

Artificial Intelligence as a Strategic Enabler in Human Resource
Management: Transforming Information Technology Industry in Saudi
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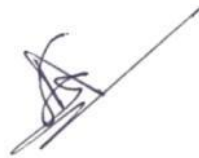
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Dedication

This dissertation is dedicated to the pillars of my life, whose unwavering support, belief, and encouragement have made this journey possible.

To my beloved family, the foundation of my strength and resilience. Your constant love, patience, and understanding have been my anchor through every demanding moment of this academic pursuit. Your faith in me has fueled my determination to grow, persevere, and succeed.

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Abstract

This study examines the adoption and integration of Artificial Intelligence (AI) in Strategic Human Resource Management (SHRM) within organisations in Saudi Arabia. The research investigates the key factors influencing AI implementation in HR functions, the major challenges organisations encounter, the strategic opportunities AI creates for enhancing HR effectiveness and workforce development, and the recommendations necessary for successful integration. Using a quantitative research design, data were collected through a structured questionnaire administered to IT professionals within IT industry. Sample size of the study was 600 information technology professionals working in Saudi Arabia cities namely, Riyadh, Jeddah, and Dammam. Statistical analyses, including reliability testing, descriptive statistics, correlation, and regression analysis, EFA were conducted to evaluate the relationships between AI adoption and organisational performance outcomes. The findings indicate that technological readiness, leadership support, organisational culture, and digital competencies significantly influence AI adoption in HRM. While AI offers strategic benefits such as improved talent acquisition, predictive workforce analytics, enhanced employee engagement, and data-driven decision-making, organisations face challenges including resistance to change, limited technical expertise, high implementation costs, and ethical concerns related to data privacy and algorithmic bias. The study further reveals that effective governance frameworks, employee upskilling, and strategic alignment are critical for maximizing AI-driven HR performance. Overall, the research contributes to the growing body of knowledge on AI-enabled SHRM in emerging economies and provides practical recommendations for organisations and policymakers to foster sustainable digital transformation aligned with Saudi Arabia's Vision 2030 objectives.

Keywords: artificial intelligence (AI), competitive advantage, organisational performance, strategic human resource management (SHRM), technologies

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Chapter 1

Introduction

1.1 Introduction

The speed with which digital technologies are evolving has essentially transformed the entire business landscape throughout the globe forcing organisations to reconsider all the traditional approaches to management and adopt innovation-based approaches (Zirar, Imran and Islam, 2023). Artificial Intelligence (AI) is one of such technologies, and this aspect has become one of the most influential ones, not only in the process of operations but also in the strategic decision-making of various industries. AI can be described as computer systems that can handle all sorts of tasks which normally entail human intelligence such as learning, reasoning, problem solving, and predictive analysis. Although the first application of AI was in fields like manufacturing, finance, and customer service, over the last few years, its application within the Human Resource Management (HRM) has attracted a lot of attention. Organisations are coming to accept that AI is not a technological improvement, but rather a strategic enabler that can revolutionize human capital management and its use as a competitive benefit (Yitayew and Ketema, 2025).

Human Resource Management has always been considered as an administrative process dealing with employee recruitments, payrolls, training and employee relations. The increasing complexity of the business environments has however raised HRM services beyond the scope of assisting the organisations as an operation support to a strategic partner that has the responsibility of matching the workforce capabilities with the organisational goals. Strategic Human Resource Management (SHRM) underlines the alignment of the HR policies and practices to the business strategy in order to make the organisations perform better. Here, AI can present unparalleled possibilities in terms of improving decision-making, becoming more efficient, and establishing data-driven insights, which might be used to enable long-term strategic planning. Making artificial intelligence systems process large amounts of data about their employees, discovering patterns of the workforce, detecting areas of skills shortage, and suggesting specific interventions, AI can make HR a more powerful instrument of organisations.

Organisations around the world are using AI in several HR operations, such as talent acquisition, employee engagement, and workforce analytics, as well as learning and development. Recruitment tools based on AI make the screening of candidates much easier, speed up the process of hiring employees, and enhance the accuracy of job-role matching. Predictive analytics helps the managers to determine the potential employees and predict the potential turnover, so that the workforce planning can be performed proactively. Moreover, chatbots and digital assistants with AI improve communication between employees and ensure real-time help, thereby upgrading the overall experience of the employee. The improvements in HR processes provided by these technological advancements, in addition, enhance the organisational performance by increasing their productivity, minimizing the costs, and managing the talent better (Almuhanna, 2025).

The applicability of AI in the HRM ministry in Saudi Arabia has a close association with the ambitious economic reform agenda in the country as established by the vision 2030. The vision 2030 will also focus on diversifying the economy, weaning off oil revenues and promote the society that is knowledge based and innovatively minded. The key pillars of this national strategy are digital transformation and development of human capital. With the costly investment of Saudi Arabia in smart technologies, artificial intelligence, and digital infrastructure, companies are pressured to adapt to the latest trends, modernize their HR practices in order to be prominent. Introduction of AI to HRM is one of the paramount steps to attainment of such national goals since it can help to localize the workforce, advance its productivity, and develop talent that is prepared to work in the future (Singh *et al.*, 2025).

Information Technology (IT) is a key sector in Saudi Arabia that facilitates digital transformation. The cities of Riyadh, Jeddah, and Dammam have become one of the key technological centres, where a concentration of IT companies, innovation centres and multinationals are located. These cities are the centres of technological development and AI adoption into different industries. In such an active environment, AI integration and digital innovation put IT professionals in the leading position. The case study of the use of AI in HRM in these urban areas characterized by high technology would be insightful in understanding how these companies are strategically using AI to improve their performance and competitiveness.

Although AI has increasingly become a major focus in adopting technology, there are still challenges of its adoption in HRM. Such problems as the problem of data privacy, bias in the

algorithm, the lack of technical skill, and change resistance can become barriers to successful integration. Also, although the strategic value of AI in HRM is a topic that is being emphasized in the global literature, little empirical research exists on the topic in the Saudi Arabian context. Most of the current research are dedicated to the use of technology and its efficiency but are not aimed at investigating the role of AI in strategic alignment between the HR and business goals or influence it has on the organisational performance. This gap highlights the necessity of context-based research that examines AI as a tool of strategy and not a technology (Mohamed and Setar, 2025).

The theoretical alignment to the introduction of AI in HRM implies the possible interpretation within the concepts of Resource-Based View (RBV) and the Dynamic Capabilities Theory. These views indicate that organisations gain sustained competitive advantage by building on their unique resources and capabilities that are very hard to copy. Artificial intelligence systems that allow HR departments to be automated along with experienced human resources and competent leadership can turn into very valuable strategic assets. By improving information-based decision-making and input to an organisation, AI complements dynamic capabilities whereby organisations can adequately respond to the fast-paced market dynamics. With the changing Saudi Arabian economic environment, these abilities are crucial in the competitiveness and having sustainable growth (Belagalla *et al.*, 2025; Soni *et al.*, 2025).

There are also general implications to the culture of an organisation and leaders as the HRM changes with the help of AI. With HR functions being more data-driven, leaders will have to develop digital literacy, innovation, and ethical governance frameworks to guarantee the responsible use of AI. The effective implementation of AI must be multi-stakeholder in nature whereby technology specialists, HR division, and the top management would ensure that technological capacity is integrated in the organisational objective. In Saudi society, where organisational behaviour is impacted by cultural values, regulatory frameworks, and the policies of localizing the workforce of the country, one has to pay close attention to making sure that the realization of AI does not contradict the values embraced by the society and legal regulations.

The study is thus, aimed at examining Artificial Intelligence as strategic enabler of Human Resource management and how it can be used to change organisational performance in Saudi Arabia. Through targeting IT practitioners in the main technology locations, which include Riyadh, Jeddah, and Dammam, the study will help to determine the degree of AI

implementation in HR functions, the role of AI in Strategic Human Resource Management, and the consequences on organisation performance and strategic alignment. The study will offer meaningful contribution to organisational leaders, HR practitioners, and policy makers who may wish to use AI as a source of sustainable competitive advantage through empirical research.

Introduction of Artificial Intelligence in Human Resource Management is a paradigm shift in the way organisations handle and utilize their greatest asset- humanity capital. To put it plainly, within a fast-paced digital environment of Saudi Arabia, AI can transform HR's conventional role of an administrative component into a force that fosters novelty, efficiency, and organisational perfection. Examining this change in the frames of the IT sector in Saudi Arabia, the study would add scholarly as well as applied knowledge on the strategic use of AI in defining the future of the work and organisational performance (Palanivelu, 2020).

