



THE GIG ECONOMY AND AUTOMATION: IMPLICATIONS FOR HUMAN RESOURCE
MANAGEMENT IN PAKISTAN

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Abstract

In the face of ground-breaking advancements such as automation, artificial intelligence, and the gig economy, the realm of human resource management (HRM) is undergoing a profound transformation. As the nature of work evolves, HRM practices must adapt to ensure both organizational performance and employee well-being. A primary focus of the study is the increasing emphasis on workforce flexibility. The rise of remote work, flexible schedules, and contingent labour has necessitated a shift in HRM practices. This research explores how organizations can effectively manage a diverse workforce while maintaining productivity and employee satisfaction. Additionally, the study examines the impact of job changes, including automation-driven task shifts and the emergence of new roles. It investigates how HR professionals can assist employees in adapting to these changes and acquiring the necessary skills for the future of work. Ethical considerations are also a central theme of this research. With the rise of AI and automation, questions surrounding data privacy, algorithmic bias, and ethical decision-making in the workplace have become increasingly pressing. The study explores the ethical implications of these technologies and provides guidance for HR professionals on developing ethical policies and practices. This research study underscores the critical role of HRM in fostering a productive and supportive work environment. It highlights the need for HR professionals to be strategic partners with business leaders, aligning HR practices with overall organizational goals. By understanding the challenges and opportunities presented by these revolutionary developments, HR professionals can equip their organizations to navigate the complexities of the contemporary workplace and achieve long-term success. This research offers a valuable resource for HR professionals, business executives, and policymakers seeking to understand the changing landscape of HRM and develop effective strategies for managing their workforce in the face of technological advancements and evolving workforce dynamics.

Keywords: Artificial Intelligence, Automation, Gig economy, Freelancers, Remote work



1. Introduction

Numerous academics have examined the ongoing and reciprocal link between human resource management (HRM) practices and organisational success throughout the years. The workforce is undoubtedly expanding and changing in tandem with organisations' restructuring of HRM responsibilities. This is due to a range of factors, including shifting career orientations, labour market dynamics, and technology improvements (Chompupor, 2023). The labour market and how individuals execute their jobs are changing due to new forms of employment, which has significant implications for how they are established and handled. Understanding how our stakeholders, the workforce, benefit from the evolving nature of work has received very little attention up to this point (Chintaradeja, 2022). In light of this, the current study aims to examine how HRM practices are affected by new developments like as automation, artificial intelligence, and the gig economy.

This research study focuses on the different steps that recent HRM practices should follow to reduce the possible risks by understanding job transformations through automation and artificial intelligence (AI) to retain the flexible work environment for the buy-in of millennials, and to minimize exploitation through the choice of alternatives; to secure the buy-in and flexibility of the workers and ensure that jobs are of reasonable and good quality, allowing workers to climb up the productivity chain. Throughout the last years, HRM has notably increased its attention on the people that shape the firms. As businesses expand and shift their priorities, there are an increasing number of HRM strategic plans that are mostly driven by outside forces. HRM functions now play a more crucial role in the plans they develop, thus they must perform to the highest standards possible. As a practice and as a business, HRM is not only planned at the highest level of responsibility but is also acknowledged as a crucial component of corporate strategy that is treated with relevance, according to data presented over the past few years.

2. Background of HRM in Pakistan

The evolution of Human Resource Management (HRM) in Pakistan has been a journey influenced by various factors, including cultural, economic, and political developments. While the concept of managing human resources has existed for centuries, its modern form in Pakistan can be traced back to the late 20th century.

Before the 1970s, organizations in Pakistan largely followed traditional personnel management practices. This involved basic administrative tasks such as recruitment, selection, and payroll. The nationalization wave of the 1970s led to a significant shift in the business landscape. Many private enterprises were brought under government control, resulting in a more bureaucratic and centralized approach to human resource management (Saher & Mayrhofer, 2014).

The economic liberalization policies introduced in the 1990s marked a turning point for HRM in Pakistan. As the country opened up to global markets, organizations faced increased competition and recognized the importance of effective human resource management. During this period, Pakistani companies began adopting international HRM practices, such as performance management systems, employee training and development programs, and compensation and benefits packages. Universities and business schools started offering specialized courses and programs in HRM, contributing to the development of a pool of qualified HR professionals (Ali & Niaz, 2024; Mangi et al., 2012).



