 Evaluation of Recruitment Strategies

The findings of the literature review show different recruitment techniques adopted by firms in the IT industry and the level of their efficiency. Among these, the use of AI and digital technologies in recruitment stands out as particularly impactful. AI-powered tools, such as chatbots, automated screening systems, and predictive analytics, enable organizations to streamline recruitment, identify top talent more efficiently, and reduce biases (Pan et al., 2021). These technologies also bring about a higher degree of candidate interaction, which can increase an organization's appeal to the candidates. However, using AI in recruitment has its challenges, as pointed out by Okolie and Irabor (2017). As highlighted by Rukadikar and Khandelwal (2024), data privacy, risk of algorithmic bias, and regulatory requirements must be well controlled to enable proper and ethical recruitment.

Social media platforms have also become an important component of modern recruitment strategies. They offer organizations the ability to engage with potential candidates more formally and directly. A good instance is the use of social media because not all job seekers will actively seek jobs, yet they are willing to consider any employment opportunities (Melanthiou et al., 2015). However, to be successful, social media recruitment differs from region to region and sector of business.

Gamification in recruitment is another innovative approach that has gained traction in recent years. Some of the practical benefits of the presented approach to recruitment include following positive influences on the organization of the recruitment process and young candidates, especially from millennial and Gen Z groups. Saeed et al. (2015) mentioned that gamification can also test problem-solving skills, imagination, and flexibility. Although a promising approach, it is imperative that the process of gamification is done in a manner that will make it reflect the skills and competencies necessary for the execution of the job.

Traditional recruitment methods remain relevant, particularly regarding their ability to build long-term relationships with educational institutions. Alliances with universities and technical schools can help an organization shape its curriculum, offer internships, and view talent pipelines as defined below. Such collaborations are particularly helpful in bridging the skills gap as much as graduates are produced with the competency required in the market (Whittaker & Williams, 2016). However, such partnerships' success highly depends on educational programs' ability to match technological demands. This is most often a herculean task in the current world due to the dynamism of technological development.

5.3 Implications for Academia and Industry

The current study's contribution to the existing literature and its practical applications for businesses are discussed in this section of the paper. For academic institutions, the persistent skills gap in the IT sector highlights the need for curricula that are closely aligned with industry requirements. This alignment demands changes to course content on a timely basis, integration of new technologies, and modification of soft skills to merge with a student's specific subject expertise (Lyu & Liu, 2021; Hurrell, 2016). Also, following Doerschuk et al. (2016), academics should enhance their links with industry for internships, co-op, and project-based learning and practice opportunities for the students.

The study also has implications for the practitioners in the human resource management industry. Managers have to keep in mind the compatibility with the company culture and personality, as well as the compatibility of the candidate in the long-term perspective, which cannot be predicted, especially if we speak about the IT industry as a field in constant development. Furthermore, incorporating AI and digital tools into recruitment processes is a way to enhance talent acquisition since they are legal as long as they are applied correctly. The study also argues that organizations should continue to be flexible when it comes to the ways they use to recruit employees. As a result, there is a consistency of changes that define the experience towards talent acquisition in the IT segment. This agility can be achieved through performance tracking of recruitment results, cycling of recruitment processes, and integrating comments from candidates and workers (Kissi, 2023). Moreover, organizations should invest in ongoing training and development programs to upskill their existing workforce, thereby reducing the dependency on external recruitment to fill skill gaps.

A key implication of this study is the critical need for stronger alignment between academic curricula and industry demands, particularly in addressing the rapid evolution of technological skills required in the IT sector. For organizations in the IT sector, an effective strategy to address skill shortages is the establishment of talent incubation programs, where potential candidates undergo targeted training before official hiring. This approach not only reduces onboarding time but also ensures a steady supply of job-ready professionals. Companies should also consider implementing adaptive learning systems that offer employees ongoing reskilling opportunities in response to evolving technological trends. For academia, integrating competency-based education models—where students advance based on demonstrated skills rather than fixed timelines—can better prepare graduates for industry-specific demands.

Furthermore, universities should develop interdisciplinary programs that combine IT expertise with business acumen, enhancing graduates' adaptability and employability. Academic institutions must proactively update curricula to reflect emerging trends in cybersecurity, data science, and artificial intelligence. This alignment requires collaboration between academia and industry to co-design programs that integrate technical expertise with soft skills, ensuring graduates are both job-ready and adaptable to industry changes. On the recruitment side, the findings underscore the value of integrating modern technologies to enhance talent acquisition. AI-driven tools, such as predictive analytics and chatbots, streamline the recruitment process, offering efficiency and precision in candidate selection. Additionally, gamification provides a creative avenue for assessing problem-solving and innovation skills, particularly appealing to millennial and Gen Z candidates. Social media platforms further complement these methods by enabling organizations to connect with passive candidates and build employer brands in real-time.

The actionable strategies proposed in this review advocate for a hybrid approach that combines traditional methods, like university partnerships, with cutting-edge technologies. By adopting this multifaceted approach, organizations can more effectively bridge the skills gap while fostering a sustainable talent pipeline to meet the dynamic demands of the IT workforce.

Ultimately, the findings highlight the importance of strategic recruitment innovations tailored to the needs of a rapidly evolving IT workforce. To ensure effectiveness, organizations should adopt a multi-faceted recruitment approach that blends AI-driven processes, employer branding via social media, and gamification-based assessments. Additionally, businesses and educational institutions must prioritize lifelong learning initiatives, where employees and students alike continuously develop new competencies to keep pace with industry demands. These strategies, if implemented holistically, will contribute to a more resilient and future-ready IT workforce, capable of driving sustained innovation and economic growth.

6. Conclusion

The systematic literature review focuses on the recruitment strategies that may help solve the issue of skills deficit in the IT field. The areas of focus, Skills shortage, Recruitment creativity, Human capital theory, and P-O Fit provide a good understanding of the strategies and problems in acquiring and maintaining skilled IT staff. The analysis of the effectiveness of the approaches employed in the recruitment process reveals new solutions that can be applied in this field, such as AI, social networks, and gamification while also acknowledging the usefulness of traditional techniques. Thus, the implications for academia and industry suggest that a collaborative and adaptive approach is essential for bridging the skills gap and sustaining the growth and innovation of the IT sector. With the future of the sector so uncertain, it is clear that the approaches taken to source and cultivate the people behind the sector must also change.

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