1.2 Significance of Artificial Intelligence in Today's Era

Artificial Intelligence (AI) is now one of the most powerful technological innovations of the modern world that transforms the nature of how people, organisations, and governments operate. The 21st century world has become fast-paced, incredibly digital, and made up of interconnected systems. The AI has the key in the sorting and deriving meaning out of this immense volume of data, making it possible to make informed decisions and develop plans. Contrary to the old-fashioned way of computing where the only use of the systems is being used to follow the established guidelines, the AI systems have an opportunity to learn, identify the patterns, adjust to the new information and become more efficient in the course of time. This cognitive intelligence has made AI to be a groundbreaking concept that has influenced innovation and efficiency in various fields (Rahman, 2026).

In the current competitive business environment that is global, more organisations are under pressure to increase productivity, minimize operational costs, and have sustainable growth. AI would play an important role in ensuring the attainment of these goals by robbing repetitive duties, enhancing workflow, and accuracy in the operations. The manufacturing industry is one of the industries that apply AI-based robotics and predictive maintenance applications to reduce downtime and enhance the efficiency of production. In the financial industry, AI algorithms are used to identify frauds, determine credit risk, and algorithmic trading, which is amazingly accurate. Likewise, AI-based diagnostic tools can be used in healthcare to help medical workers

diagnose diseases early and cure patients faster and more reasonably. These are just some instances of how AI has achieved a step forward and beyond theoretical innovation to form a very crucial part of practical and reality applications.

The meaning of AI goes deeper than the aspect of operational efficiency; it has a worldwide impact in terms of decisions. Classical decision making tended to make judgments based on human intuition and small sample size. Nevertheless, AI can execute large-scale structured and unstructured data in real-time to create predictive insights to facilitate evidence-based choices. Analytics based on AI is now being used by the organisation to predict market trends, customer behaviour, and develop specific marketing plans. Through accelerating the decision-making process and boosting its precision, AI will enable the leaders to address the changing realities in the market promptly. This skill is particularly mandatory in dynamic and unpredictable business conditions whereby nimbleness is the deciding factor of organisational existence and performance (Albaqami, 2025).

The other important aspect of the importance of AI is its ability to increase human potential. On the contrary, despite the panic and concern of mass unemployment, as most experts suggest, AI does not substitute human intelligence: It only complements it. Automation of routine and administrative work by AI enables the employees to concentrate on creative, analytical, and strategic work that demands emotional intelligence, critical thinking, and problem-solving. As an example, AI chatbots can take up a standard customer's request and leave the human employees to deal with more complicated problems that involve empathetic and negotiation abilities. Such a partnership between human intelligence and artificial intelligence produces a hybrid model of productivity that produces better overall performance within an organisation.

The AIs are also transformational in organisational practice of work and human resource management. AI technologies are becoming the power behind data-driven talent acquisition, individualized learning platforms, performance analytics, workforce planning systems, etc. These innovations allow the organisations to determine the skill gaps, anticipate employee turnover and develop specific training programs. Here, AI contributes to the progress of agile and future-relevant workforces that can adapt to changes in the technological progress. With the process of digital transformation of businesses gaining momentum, AI becomes the centre bang in the creation of the future of work and the re-invention of the traditional employment tropes.

At a larger level to the society at large, AI is a contributor to economy and national competitiveness. Nations in the worldwide economy are pouring in in AI research, innovation frameworks, and computerized infrastructure to enhance their place in the global economy. The technology of AI promotes entrepreneurship, and establishment of new industries as well as foreign investments. Emerging economies, Saudi Arabia included, have identified AI as a part of the economic diversification strategies. Saudi Arabia is seeking to develop a knowledge-based economy through technological innovation and human capital development through activities that are in tandem with Vision 2030. The examples of AI-driven smart city initiatives, digital governments, and high-tech industrialization are some of the ways in which countries can exploit AI to ensure sustainable development and modernization (Al-ayed, 2025).

The other area that has been significantly affected by AI is education. However, intelligent tutoring systems, adaptive learning systems and data analytics allow personalized learning depending on the needs of a particular student. When learning patterns are studied, and performance metrics are examined, AI systems are able to give individual suggestions that will improve learning results. This individuality enhances access and quality in education to eliminate disparities in the normal education systems. In the epoch of lifelong learning prerequisite of career sustainability, educational tools based on AI help learn and adjust to workplaces continuously.

Along with a variety of benefits, the emergence of AI presents serious ethical, social, and regulatory concerns. The issue of data privacy, cybersecurity, and algorithmic bias and transparency have become particularly popular in the last few years. AI systems are based on data largely, which casts doubt on the acquisition, storage, and use of personal information. Also, algorithms can lead to unintentional discrimination as prejudices can happen in any algorithm unless closely monitored and controlled. Thus, the importance of AI in the modern world is coupled with the obligation to introduce powerful regulatory frameworks, code of ethics, and laws to promote equitable and clear-cut usage of technology (Rani, Singh and Kumar, 2025).

Moreover, one should not disregard the influence of AI on the workplace and workforce organisation. Although AI introduces new career opportunities in data science, machine learning, and digital management, it is disrupting the old ones and based on the need to reskill and upskill the workforce, such a disruption should be considered. Governments and organisations should work together to equip employees with working conditions characterized

with AI-contained systems through investment in digital literacy and technical skills. By focusing on humanistic AI creation, technological advancement would be in line with the welfare of society and growth, and inclusive development.

AI is another element of environmental issues in the face of global sustainability. AI Automation systems utilize energy efficiently, manage renewable energy better and have a more efficient supply chain and therefore less carbon footprint. Smart technologies in agriculture are used to check the state of soil, anticipate weather conditions, and optimize crop yields and reduce resource wastage by using AI. The applications emphasize the fact that AI can contribute to the sustainable development agenda and help to utilize resources in a responsible way (Panda *et al.*, 2024).

Artificial Intelligence is one of the revolutionary processes defining the modern world. It is not only of great importance in terms of technological development but also in the ability to remake the business strategies, improve human skills, develop economy, and resolve societal issues. With the modern world moving in a direction toward digital transformation, AI has become one of the strategic assets that allow organisations and nations to be innovative, competitive, and sustainable in development. Nevertheless, the benefits of AI implementation necessitate moderate solutions that should incorporate technology growth alongside moral management, human resource growth, and equal policies. In our world that is interconnected and is swiftly changing, AI is not just an alternative service; it is one of the strategic pillars that determine the future of each industry, economy, and society all over the world.

1.3 Relevance of Strategic Human Resource Management (SHRM)

The current business world is very competitive and dynamically changing and this pressures organisations to reconsider the old-fashioned management strategies and pursue strategies that can sift them towards long term sustainability and development. The change of paradigm of traditional Human Resource Management (HRM) into Strategic Human Resource Management (SHRM) is one of the most significant changes in the current management thinking. Where conventional HRM was mainly associated with administrative activities, consisting of recruitment, payroll, compliance, and other administrative functions, SHRM puts a lot of attention on how human resource is aligned to the wider organisational strategic goals. It is this alignment that will see human capital to be part of organisational success, and not a

supporting aspect. SHRM is now essential in attaining sustainable competitive advantage in an age of globalization, technological discontinuity, and knowledge-based economies.

The applicability of SHRM is well established because employees are also one of the greatest organisation assets. According to the Resource-Based View (RBV) of firm, sustainable competitive advantage is founded on the valuable, rare, inimitable non-substitutable resources (Madanchian, 2025). Human capital- because of the knowledge, skills, creativity, and commitment of the employees-qualifies them to such criteria. The highly skilled and motivated workforce is very hard to replicate as opposed to physical assets or even technology since some aspects are replicable by other competitors. SHRM is aimed at the strategic management of this human capital to help in creating a synchronized match between the workforce competencies and the organisational objectives. SHRM also improves the capacity of the organisation to develop distinct capabilities that could facilitate its growth by ensuring good performance management systems, leadership development, and succession planning.

The dynamic global business environment is another major cause of the increase in the relevance of SHRM. Volatility, uncertainty, complexity, and ambiguity (VUCA) are some of the factors that organisations can now be described to be operating in. The rate of technological development, consumer behaviour changes, regulatory developments and economic swings need organisations to be flexible and mobile. SHRM helps organisations to become more agile through anticipating future skills, building the culture of lifelong learning, and developing leadership pipelines. Instead of responding to changes, strategically controlled HR practices foresee the changes in the environment, and the workforce is equipped to an anticipated situation. This progressive attitude allows organisations to be competitive and tough despite the continuous upheaval.