Pakistani culture, characterized by collectivism and family-oriented values, can present unique challenges for HRM practices. Balancing individual needs with organizational goals is often a complex task. Economic instability and fluctuations can impact HRM practices, leading to issues such as job insecurity and limited investment in employee development. The regulatory framework governing labour relations and employment practices in Pakistan can be complex and subject to change. HR professionals must navigate these regulations to ensure compliance and protect the interests of both the organization and its employees. Attracting and retaining top talent remains a significant challenge for many Pakistani organizations, especially in sectors with high demand for skilled professionals.

Despite these challenges, HRM in Pakistan has made significant strides in recent years. Organizations are increasingly recognizing the strategic importance of human capital and are investing in initiatives to create a positive and productive work environment. As the country continues to develop and modernize, the role of HRM in driving organizational success will only become more critical.

The drastic changes that are drastically changing the economic environment and foundation have not spared Pakistan's human resource practices. Pakistan must follow these techniques in order to stay competitive given the globalised nature of these developments' influence. Emerging trends like automation, AI, and the gig economy are changing HRM and presenting businesses with opportunities as well as challenges to maintain their positions. Pakistan's HRM falls behind that of nations where the workplace is being severely affected by the drastic changes brought about by these trends, forcing companies to rethink and reshape their HRM policies and practices.

The current study examines the implications of trends like automation, artificial intelligence, and the gig economy on HRM practices in Pakistan. The nature of these trends generally cuts across the globe, and as such, it also influences the working conditions and labour practices in Pakistan. Despite the possibility of any differential effects across companies in Pakistan, no empirical evidence is presently available in terms of how these automation-induced changes are facilitating shifts in HRM practices at the firm or industry level.

This study aims to fill this knowledge gap by devising a typology of HRM implications of AI or introducing automation within Pakistan. Although most studies argue that many HRM functions will be influenced by AI in various ways, our examination of how and in which areas HRM bellwethers such as employment, selection and recruitment, management and coaching, performance evaluation, and voluntary engagement/retention are affected looks at the rich features and often distinct impacts of digital technologies, suggesting important dimensions for HRM-related research and practice.

2.1 Automation

The spectre of automation, once a distant concern, is now a tangible reality, casting its long shadow over industries worldwide. Automation, the use of technology to perform tasks traditionally done by humans, is transforming the way we work, from manufacturing to customer service.

Efficiency soars, costs plummet, and accuracy improves as machines take on repetitive and mundane tasks. Yet, this transformation comes at a cost. The spectre of job displacement looms large, raising concerns about the future of work and the skills needed to navigate this new landscape.



Robotic Process Automation (RPA): Software robots, these digital workers, tirelessly automate repetitive tasks, such as data entry and processing. They free human workers from the drudgery of mundane tasks, allowing them to focus on more strategic and creative endeavours.

Artificial Intelligence (AI): AI, the pinnacle of technological advancement, empowers machines to automate even more complex tasks, including decision-making and problem-solving. AI-powered systems can analyse vast amounts of data, identify patterns, and make informed decisions, revolutionizing industries from healthcare to finance.

Industry 4.0: The convergence of automation and technology across the manufacturing process is ushering in the era of Industry 4.0. Smart factories, equipped with interconnected machines and sensors, optimize production, reduce waste, and enhance quality. This transformation is reshaping the manufacturing landscape, demanding a new breed of workers with skills in data analysis, robotics, and digital technologies (Iqbal et al., 2020; Tanoamchard & Ceienwattanasook, 2024; Ungureanu, 2019).

As automation continues to advance, the workforce must adapt. The days of relying on manual labour are dwindling, giving way to a future where human-machine collaboration is the norm. Upskilling and reskilling become paramount, as workers must acquire new competencies to remain relevant in the face of automation (Malik et al., 2020).

The future of work is uncertain, but one thing is clear: automation is here to stay. Embracing this transformation, embracing the opportunities it presents, and equipping the workforce with the necessary skills will be crucial for navigating this new era and ensuring a prosperous future for all.

2.2 Artificial Intelligence

The spectre of artificial intelligence, once confined to the realm of science fiction, has become a tangible reality, casting its long shadow over the global landscape. AI, the ability of machines to learn and perform tasks that once required human intelligence, is transforming industries, revolutionizing the way we live and work. From healthcare and finance to transportation and customer service, AI is making its presence felt in every corner of society. Machine learning, the cornerstone of AI, empowers machines to learn from data, improving their performance over time. This enables AI systems to adapt to new situations, identify patterns, and make informed decisions.

Natural language processing (NLP) bridges the gap between humans and machines, allowing AI systems to understand and respond to human language. This has far-reaching implications, from virtual assistants that can answer our questions to language translation software that breaks down communication barriers (Alizai et al., 2021; Asif et al., 2023; Darkwa et al., 2024; De Stefano, 2020; Khan, 2023b; Nimmagadda et al., 2024).

Computer vision, the ability of machines to interpret and understand visual information, is another key trend in AI. AI-powered systems can analyse images and videos, identifying objects, recognizing faces, and even diagnosing diseases. This technology is transforming industries such as healthcare, manufacturing, and autonomous vehicles (Alizai et al., 2021; Darkwa et al., 2024; Mirza & Rashid, 2024; Tanoamchard & Ceienwattanasook, 2024).

As AI continues to evolve, its impact on society will only deepen. The potential benefits are immense, from improving healthcare outcomes to enhancing productivity and efficiency. However, the rise of AI also



raises concerns about job displacement, privacy, and ethical implications. Navigating this new era of AI will require a delicate balance between harnessing its potential and mitigating its risks. By investing in research and development, developing ethical guidelines, and preparing the workforce for the future of AI, we can ensure that this powerful technology benefits society as a whole (Alizai et al., 2021; Asif et al., 2023; Darkwa et al., 2024; De Stefano, 2020).

2.3 Gig Economy

The gig economy, a burgeoning trend reshaping the global workforce, is characterized by short-term, flexible work arrangements. Freelancers, independent contractors, and on-demand workers are increasingly replacing traditional full-time employees, driven by technological advancements, changing workforce expectations, and the desire for greater flexibility.

Platform-based work, the cornerstone of the gig economy, connects workers with jobs through online platforms. From ride-sharing services like Uber and Lyft to task-based platforms like Task Rabbit, these platforms offer a convenient way for individuals to find work and for businesses to access talent on demand (Adams-Prassl, 2019; Ishfaq et al., 2022; Khatun, 2023; Mirza & Rashid, 2024).

Freelancing, a long-standing practice, has gained new prominence in the gig economy. Freelancers work on a project-by-project basis, often for multiple clients, offering businesses flexibility and cost-effectiveness. This arrangement also allows freelancers to maintain control over their work schedules and choose projects that align with their interests and expertise (Adams-Prassl, 2019; Chompupor, 2023; Inyang et al., 2024; Mumtaz et al., 2023; Nimmagadda et al., 2024).

Remote work, another hallmark of the gig economy, enables employees to work from locations other than a traditional office, often using technology to connect with their team mates. This trend has been fuelled by advancements in communication and collaboration tools, as well as a growing desire for work-life balance (Asif et al., 2022; Aurangzeb et al., 2021).

While these trends offer significant opportunities, such as increased flexibility and work-life balance, they also present challenges. Job insecurity, income inequality, and the lack of traditional benefits are among the concerns associated with the gig economy. Moreover, the changing nature of work requires new policies and regulations to address the needs of gig workers and ensure a fair and equitable workplace. As the gig economy continues to evolve, it is essential to strike a balance between embracing its benefits and addressing its challenges (Pasha et al., 2019; Rabbani & Bashir, 2022). By fostering a supportive environment for gig workers, providing access to training and resources, and implementing appropriate regulations, we can harness the potential of the gig economy to create a more flexible, innovative, and equitable workforce.

3. Current State in Pakistan

Pakistan, like many nations worldwide, is undergoing a technological renaissance. Automation, the gig economy, and artificial intelligence (AI) are reshaping the landscape, transforming industries and creating new opportunities.