SHRM is strengthened by further advent of technology. The incorporation of digital solutions, artificial intelligence, automating, and data analytics has tremendously transformed the manner of doing business. With the implementation of the latest technologies in organisations, new competencies and digital literacy are in demand. SHRM makes certain that training and acquisition of talent are in interaction with technological developments. When companies invest in reskilling and upskilling, they can address any gaps in skills and increase staff flexibility. Furthermore, the application of HR analytics will facilitate planning grounded in the data where human capital investment will be directly associated with business performance

results. Here SHRM is a liaison between technological innovation and capability workforce development.

The SHRM is also relevant in terms of the engagement of employees and organisational culture. The contemporary employees are looking at getting rewarding work, career growth, work life, and non-discriminative workplaces. SHRM understands that productivity and performance of an organisation are directly related to satisfaction and engagement of the employees (Nastase and Adomnitei, 2025). SHRM creates an optimistic organisational culture that leads to increased commitment and less turnover by developing policies that foster the health of the workforce, diversity, equity, and inclusion. Initiatives like performance-based rewards, career progression models, participative leadership among others lead to increased motivational levels, as well as organisational loyalty. Therefore, SHRM can underpin operational efficiency as well as the establishment of sustainable and people-oriented organisational environment.

Regarding performance, SHRM is instrumental in accomplishing the achievement of HR practices in organisational performance. Conventional HR departments were also not able to show their role in financial performance. SHRM incorporates, however, the HR indicators along with the key performance indicators (KPIs) like productivity, profitability, innovation rates, and retention. Embracing the principle of evidence-based HR practices and analytics allows organisations to measure the contribution of the talent management strategies to the business success. Such a strategic integration takes HR to the next step, becoming a decision partner at the executive level to make sure that the human capital aspects are reflected in corporate strategies development and execution.

SHRM is very relevant in terms of emerging economies that are in the surging phase of transformation. SHRM is very crucial in coordinating and aligning workforce options with the national development agendas in countries like Saudi Arabia where economic diversification and digital transformation are among the key priorities in their economic development initiatives. Plans like the Vision 2030 focus on human capital development, growth in technology and development in the private sector. SHRM assists in these objectives by enhancing skills, leadership ability, and localization of workforce. Through management of talent, organisations can help in making a country competitive as well as economically sustainable.

SHRM is also becoming more important due to globalization. The growth of organisations into international markets exposes them to varying cultural, legal as well as economic environments. SHRM makes the HR to be flexible, and sensitive to culture without losing focus with the corporate strategy. The strategic considerations involved in managing the global workforce and cross-cultural training have been identified as well as global talent mobility; these need to be planned and coordinated accordingly. SHRM increases the multinational competitiveness and the uniformity of operations by incorporating international human resource strategies and organisational goals (Alshahrani and Choukir, 2025a).

In addition, the increasing trend of sustainability and corporate social responsibility (CSR) strengthens the HR strategic position. Firms are more than expected to prove to be ethically conducting, environmentally responsible, and socially accountable. SHRM incorporates sustainability in HR strategies by facilitating green HR, ethical leadership and socially responsible employee engagement projects. Inclusion of sustainability in the management of a workforce empowers the reputation, trustworthiness of stakeholders, and sustainability of the organisation.

Moreover, the changing aspect of work, including remote working, hybrid work arrangements, gig work, and flexible working arrangements, should require strategic workforce planning. SHRM can offer patterns in the management of various work arrangements at the same time remaining productive and engaged. The policy of promoting flexible working hours, digital working tools, and performance-based evaluation system will provide organisations with the ability to adjust successfully to the expectations of working in the modern workforce. Here, SHRM would be necessary in balancing employee needs with organisational goals in the digital world that is becoming connected.

SHRM is critical in current business environment because it has the potential of balancing human resource with organisational strategy, innovation, competitiveness and sustainable performance. It is changing HR perceptions of an administrative role to a strategic partner that can define organisational direction and development. SHRM offers the model that is needed in the environments of instability of technology, globalization, and socio-economic change to create resilient, agile, and high-performing organisations. SHRM has played a key role in the strategic management of talent, development of leadership, and alignment of human resource practices with corporate objectives, as this organisation is now better placed to manage the

complex challenges of the ever-greater knowledge-based economy and is thus likely to succeed in the long run.

1.4 Artificial Intelligence as a Strategic Enabler in Human Resource Management

Artificial Intelligence (AI) has become a potential revolution in modern enterprises that has redefined how human resources are handled, developed, and aligned with business goals. Competitive advantage in the changing knowledge economy where non-physical resources (talent, innovation, organisational learning) are the primary drivers of competitive advantage is through AI as a strategic enabling factor that improves the efficiency, effectiveness and foresight of Human Resource Management (HRM). Instead of serving as a technological device to automate HR functions, AI is more and more being framed as a strategic collaborator, which redefines HR functions through the employee lifecycle including talent acquisition and onboarding, performance management, learning and development and workforce planning (Chukwuka and Dibie, 2024).

Conventionally, the views of the HR departments were administrative support functions which handled payroll processing and compliance and record maintenance services. The advent of Strategic Human Resource Management (SHRM) however, changed this perception toward the focus on the alignment of HR practices to the long-term business objectives. AI empowers this strategic orientation by facilitating the use of data to make decisions and predictive analytics. The organisations can process large volumes of data about employees using powerful algorithms and machine learning models to extract trends, forecast attrition, determine performance trends, and create interventions that are specific. This is changing the intuition-driven to evidence-driven framework in HR management, making the organisation agile and helping to determine that talent strategies must be harmonized with the requirements of the competition.

Talent acquisition and recruitment is one of the greatest contributions of AI in HRM. Intelligent recruitment solutions allow sorting through thousands of resumes in seconds, slotting candidate profiles against job descriptions using natural language processing and lowering bias levels through unconscious evaluation criteria normalization. Chatbots and virtual assistants will mean real-time communication with the candidates, which enhances the process of candidate experience and leaves less HR professionals to do the same. Predictive hiring applications can determine the suitability of the candidates by use of the past performance records; hence

organisations can hire people who are more likely to perform well in certain positions. It then follows that the process of recruitment is made not only quicker and cheaper but also better geared towards organisational performance deliverables.

AI brings about ongoing and real-time feedback in the performance management. Old fashioned annual performance appraisals are usually subjective and narrow-minded. AI-based performance analytics combines the data of various sources, such as, project output, peer reviews, consumer data, and productivity indicators, to create an all-inclusive evaluation of worker performance. The systems can recognize employee potentials, reveal performance gaps, as well as suggest individual development plans. Connecting individual performance data with the goals of an organisation, AI supports the strategic position of HR in guaranteeing the productivity and accountability (Jain *et al.*, 2024).

Another area where AI is used as a strategic enabler is in learning and development (L&D). AI-driven adaptive learning platforms examine employee skills, learning styles, and ambitions in their activities and create individual training tracks. Organisations no longer have to use one-size-fits-all training programs, instead they can provide personalized learning experiences that help the employees become more engaged and competent. The fact that AI can predict upcoming skill needs through market trends and technological changes also allows proactive workforce upskilling because it offers an opportunity to anticipate the future needs of the market. In highly competitive industries like information technology where skill obsolescence takes place at a very high rate, AI-led L&D keeps the organisations on par with keeping their human capital always updated.

Talent analytics and the workforce planning also show the strategic value of AI. Using big data and predictive model, AI systems can predict workforce, skills gaps, and staffing levels. Scenario-based simulations assist organisations to be prepared against the economic variability, technological disturbances or the expansion approach. As an illustration, AI can simulate the effects of automation on employer positions and suggests reskilling mechanisms to lessen the workforce displacement. This kind of insights would assist the top management in making sound strategic decisions based on talent investments and organisational restructuring.

The AI technologies have also changed employee engagement and experience management. Sentiment analysis tools are used to measure morale and organisational climate using employee

feedback, survey, and patterns of communication. AI is capable of detecting the signs of burnout, disengagement or turnover risk early and providing the HR team with the opportunity to stop such trends. Virtual HR assistants allow employees to access the information about the policies, benefits, and career opportunities within seconds, which increases the level of transparency and contentment. Through the creation of a responsive and conducive work environment, AI has a positive impact on the rate of retention and commitment to an organisation (Al-ayed, 2025).