Automation, once a distant concept, is now a tangible reality. Manufacturing plants are buzzing with robotic systems, assembling products with precision and efficiency. Banks have embraced AI-powered chatbots, providing round-the-clock customer service and detecting fraudulent transactions.



Telecommunications networks are managed by intelligent systems, optimizing performance and ensuring seamless connectivity (Mushtague et al., 2021; Saqlain et al., 2023).

The gig economy, a burgeoning trend, is offering individuals the flexibility to work on short-term projects and freelance assignments. Platforms like Careem, in-Drive, Uber, and other online platforms have connected workers with opportunities, while freelance marketplaces have empowered individuals to showcase their skills and find clients.

Artificial intelligence, the pinnacle of technological advancement, is making its presence felt in various sectors. From healthcare diagnostics to agricultural solutions, AI-powered systems are revolutionizing the way we live and work. Pakistani researchers and entrepreneurs are at the forefront of this AI revolution, developing innovative applications and contributing to the global knowledge base (Sumbal et al., 2024).

However, this technological transformation is not without its challenges. Job displacement, digital divide, and ethical concerns are among the issues that need to be addressed. Ensuring a just and equitable transition to the digital age requires careful planning, policy reforms, and investment in education and training (Ali et al., 2024).

As Pakistan navigates this technological landscape, it is essential to embrace the opportunities and mitigate the risks. By investing in research and development, fostering a supportive ecosystem for innovation, and addressing the challenges head-on, Pakistan can position itself as a leader in the digital age.

3.1 Automation in Pakistan

The spectre of automation, once a distant concern, is gradually taking root in the Pakistani landscape. While still in its infancy compared to developed nations, automation is making inroads into various sectors, reshaping the way businesses operate and paving the way for a more efficient and technologically advanced future.

Manufacturing, the backbone of the Pakistani economy, is witnessing a transformative shift. Robotic systems are being deployed in some manufacturing plants, automating tasks such as assembly and packaging. These machines, with their tireless efficiency and precision, are enhancing productivity, reducing costs, and improving product quality.

The banking sector, too, is embracing automation. Banks are leveraging technology to streamline processes, from customer service to fraud detection. Automated systems can handle routine inquiries, detect fraudulent transactions, and even process loan applications, freeing up human employees to focus on more complex and value-added tasks.

Telecommunications, a vital industry in Pakistan, is also undergoing an automation revolution. Network management, customer support, and billing are increasingly being automated, improving service efficiency and reducing operational costs. AI-powered chatbots can handle customer inquiries, while automated systems can optimize network performance and detect anomalies.

However, the adoption of automation in Pakistan is not without its challenges. The high cost of automation technology can be a significant barrier for many businesses, particularly small and medium-sized enterprises. Additionally, the lack of skilled professionals with the expertise required to implement and maintain automation systems can hinder its adoption (Asif & Sandhu, 2023; Asif & Shaheen, 2022).



Regulatory hurdles also pose a challenge. Existing regulations and policies may need to be updated to facilitate the integration of automation technology into various industries. Ensuring that these regulations are aligned with the evolving technological landscape is crucial for the successful adoption of automation in Pakistan. As Pakistan continues to embrace automation, it is essential to address these challenges and capitalize on the opportunities it presents. By investing in training and development, fostering a culture of innovation, and creating a supportive regulatory environment, Pakistan can position itself as a leader in the automation revolution.

3.2 Artificial Intelligence Initiatives in Pakistan

Pakistan, recognizing the transformative potential of artificial intelligence (AI), has taken significant strides to foster its development and adoption. The country has launched several initiatives aimed at promoting AI research, education, and commercialization, positioning itself as a player in the global AI landscape.

The government's National AI Policy serves as a guiding framework for Pakistan's AI strategy. This policy outlines the country's vision for AI development, identifies key priorities, and establishes guidelines for ethical and responsible AI use. Research centres and universities across Pakistan are actively engaged in AI research, exploring cutting-edge applications in various fields. These institutions are developing innovative AI solutions, contributing to the global knowledge base, and nurturing a new generation of AI talent (Jamil, 2021).