Although it is a strategic approach, the use of AI in HRM poses valid ethical and managerial issues. There should be some concerns associated with the privacy of the data, the bias in algorithms and the transparency of the AI use to maintain fair and responsible use of AI. To ensure that employees do not abuse employee data, organisations should come up with good governance systems, ethical principles, and compliance. Further, AI application within the HR needs to be implemented with change management measures, employee education, and executive buy-in. The HR professionals need to acquire analytical and technological skills to be able to analyse the insights generated by AI as well as incorporate it into the strategic plan.

In a more general strategic view, AI reinvents the purpose of HR leaders. Instead of working on the administrative and coordination, HR executives now develop into the strategic thought leaders in the transformation of the workforce. They work with the top management to align AI-grounded talent strategies with corporate vision, digital transformation projects, and sustainability objectives. In this regard, AI is not the substitute of human judgment it is the augmentation tool which improves the quality of decision-making and strategic foresight.

Throughout the emerging and quickly growing economies, especially in those areas where there is digital transformation, HRM that employs AI will add a lot of value to the competitiveness of the country. Those that use AI in talent management can hustle innovation, improve productivity, and attract international talent. Incorporating AI into HR systems, companies establish an ecosystem that is dynamic as the data, technology, and human abilities interact in a synergistic way to drive organisational performance.

As a strategic enabler of Human Resource Management, AI will make the classic HR functions data-driven, predictive, and strategically aligned to realize their potential. It is more efficient in recruitment, builds better performance management, individualizes learning and development, better planning of the workforce, and works better in employee engagement.

Although the issues of ethics and governance should be taken seriously, there is a strategic role of AI in HRM that places organisations at a better position to develop sustainable competitive advantage in an ever more digital and knowledge-driven environment.

1.5 Statistical Snapshot of the Information Technology Industry in Saudi Arabia

IT business in Saudi Arabia has witnessed impressive growth over the last ten years to be one of the most rapidly growing online economies in the Middle East. The IT sector is now a pillar of economic diversification operations due to Vision 2030 and goodwill of the government on digital transformation. Saudi Arabia's ICT (Information and Communication Technology) market is estimated to be valued at over USD 40 billion in recent years, making it the largest ICT market in the Middle East and North Africa (MENA) region. The industry has been showing consistent growth rates of between 1.5 to 2 per year with more efforts towards developing digital infrastructure, cloud computing, cyber security, artificial intelligence and data analytics. These numbers can be taken as evidence of the strategic intent of the Kingdom to create a strong and competitive technological ecosystem (Golden, 2025).

There are also significant increases in the market in the creation of jobs in the IT sector. The overall population of IT and digital specialists in Saudi Arabia can be estimated to be about 270,000, which is also the look of a fast-growing technical employment environment. Most of these professionals are concentrated in the largest urban areas like Riyadh, Jeddah and Dammam which are the main hub of technology and innovation. As the capital city and administrative centre, Riyadh is also home to a substantial amount of government-driven digital innovation, tech-startups, and MNCs. As a large business hub, Jeddah is making significant investments to e-commerce, fintech, and logistics technology, and Dammam and the Eastern Province to aid digital transformation in energy, petrochemical, and industrial departments. These territorial concentrations are used to bring out the geographical location of technological development in the Kingdom.

Government investment has played a pivotal role in accelerating IT sector development. Saudi Arabia has allocated substantial funding toward digital infrastructure, smart city projects, and innovation initiatives. The establishment of entities such as the Saudi Data and Artificial Intelligence Authority (SDAIA) and the National Strategy for Data and AI underscore the nation's ambition to become a global AI leader. The Kingdom has now established high-quality goals to raise the role of digital economy in the GDP and become one of the leading world

countries in the lists of AI and digital competitiveness. Big-box projects (NEOM, The Line, and other smart infrastructure projects) also testify to the use of advanced IT solutions in urban development plans and economy.

The Saudi Arabia startup ecosystem has had an impressive growth as well. There have been many growths in the number of technology startups with the aid of venture capital technology, state-backed accelerators, and independent entrepreneurial efforts. Fintech, e-commerce, health tech and AI startups have increasingly become popular areas of investment, and Riyadh is becoming one of the primary startup locations in the region. The growth in the number of venture capital transactions and round investment shows the belief of investors in the digital future of the Kingdom. In addition, Saudi Arabia is always one of the leading countries in terms of technological investment and digital uptake in the MENA region (Nababan and Saputra, 2026).

Cybersecurity and cloud computing constitute two major areas in the Saudi IT industry that are growing at a rapid pace. Use of cloud services has boosted its pace due to migration of organisations that would move to the traditional IT infrastructure to cloud-based systems that are scalable and secure. Global technological organisations already have regional cloud data centres in existence in the Kingdom, which are enhancing digital infrastructure and enterprise transformation. There has also been a significant rise in spending on cybersecurity, which has been enhanced by the necessity to defend against the digital assets, compliance with regulation and protect national infrastructure. With the increased complexity of the cyber threats, Saudi organisations have invested in high-tech security solutions at a rate resulting in the generation of more jobs and development of special skills among the IT professionals.

The growth of IT industry has been further enhanced through digital transformation efforts at the public and the private sector. Services offered by governments are becoming digital and are more efficient and accessible. E-government projects, online payment system and smart governance programs have helped improve service delivery and citizen interactions. Industries like banking, healthcare, retail, manufacturing, etc. in the private sector are adopting AI and big data analytics and automation technologies within their industry operations. These developments have led to great pressure on professional IT workers, software developers, data scientists, and cybersecurity specialists.

The sector is also expanding due to education and workforce development activities. Academic institutions of higher learning in Saudi Arabia have also launched specialized courses in computer science, data science, artificial intelligence, and cybersecurity to address the current explosion of digital skill demands. The government is trying to get Saudi nationals more involved in the technology sector through the employment of scholarships and training programs; this is to correspond with the policies of the workforce localization. The focus on upskilling and reskilling is such that the labour force would be competitive in the technology-focused global economy.

The IT industry will persist in increasing its contribution to the non-oil GDP as this will indicate its significance in diversification. Digital industries are emerging as the source of innovation and output as the decline of oil dependency starts to gain momentum. The spin of artificial intelligence, Internet of Things (IoT), blockchain, and enhanced analytics further helps to state the impact of the industry to convert old-fashioned industries into knowledge-based companies. This digital transformation will increase the overall economic resilience and also make Saudi Arabia a technological innovation leader in the region (Alshahrani and Choukir, 2025b).

Even despite all these accomplishments, there are challenges. The industry is understaffed with highly digital specialized skills, high demand to global talent, and has to ensure constant innovation to match the global technological progress. There is however continued investment in infrastructure, education and reform on regulation which points to a commitment by the government in overcoming such barriers. The success of the IT industry to grow digitally is supported by the fit between the national development policies and the digital transformation programming.

Information Technology industry in Saudi Arabia has a statistical environment that shows the growing trend of rapid development, high levels of employment growth, high level of government support, and the growing involvement of the private sector. Having a workforce of about 270,000 professionals and a multi-billion-dollar market value, the IT sector is one of the core focus of the economic restructuring in Saudi Arabia. The industry is concentrated in Riyadh, Jeddah, and Dammam but still has been able to draw investments, develop innovations, and create technological development opportunities. With the further increase in the processes of digitalization of all industries, the IT industry will become even more important in determining the economic future of the Kingdom and reaching the high goals of Vision 2030.

1.6 Research Problem

In the ever changing digital economy of these times, organisations are faced with pressure to be more productive, more innovative and compete. The adoption of Artificial Intelligence (AI) into the business processes has gained traction in all industries, but the strategic use of it in the framework of Human Resource Management (HRM) is unequal and still lacks comprehensive comprehension. Although most companies are using AI-based tools to facilitate recruitment, performance analytics and workforce planning, the vulnerability lies on the paucity of empirical studies on the mechanisms of AI as a strategic enabler as opposed to an operational or administrative support system. This is a more serious issue in the developing digital economies where the technological change is being done at the national level.

The Information Technology (IT) industry is fast growing in Saudi Arabia in the framework of the digital transformation agenda, in accordance with the Vision 2030, and its employment is also wide, about 2,70,000 IT specialists are estimated in the country. This expansion has brought about continuing problems of talent crunches, elevated job turnover, skill gaps, restricted predictive human resource planning and performance management system inefficiencies in the organisations. The introduction of AI technologies to the HR functions is usually decentralized even though they are not integrated with any wider strategic human resource management (SHRM) goals. Therefore, organisations are not able to convert AI adoption into organisational performance improvement that would be quantifiable.