The entrepreneurial spirit in Pakistan is evident in the growing number of AI start-ups. These start-ups are focusing on diverse sectors, including healthcare, agriculture, and finance, leveraging AI to address pressing challenges and create innovative solutions. From AI-powered diagnostic tools to smart farming solutions, these start-ups are demonstrating the potential of AI to drive economic growth and improve people's lives (Nishtar et al., 2023; Shahid et al., 2022; Usama et al., 2022).

However, Pakistan faces several challenges in its AI journey. Access to large-scale, high-quality datasets is crucial for AI development, and the country may need to invest in data collection and curation initiatives. Additionally, the development and deployment of AI require robust computing infrastructure, which can be a challenge in some regions of Pakistan. Addressing these infrastructure gaps will be essential for fostering AI innovation (Nadeem et al., 2024).

Perhaps the most significant challenge is the talent gap. Developing a skilled workforce in AI, including data scientists, machine learning engineers, and AI researchers, is critical for the country's success. Pakistan needs to invest in education and training programs to equip its citizens with the necessary skills to thrive in the AI era.

As Pakistan continues to embrace AI, it is essential to address these challenges and capitalize on the opportunities it presents. By fostering a supportive ecosystem for AI research, education, and commercialization, Pakistan can position itself as a global leader in AI and unlock the immense potential of this transformative technology.

3.3 Gig Economy Platforms in Pakistan

The winds of change are blowing across Pakistan's workforce. The gig economy, characterized by short-term, project-based work, is gaining significant momentum. Online platforms like Careem, in-Drive, Uber, and others similar applications are connecting workers with clients in major cities, offering ride-hailing



services that cater to the growing demand for convenience. Similarly, platforms like Foodpanda, Jovi, Pathao, and others similar applications have revolutionized the way we get our food and groceries, with delivery services powered by a network of on-demand workers.

This burgeoning trend presents an exciting opportunity for many Pakistanis. The gig economy offers a welcome level of flexibility, allowing individuals to choose their work hours and workloads. Whether it's a student looking for extra income or a professional seeking a side hustle, the gig economy has something to offer. Additionally, freelance platforms like Upwork, Freelancer.com, and other freelancing platforms are opening doors for skilled individuals to connect with clients worldwide, showcasing their talents and earning a living on their own terms and conditions.

However, Pakistan's journey into the gig economy is not without its challenges. One of the key concerns is the lack of a clear regulatory framework. Issues like worker rights, income tax, and social security need to be addressed to ensure that gig workers are adequately protected and contributing to the national economy.

Another hurdle is the limited access to reliable internet connectivity in some areas of Pakistan. The gig economy thrives on a robust online infrastructure, and those living in areas with poor internet access will be disadvantaged in this new landscape. Additionally, as the gig economy matures, competition is bound to stiffen. This could pose challenges for workers in finding steady work and negotiating fair compensation.

Despite these challenges, the future of Pakistan's gig economy looks promising. By developing a supportive regulatory framework, investing in infrastructure development, and promoting digital literacy, Pakistan can empower its workforce and reap the immense benefits of this flexible and dynamic work model.

4. Implications for HRM Practices in Pakistan

In the heart of Pakistan, a quiet revolution was underway. The rapid pace of technological change, like a tidal wave, was transforming the very nature of work. Automation and artificial intelligence, once distant concepts, were now tangible realities, reshaping industries and demanding a new set of skills from the workforce.

Human resource professionals, the guardians of organizational talent, found themselves at the forefront of this transformation. The traditional approach to workforce planning and management was no longer sufficient. They needed to adapt, to evolve, to meet the challenges and seize the opportunities presented by this new era.

The spectre of automation loomed large, threatening to displace certain jobs. Yet, amidst the fear, there was also a glimmer of hope. Automation could create new roles, requiring specialized skills in technology and data analysis. The rise of artificial intelligence, with its ability to augment human capabilities, promised a future of collaboration between man and machine (Aurangzeb, 2021; Aurangzeb et al., 2021; Azad, 2023).

To navigate this complex landscape, HR professionals in Pakistan knew they had to act decisively. They embarked on a journey of skills gap analysis, identifying the current and future competencies needed for organizational success. Training and development programs were launched to bridge the gap, equipping employees with the tools to thrive in the digital age (Asif et al., 2019; Aurangzeb et al., 2021; Khan, 2023a). Talent acquisition strategies were revamped to attract individuals with the skills and mind-set required to



succeed in a technology-driven world. Social media, online job boards, and partnerships with educational institutions became essential tools in the HR professional's arsenal.

But the transformation extended beyond skills and talent. It was about creating a work environment that fostered employee engagement, well-being, and ethical conduct. HR professionals recognized the importance of providing opportunities for professional growth, recognizing employee contributions, and supporting mental health.

As Pakistan embraced the digital age, HR professionals emerged as the architects of a new workforce. They were the catalysts for change, guiding their organizations through the challenges and seizing the opportunities presented by technological advancements. The future of work in Pakistan was uncertain, but with HR professionals at the helm, the nation was poised to thrive in this new era (Khan, 2023; Nabi, 2019).

Anticipating the skills that will be in high demand in the future is crucial for HR departments. By developing strategies to ensure that the workforce possesses these competencies, organizations can stay competitive and meet the challenges of the changing landscape. Ongoing upskilling and reskilling programs are essential to equip employees with the knowledge and skills needed to adapt to technological advancements. HR professionals need to develop effective talent acquisition and retention strategies to attract and retain skilled employees in a competitive job market. Considering the growth of the gig economy, HR departments may need to explore flexible work arrangements, such as remote work and contract employment, to meet the changing needs of the workforce (Asif et al., 2022; Asghar et al., 2021; Nabi, 2019).

Investing in skill development and training programs is crucial for organizations to remain competitive and adapt to the changing landscape. HR departments need to ensure that their training programs are aligned with the organization's strategic goals and the evolving needs of the workforce. Customized training programs tailored to the specific needs of employees and the organization's goals can provide the most effective learning experience. A combination of traditional classroom training, online learning, and on-the-job training can offer a comprehensive and effective learning experience (Asif et al., 2023; Asghar et al., 2011; Khan, 2023b; Sumbal et al., 2024). HR departments should foster a culture of continuous learning, encouraging employees to seek out new knowledge and skills. Developing strong leadership skills is essential for organizations to navigate the complexities of the modern workplace (Shaikh et al., 2023).

The competition for top talent is intense, and HR departments need to develop effective recruitment and retention strategies to attract and retain the best employees. This includes understanding the changing expectations of the workforce and offering competitive compensation and benefits packages. Building a strong employer brand can help attract top talent and create a positive work environment. HR departments need to focus on employee engagement to improve job satisfaction and retention. Offering flexible work arrangements and supportive policies can help employees achieve a healthy work-life balance (Alizai et al., 2021; Asif, 2021; 2022; 2024). Providing opportunities for career growth and development can help employees feel valued and motivated.

5. Challenges and Opportunities

HR professionals in Pakistan are currently navigating a complex and dynamic environment, facing a multitude of challenges that arise from technological advancements, economic uncertainty, talent shortages, evolving workforce expectations, and regulatory compliance. Keeping pace with technological changes and



understanding their impact on the workforce can be overwhelming. Economic fluctuations and uncertainties can significantly impact hiring decisions, compensation strategies, and employee morale. Finding and retaining skilled employees in a highly competitive job market is a constant challenge. Moreover, employees have evolving expectations regarding work-life balance, job satisfaction, and career development, which HR professionals must address to maintain a positive work environment. Complying with a complex set of labour laws and regulations further adds to the challenges faced by HR professionals.

Despite these challenges, the changing landscape also presents numerous opportunities for HR professionals to innovate and contribute to organizational growth. Digital transformation offers the potential to streamline HR processes, improve efficiency, and enhance employee experience through the use of technology. Data-driven decision-making can enable HR professionals to make informed decisions about workforce planning, talent acquisition, and employee development by leveraging data analytics. Creating a positive and engaging employee experience is crucial for improving job satisfaction and retention. Strategic partnerships with other departments can help align HR strategies with the organization's overall business goals. Finally, developing a global mind-set and understanding the implications of globalization for the workforce can provide HR professionals with a competitive advantage.

By proactively addressing these challenges and seizing the opportunities, HR professionals in Pakistan can play a pivotal role in driving organizational success and adapting to the changing world of work.

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