Additionally, the study that investigates the relationship between AI-centered HR practices and the major indicators of organisational performance concerning the Saudi Arabian IT sector is deficient. Current literature pays much attention to technological potentials or automation of operations but does not consider how AI acts as a mediator or enabling factor in the increased presence of human capital strategies and business objectives. Moreover, the issues of data privacy, unethical application of algorithms, unwilling to change technologies, and low levels of digital skills among HR professionals represent additional obstacles to successful AI implementation.

Thus, the key research question of the proposed study is the exploration of the role of AI as a strategic facilitator of Human Resource Management as well as the analysis of its influence on changing the performance of organisations in the Information Technology industry in Saudi Arabia. The aim of the study is to fill the gap between the adoption and the strategic

implementation of AI, which deems to discuss whether AI-based HR practices can lead to improved employee performance, organisational efficiency, innovation potential, and general competitive advantage.

This study will serve as an empirical study to provide managerial implications and understanding of how AI integration can be utilized to enhance human resource management but not as a technological solution, but rather as a strategic resource in changing the organisational goals and strategic intent.

1.7 Purpose of the Research

This study is aimed at analysing the role of Artificial Intelligence (AI) as a strategic enabler in the Human Resource Management (HRM) and to assess the effects of Artificial Intelligence on the performance of the organisations in the Information Technology industry of Saudi Arabia. In the recruitment, performance appraisal, workforce analytics, and employee engagement processes, AI technologies were applied, but there is scanty empirical evidence on the strategic impacts of this technology in the attainment of long-term organisational objectives. The proposed research will fill that gap by exploring how AI-based HR practices relate to the implications of Strategic Human Resource Management (SHRM) concepts and optimize efficiency, innovative practices, employee productivity, and organisational competitive security.

The main aim of the study is to discuss the role of Artificial Intelligence (AI) in Human Resource Management (HRM) as a strategic implementation and the influence it has on organisational performance in the Information Technology industry of Saudi Arabia. Although there is a trend of adoption of AI technologies in the recruitment process, performance assessment, workforce analytics, and employee engagement, there is scarce empirical knowledge that can be used to understand how AI-based technologies can be used strategically to achieve long-term organisational objectives. This research will fill this gap by examining the degree to which AI-ER practices are consistent with the Strategic Human Resource Management (SHRM)-principles and how they contribute to organisational efficiency, innovation, staff productivity, and competitiveness.

1.8 Significance of the Study

The importance of the proposed research is that it assists in determining how the concept of Artificial Intelligence (AI) can be strategically introduced into Human Resource Management (HRM) in Saudi Arabia to promote the performance of these organisations, especially in the fast-paced Information Technology sector. With the move of organisations to the digital ecosystems, the HR functions should no longer be constrained to the administrative functions but are supposed to lead to the innovation, talent optimization and competitive advantage. The present research presents empirical data on the value of AI-enabled HR activities (including predictive hiring, workforce analytics, learning systems), which is associated with strategic alignment and enhanced productivity. The theoretical domain presented by Strategic Human Resource Management (SHRM) gets reinforcement through the quality of the research, which focuses on AI as an enabler and not an automation instrument.

As a manager, the research contributes to delivering the practical information to HR leaders, policymakers, and organisational decision-makers trying to achieve the success with the applications of AI-driven solutions. It points to the key success factors of AI adoption that comprise technological preparedness, employee engagement, executive engagement, and ethics under governance. The results can be used by organisations to develop data-based HR policies to improve employee engagement, minimize turnover, and maximize the use of talents. In the case of Saudi Arabia where digital transformation is one of the national priorities, the study can guide the creation of technology-empowered workforce that can help the country to sustain long term economic growth.

Scientifically, the study adds to the sparse literature that relates the process of AI integration to the quantifiable organisational performance in developing economies. It offers a contextual perspective of AI enabled HR practices in the Saudi IT industry and this presents a basis on which future comparative and cross sector studies may be undertaken. Moreover, the research fills in the gaps with references to the mediated position of AI between strategic HR practices and organisational success, thus broadening the scholarly area of discussion of digital transformation and management of human capital.

The study has a wider applicability in terms of social and economic concerns because it focuses on responsible and ethical application of AI in workforce management. It supports sustainable AI use by exploring challenges related to data privacy, the transparency of the algorithm, and

human professional growth that will support technological progress without taking precedence over their value system. In the end, the study highlights how Artificial Intelligence can be used to transform HRM into a strategic unit that promotes organisational performance more than enhancing innovation, flexibility, and sustainable growth in the digital age.

1.9 Research Purpose and Questions

This study aims to look at the role of Artificial Intelligence (AI) as a strategic enabler in Human Resource Management (HRM) and how it affects performance of organisations in the Information Technology sector in Saudi Arabia. The proposed study seeks to examine the correspondence between artificial intelligence-based HR practices and strategic human resource management goals as well as to determine the effects of the latter on employee productivity, efficiency, and the general organisational competitiveness. The research questions of the existing study are mentioned below:

- **RQ1:** What are the factors influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia?
- **RQ2:** What are the major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices?
- **RQ3:** What strategic opportunities does Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia?
- **RQ4:** What strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia?

Chapter 2

Review of Literature

2.1 Introduction

The fast development of digital technologies has triggered the progress of the fundamental change of all the organisational functions, and the concept of Artificial Intelligence (AI) is becoming one of the most disruptive concepts that sweeps the modern work environments. Long viewed as a support role in which the human resource managerial position is concerned with administrative duties, Human Resource Management (HRM) is becoming identified as a strategic area that produces competitive advantage by cleverly using talents, developing workforce strategies, and improving performance (Priksat *et al.*, 2023). This change can be supported by the strategic application of AI that not only guarantees the operational efficiency but also provides the redefinition of the role of HRM in the organisational performance. Organisations can enable human capital management with its precision, foresight, and agility, the features that are essential in the dynamic business environments of the 21st century by planning and integrating the advanced analytics, machine learning, and natural language processing into the HR systems.

The body of AI application in HRM highlights the three areas that are interconnected, namely transactional processes automation, decision quality improvement, and HR role redefined strategically. The initial applications of AI algorithms were on e-recruitment and applicant tracking systems, where accuracy in screening and matching of applicants is enhanced which in turn resulted in time-to-hire and reduced administrative workload. Further research made its applications wider and took the opportunity to include predictive talent analytics, which are those tools that predict turnover, performance potential, and skills gaps, thereby allowing HR specialists to go beyond the reactive management approach toward proactive planning of the workforce. These developments are a symptom of a more general development within HRM, and it is evidence that AI is not just a technical boost, however, it can be strategically enabling and can support the intellectual capital and competitive nature of organisations (Murugesan *et al.*, 2023).

Restructuring of fundamental HR procedures is one of the most significant contributions of AI in HRM. In applicant hiring and recruitment, artificial intelligent based systems leverage machine learning and natural language processing to scale resume, social profile and behavioural analytics and reduce human biases, and enhance measures of candidate-job fit. On

the same note, AI-based performance management systems combine real-time feedback, sentiment analysis, and predictive performance modelling to supplement traditional appraisal systems. Studies have shown that these technologies are not only making operations easy, but also improving fairness and strategic direction by standardising the evaluation criteria and putting individual contribution against organisational objectives. As a result, AI is enhancing the HR department to be more strategic in its transactional processing of human capital flows rather than strategic.

One finds the strategic potential of AI in HRM in the context of its implications on organisational performance outcomes. There is empirical evidence indicating that companies that incorporate AI in their HR activities have witnessed increased productivity, engagement and retention of their employees, and this is ultimately converted into quantifiable performance outcomes. A case in point, predictive analytics allow detecting disengaged staff or high flight risk early enough to implement specific interventions to empower retention and minimize costs of turnover (Maharani and Siswanti, 2024). In addition, AI-based learning and development systems customise training plans in accordance with the profile of skills and performance trends of an individual, facilitating organisation-wide learning and flexibility. These are in line with the ever-increasing awareness that strategic HRM and organisational performance represent reciprocally reinforcing constructs, with technology serving as the driving force of bringing about consistency in human resources policies and competitive strategy.

In spite of the transformative potential of AI, major complexities and challenges in governance are also noted in the literature. Issues of algorithmic transparency, data privacy, and fairness are also matters of ethical concern in the academic field, with several studies cautioning that inadequately designed AI exacerbates biases and suggests that AI might hinder them. An example is that favouritism in training data may also bias recruitment algorithms, disadvantaging groups of people against others, and compromising equity objectives in organisations. Additionally, human judgment is substituted by automated systems, which bring up the issue of accountability and trust between employees, especially when the decisions made by the AI are not transparent to people. This means that the responsible use of AI in the HRM field must be implemented using strong governance systems that can achieve a balance between the technological efficiency and ethical necessity and human-driven values.

The current paradigms emphasize that the future of AI in HRM is not the situation when human decision-makers are replaced but rather assist the hybrid model of human-AI relations. This

outlook places the HR professionals as being integrators in the way that they can combine algorithmic insights in the contextual knowledge so that they can make strategic decisions that are conscious of both organisational goals and employee welfare. Recent sources propose the governance practices that require transparency, explainability, and unremitting observation of AI systems to guarantee fair results. Furthermore, the skills and workforce transfer studies point to the need to upskill HR practitioners to collaborate efficiently with AI technologies, make technological ability fit the organisational strategy and culture. These reasons support the idea that the strategic importance of AI in HRM depends on the organisational preparedness, ethical responsibility and alignment with long-term human capital interests (Samarasinghe and Medis, 2020).

The literature places AI as a strategic facilitator, which transforms HRM through efficiency in operations, aids evidence-based decision-making, and Smarter organisational performance. As much as implementation of AI in HR practices has paid off majorly, it is also associated with governance issues, ethical concerns, and humanity which must be well handled. It is thus anticipated in future studies to address not just the emerging advanced AI functions, but also the organisational, cultural, and ethical systems that would guarantee the AI is used to create sustainable, equitable and high-performance working environments.

2.2 Factors influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia

An emerging trend in the sphere of Human Resource Management (HRM) is the introduction of Artificial Intelligence (AI) so that organisations wished to use intelligent systems to enhance HR activities, decision-making, and strategic alignment. Although the main role of the traditional HRM was based on administrative and transactional activities, with the creation of AI, HR functions could be fully engaged in the success of the organisation on a more strategic level. The implementation of AI technologies, which include machine learning, natural language processing, predictive analytics, and intelligent automation, allows the HR professionals to process significant amounts of data related to employees, enhance the precision of forecasting, and relieve HR professionals of the heavy manual workload, which redefines HRM as a data-driven strategic partner. Nevertheless, the adoption level of AI in HRM depends on several driving forces which include; organisational readiness, technology infrastructure, human capabilities, perceived benefits and external environmental drivers. On the one hand, in the conditions of Saudi Arabia, these aspects are combined with specific socio-economic

processes, a national impetus towards digitalization within the framework of Vision 2030, so it is essential to not only analyse patterns of adoption, but also what factors impact the strategic implementation of AI in an HR practice (Ghedabna *et al.*, 2024).

The latest studies in Saudi Arabia give an idea of the perception and adoption of AI in the HR functions of organisations. Alshahrani *et al.* (2025) have examined the perception of HR managers in chemical industry and realized that the perceived usefulness of AI in HR processes differed, with recruitment, performance evaluation, and training being benefited by the knowledge and frequency of use of AI, but compensation and reward management was not affected by AI perceptions. This implies that the level of AI knowledge and the level of familiarity with the use of AI are significant factors influencing the level of attitudes towards its introduction in HRM. That is to say that HR professionals who have more knowledge and a working experience with AI will be inclined to view it as advantageous especially in domain where AI can perform unconscious or intricate tasks and in this way contracts the HR person to be able to perform tasks at a higher level of the strategic level.

In addition to personal familiarity, organisational and technological preparedness is also a key factor in the adoption of AIs. A survey on the adoption of AI in Human Resource Information Systems (HRIS) in Saudi manufacturing industries found relative advantage and compatibility to have a significant positive impact on AI adoption and the complexity, organisational readiness and security/privacy issues had a negative, albeit minor, impact on adoption decisions. Relative advantage denotes how comprehensible AI systems can be considered to provide superior results compared to existing techniques, including superior decisioning accuracy and efficiency, whereas compatibility is the extent to which the systems permeate the current organisational practices and principles. It means that organisations that consider AI to provide distinct competitive advantages and where AI solutions can be easily integrated with the current HR strategies tend to have a higher likelihood of adopting and integrating the AI solutions. On the other hand, the sense of complexity and fear of data privacy can result in avoiding AI usage, and technological infrastructure and ethical infrastructure could be identified within the influential factors.

Besides the organisational-level determinants, external environmental factors like government every intervention and strategies have a substantial impact on the implementation of AI on HRM in Saudi Arabia. The strategy of Saudi Vision 2030 and other projects, such as the National Strategy on Data and AI, have established AI as a cornerstone of national

digitalization and provided a favourable policy context in which AI can spread to different areas, including human resource functions. Organisational changes in how they manage their HR practices are encouraged by the government and strategic national priorities that almost orient the digital transformation concerns to the wider objectives and increase the perceived urgency and justifiability of AI implementation. Moreover, the creation of such bodies as the Saudi Data and Artificial Intelligence Authority (SDAIA), highlights the value of strong data management, data standards, and regulations which can facilitate, or hinder AI adoption of the HR practices based on their implementation strategies (Budhwar *et al.*, 2023).

The issue in human and cultural variables is also relevant to AI adoption in HRM. The studies, which are carried outside Saudi Arabia, though relevant to similar situations in the MENA, underscore the importance of the inclusion of employees, organisational culture, and ethics as key factors in the NAI acceptance and value extraction in the HR decision-making. These works demonstrate that the effective implementation of AI needs both technical implementation and the cultural preparedness, involving employee trust, participative change management, and the compatibility of these aspects with ethical issues, such as fairness and transparency of algorithms, and so on. The cultural readiness of the Saudi context, in which the presence of traditional HR practices and hierarchical organisational structure have long been the rule, turns out to be a decisive element in the shift towards digitally empowered HRM, which is efficient and equitable in its approach.

Regardless of the identification of these crucial elements, the number of Saudi-specific empirical research investigating the entire range of determinants that affect AI adoption in HRM is still very low. Much of the studies would be inclined more towards perceptions of the HR managers or applications particular to the sector, but not the general models of determinant factors per se. As an illustration, although AI is viewed positively in the recruitment and training spheres as the managers of Saudi chemical industry, the potential of loss of jobs and privacy show that the perception of risks and ethical judgments play a role in forming the decisions on the use of AI. This can be compared to the international literature that indicates these fears of the organisation of displacement, lack of faith in AI products, and the problem in ethical governance acts as constraints on the effective use of AI (Abul and Trinidad, 2026).

Additionally, related research like Saudi SMEs also indicates the presence of skilled staff, governmental regulation, and belief in AI, and vendor relationships as an important factor in AI adoption and utilization, so it can be assumed that these factors equally affect this practice

when taking place in the context of HRM. Experts in HR practices and knowledge of AI technologies elevate the ability to utilize AI solutions in the organisation, whereas trust and confidence in AI systems lower the resistance to change. Government regulation aims to offer an organized environment that stimulates investments and adherence and collaborations with technology suppliers guarantee the availability of expertise and novelty required to implement AI successfully.

Alongside these aspects, knowledge-sharing practices are observed to play the mediator role in the correlation between the HR strategies and AI adoption, especially among tech startups in Saudi Arabia. A study by Abuhaimed et al. (25) focuses on the effect of talent management strategies (including attraction, development, empowerment, retention, and career succession) on the outcomes of AI adoption in the presence of knowledge-sharing as a facilitating mechanism. This implies that learning, teamwork, and information sharing within the organisation can contribute hugely to the success of AI application in the HRM functions. Thus, internal communications, training, and HR competency formation become one of the influential factors to be integrated in HRM through AI in the long-term.

Altogether, this literature indicates that there is a complex interplay of individual, organisational, technological, and environmental variables, which determine the adoption of AI in the HRM. Although the enabling environment is provided by the positive perception and strategic government actions, the perceived complexity, data privacy issues, ethical factors, skills gaps, and cultural factors represent serious obstacles. In Saudi Arabia, the applicability of Vision 2030 and ongoing digital transformation initiatives offer a good macro environment in which AI can be adopted, but additional empirical research on how these two variables interact in HRM situations is required. These influencing factors are likely to become especially important as the organisations keep applying AI to HR functions, and furthermore, these factors need to be identified, measured, and addressed to attain strategic HR outcomes and improve the organisational performance in the digital era (Ahmed, 2018).

2.3 Major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices

Inclusion of Artificial Intelligence (AI) in Strategic Human Resource Management (SHRM) is one of the biggest changes in modern practice in organisations. AI technologies are becoming

integrated matters encompassing the entire HR functions around the world and include machine learning, predictive analytics, natural language processing, and robotic process automation in HR functions to foster better efficiency in recruitment processes, workforce analytics, employee engagement, and performance management. Within the framework of Saudi Arabia, the application of AI in HR is directly connected with the digitalization strategy of the state within the framework of Vision 2030 that focuses on the enhancement of technology, the diversification of the economy, and the development of human resources (Hukkeri and Pol, 2025). Although the government and policy interventions in this connection are rather active and supportive, Saudi Arabia organisations still have a lot of obstacles to adopting and implementing AI in strategic HR. The literature points out that although awareness of the potential of AI is currently increasing, the adoption of such increase into successful strategic integration is not balanced because of structural, technological, human, and cultural obstacles.

Among the leading challenges is associated with organisational readiness and digital maturity. SMEs have a low presence of digital infrastructure and disjointed HR information systems in many Saudi organisations, especially small and medium sized enterprises (SMEs). The implementation of strategic AI integrations, which will be made, entails the strength of data structures, merged enterprise systems, and scaling cloud infrastructure. Nevertheless, most legacy HR systems are not interoperable with new high-tech AI space, forming technological barriers that do not allow integration. The absence of standardized data formats, centralized databases, and social capabilities of real-time analytics make AI-driven decision-making unreliable or inefficient. Lack of the quality structured data also adds to this problem since AI algorithms are quite sensitive to large and clean data to provide meaningful results. As such, companies often suffer implementation losses or poor adjustment of AI systems because of poor technological bases.

The second notable obstacle that is seen in literature is the lack of AI-related skills in the HR departments. Successful AI implementation in SHRM demands both a technical and data-literate, as well as strategically knowledgeable, HR. The technological aspiration and labor capacity discrepancy in Saudi Arabia is tangible. The skills and knowledge of HR professionals are usually poorly developed to analyse insights generated by AI, and data scientists might be unaware of the context of HR practices and organisational behavior. This skill discrepancy prevents cooperation between technical and HR units, as it restricts the strategic implementation of AI resources. In addition, reliance on external vendors on AI solutions raises

other issues concerning customization, control and sustainability of the system in the long run. Organisations that cannot develop internal capability will face the threat of superficial adoption as opposed to strategic integration.

Resistance toward AI on a cultural and an organisational level also has a pivotal role in depressing the adoption of AI in SHRM. The Saudi organisational culture that has values rooted in hierarchical decision-making and humanistic approach to organisational management can provoke apprehensive approaches towards automated systems when it comes to sensitive areas of HR like recruitment, performance appraisal, and promotional decision-making. Responsibility to job loss, loss of human judgment, and decreased interpersonal interaction are all complaints that are frequently expressed by employees and managers (Ubale, Lakhangaonkar and Ubale, 2021). This opposition is especially acute in cases when AI systems are seen as substituting human decisions but not supplementing them. Studies are telling that trust of technology plays an overall major part in the AI acceptance; when staffs feel that AI algorithms are opaque or biased, it will create more scepticism, thus undermining organisational commitment to digital change programs. That is why change management strategies, clear communication, and participative implementation processes are a necessity but in most cases are not properly developed in most organisations.

Another aspect that makes integration of AI to SHRM in Saudi Arabia more complex, is ethical and regulatory considerations. The enactment of the Saudi Personal Data Protection Law (PDPL), has enhanced data privacy conditions, requiring the tight control over the information concerning employees. The AI-based HR systems handle very sensitive information, which can be performance indicators, behavioural data and personal data. High-level cybersecurity strategies, encryption measures, and risk management systems are necessary to ensure the national regulations are complied. Most organisations struggle with balancing innovation and regulatory compliance, especially when the AI solutions are subcontracted by foreign vendors that have different legal systems. Also, the ethical issues of algorithmic bias, fairness, and discrimination pose some ethical problems. Provided that AI recruitment tools give preference to some groups of people because of biased training data, organisations can lose their reputation and be scrutinized in court. The unavailability of clear ethical rules and AI regulation models that are incorporated into the policies of corporate HR positions also worsens these risks.

The other obstacle will be financial constraints, especially to smaller organisations. The use of AI involves high initial cost of application software, upgrading of infrastructure, employee

training and maintenance. Although big companies in industries like banking, oil and gas, and telecommunication can have the financial means to test AI-based HR systems because most of the SMEs are constrained by a tight budget. The uncertainty surrounding the prospect of the future payoff (ROI) can usually deter decision-makers to undertake wholesale entities of changing their AI setup. Additional to that, AI advantages of SHRM, including better retention of talents, better workforce planning on predictive workforce planning, and better strategic alignment are not at all tangible and frequently hyper-long-term, and organisations find it hard to justify the immediate financial outlay (Priya, 2025).

The areas of leadership commitment and strategic alignment also turn out to be the essential success factors of successful AI adoption. As per literature, the initiative of digital transformation cannot be successful as it is often considered as a separate IT project not positioned as a strategic priority. The use of AI in Saudi organisations is still restricted to the operational HR functions like automated resume screenings or chatbots when inquiring employees without being involved into more comprehensive strategic workforce planning systems. Lack of leadership vision that can tie AI capabilities to business objectives cripples the transformative capabilities of such technologies. Strategic HRM involves AI applications that are utilized to facilitate evidence-based decisions made at the executive level, relating talent analytics to corporate performance indicators. In the absence of top management support and cross-functional cooperation, AI initiatives will be divided and have minimal effect.

The other issue is the inclusion of AI into the workforce policy and localization programs like Saudization (Nitaqat). Companies must strike a balance between AI-powered efficiency and national employment targets to achieve more local employees. Automation of some HR processes can be understood as being incompatible with the objective of generating employment, which poses problems at the policy level. Besides, the contextual customization of AI systems to capture the local cultural values, language taste, and labour laws may be time-consuming and labour consuming.

Lastly, there is uncertainty and risk brought about by extreme speed of the technological change. AI technologies are constantly developing, being updated regularly, new algorithms are being proposed, and new ethical regulations emerge. It is possible that organisations in Saudi Arabia will not be able to follow global best practices without facing operational challenges. There are no standardized benchmarks of AI in HR to measure the performance of AI; this further complicates the task of evaluating and improving constantly. Consequently,

other organisations have become slow and incremental, not fully integrating until they have a better framework and success model.

As it has been discussed, Saudi Arabia has shown macro-level dedication towards digital transformation, but organisations face complex barriers to the adoption and integration of AI into Strategic Human Resource Management. Such obstacles are technological constraints, skills deficits, cultural opposition, regulatory and ethical tussles, financial limitations, misaligned leadership and contextual policy. The solution to these impediments and barriers will entail a comprehensive strategy that involves the infrastructure planning, skills development of workforce, ethical governance systems and top leadership dedication. Companies using AI as a strategic enabler can only make the full use of this tool to maximize the value of human capital management and promote sustainable organisational performance in the Saudi environment through concerted efforts.

2.4 Strategic opportunities that Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia

The adoption of Artificial Intelligence (AI) in Human Resource Management (HRM) has become an emerging trend that is seen to fundamentally change the approach to strategic alignment, efficiency in operations, and performance within the organisation. The use of AI in the HR functions in the context of serving Saudi Arabia is well linked to the national agenda of change at large in the context of Vision 2030, where the focus is to change the country towards digital innovation, human capital, and knowledge-based economic growth. AI offers massive potential to enhance decision-making, workforce planning, and talent optimization as the Saudi organisations move away to less traditional administrative HR models towards Strategic Human Resource Management (SHRM). According to the literature, AI not merely automates routine HR processes but also make the HR scenario highly strategic by means of data-driven insights, predictive analytics, and customized employee experiences. The change makes HR no longer a transactional activity, but a strategic partner, which can directly add to competitive advantage and sustainable performance (Gowri and S, 2025).

Out of the strategic opportunities that AI has brought, one of the most concentrated opportunities is the possibility of the increased effectiveness of HR due to the advanced systems of recruitment and talent acquisition. Automated systems AI platforms use machine learning and natural language processing to process data on large numbers of candidates, call

competencies to job specifications, and forecast candidate performance through past performance trends. In Saudi Arabia, organisations are competing to get local and international talent, AI-sourced recruitment tools make the whole process more efficient in terms of time-to-hire, as well as the quality of decisions to hire. These technologies also facilitate the localization efforts in the Kingdom as they help find the right Saudi employees based on skills complementing matching and not necessarily based on the conventional screening requirements. Moreover, chatbots and automated communication systems can enhance the interaction with candidates and the employer brand, which makes organisations more competitive in the labour market through AI.

AI opens opportunities to better workforce analytics and strategic planning besides the enforcement of recruitment. Predictive analytics tools enable the HR leader to predict workforce needs, possible skills gaps, and predict possible turnover. With the fast diversification of the Saudi Arabian economy especially in areas like technology, health, tourism and renewable energy, precise workforce planning is needed to help match talent provision with new developmental requirements in the industry. Analytics powered by AI lets companies to go beyond responding to workforce demands and can pursue proactive talent strategy, enhancing agility and resilience. Using employee performance data, the engagement data, and the result of the training, organisations would be able to understand high-potential employees, create specific retention or compensation plans, and streamline their succession planning. The capabilities lead to stability of organisations and continuity of leadership in the long run.

The chance of developing the workforce and engaging in lifelong learning also offers significant opportunities to AI. Individuated learning platforms that are driven by AI can suggest training modules to an individual, given the local ability outcomes, performance metrics, and employment objectives. This model of adaptive learning increases the ability to develop employees because it offers personalized content that changes as per the demands of the workforce. The AI-supported learning ecosystems can help the Saudi population achieve the national human capital goals in the context in which much attention is paid to the process of upskilling and preparing a more knowledge-intensive population. The organisations may use AI to track competency growth, training efficacy, and investor compatibility of learning with strategic objectives. By fostering a culture of continuous development, AI enhances employee

engagement, job satisfaction, and productivity, ultimately strengthening organisational performance.

Another area, in which AI has strategic value, is those performance management systems. The conventional method of appraisal usually bases itself based on the periodic evaluations which can be subjective or inconsistent. The performance management platforms that are based on AI offer real-time diagnostics, behavioural data and objective performance measures. These systems help managers to determine trends in performance and give timely interventions, as well as to match individual input and organisational strategy (Yawalkar, 2019). Such systems would assist in increasing the level of accountability and transparency in Saudi organisations aiming to be globally competitive as well as minimizing managerial biases. Also, using AI can be used to study the sentiment of the employees via internal communication tools to understand their morale and organisational climate. The identified insights help the HR leaders to introduce specific initiatives that enhance the engagement and workplace culture.

Strategically, AI will maximize the role of the HR in contributing to the organisational performance because the technology enables the HR to make evidence-based decisions. The combination of big data analytics in HR activities allows the leaders to analyse how HR policies affect financial performance, productivity, and innovations. Through numerical measurement of the correlation between talent management practice and business performance indicators, the HR departments are empowered and credible at the highest level. The implementation of AI-based HR analytics in Saudi Arabia, where the organisations are progressively embracing performance-based management systems, enhances the strategic alignment of the human capital measures and the corporate goals. This orientation is essential towards sustainable growth in both competitive and aggressive domestic and global markets.

The opportunities of improving the employee experience and engagement are another practice AI can help with. state-of-the-art virtual assistants, automated HR service centres, and self-service platforms simplify the process of regular HR interactions, and employees can find the information and services provided with the help of artificial intelligence. This convenience in digital format enhances satisfaction, and the HR professionals have more time to concentrate on strategic activities. Moreover, AI systems will be capable of analysing the employee feedback, survey, and communication trends to identify the areas that should be intervened with. Organisations treating issues beforehand create a positive and accommodating workplace. The engagement strategy driven by AI helps in the area of retention and

commitment towards the organisation in the Saudi Arabian changing work environment (where workforce diversity and generational differences increase).

The other strategic opportunity is the development of innovation and knowledge management. AI solutions are able to detect collaboration patterns, propose cross-functional teams, and provide exchange of knowledge between departments. Such abilities improve the learning and innovation skills of organisations. With Saudi Arabia aiming to establish itself as an innovation hub in the region, organisations that use AI to develop knowledge-based cultures have an added benefit (Rao, Gupta and Rakhi, 2025). The HR systems with AI assistance can also help assess the competencies of innovations and the effectiveness of achieving the strategy of talents in accordance with the national economic priorities, i.e., the digital transformation and entrepreneurship.

In addition, AI helps with the promotion and inclusion programs by minimizing unconscious bias during recruitment and promotion choices. Carrying out AI algorithms effectively imposes standards of evaluation and prioritises competency-based evaluation in order to design and regulate them. Nowadays, within the contexts of Saudi, where participation in the workforce by women and young people is growing, AI-driven HR systems can foster equal and nonjudgmental opportunities and merit-based progress. Artificial intelligence promotes organisational reputation and fosters social sustainability goals within the national development strategies through enhancing fairness and transparency.

Lastly, AI integration in HRM brings about the agility of the organisation. Organisations in dynamic and volatile business settings need to have flexible workforce system and responsive talent management system. The use of AI helps in planning, simulations of workforces and forecasting strategies that allow organisations to be flexible to changes in the economy or technology. In the case of Saudi companies functioning in a changing economic environment, this agility is the reason to remain competitive and stay afloat.

The literature confirms the existence of significant strategic possibilities in improving HR performance, employee growth, and organisational achievement in Saudi Arabia using Artificial Intelligence. AI makes HR a value-generating strategy by facilitating advanced workforce planning, predictive workforce planning, family learning, real-time performance management, and evidence-based decision-making. Using AI to speed up development of the human capital and making organisations more competitive is possible when IT is aligned with

national digital transformation objectives and effectively supported by the effective governance systems. The social and political environment will determine the success of these opportunities through good implementation, upskilling of its workforce, high ethical standards, and tactical leadership. Holistic integration can make AI one of the significant facilitators of sustainable development and innovation in Saudi organisations.

2.5 Recommendations that can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia

The increasing appreciation of Artificial Intelligence (AI) as a strategic facilitator in seeking the Human Resource Management (HRM) has created considerable academic speculation on the ways of realizing effective adoption and integration. The opportunities of AI in improving Strategic Human Resource Management (SHRM) are significant in Saudi Arabia, where the digitalization process is well stimulated via the vision 2030, as well as the Saudi national innovation policies. Nevertheless, it has always been stated in the literature that the effective integration of AI cannot be considered only as a technological project but a multidimensional process that deals with organisational culture, executive determination, governance systems, employee potential, and business strategies. To make AI add value to the performance of organisations, scholars suggest a comprehensive and systematic process of adoption that comprises of technological, human, and institutional aspects (Priksat *et al.*, 2023).

One of the major suggestions presented in the literature is to enhance organisational digital preparedness and infrastructure. The use of AI in SHRM needs well-developed data ecosystems, integrated information systems on HR, and scalable cloud-based architectures that can accommodate advanced analytics. Companies in Saudi Arabia are advised to invest in updating old HR systems and institutionalizing centralized data management systems to have high quality, structured and inter-operable datasets. Effective data governance frameworks enhance the accuracy of the algorithms and the reliability of decisions, enhancing the confidence of the managers in the AI-driven insights. The studies also indicate that pursuing company-wide digital approach as opposed to single HR automation efforts increases the cohesiveness and longevity of AI integration projects. Once AI plans are implemented as part of an overarching digital transformation strategy, companies will be in a better position to exploit departmental synergies and deliver quantifiable performance value.

The other important suggestion is the development of AI capabilities and the capacity of the workforce. It has been noted in literature that technological investments should be followed by the significant investment in human capital. HR professionals need data literacy, analytics interpretation, and digital strategy upskilling to be able to use AI tools. In the Saudi environment, where localization of talent and workforce development represent the national agenda, the companies are to introduce the structured training programs, certifications, and cross-functional learning programs, which will involve the integration of HR skill with the principles of data science. Universities and professional institutions have an opportunity to work with corporations to develop special courses in HR analytics and AI governance (Murugesan *et al.*, 2023). Development of internal capabilities lessens the reliance of external suppliers and boosts self-reliance of the organisation in the management of AI. Furthermore, the promotion of interdisciplinary cooperation between IT specialists and HR leaders will enhance the capacity to innovate, and the system of artificial intelligence is compatible with the strategic HR goals.

The commitment of leaders and alignment strategies with the organisation are always noted as key pillars of successful AI adoption. It is emphasized in literature that the support at the top management level plays an important role in the success of the digital transformation. Senior executives in Saudi organisations should be able to express the concrete vision of the AI as a strategic investment and not an expense-cutting automation mechanism. By staging AI-enabled HR programs to corporate performance indicators like productivity increase, employee satisfaction, innovativeness, and turnover ratios, AI will ensure that it delivers a value directly to the organisation. Co-ordination, responsibility, and continuity in implementation can be promoted by formation of cross-functional guiding committees along with the appointment of AI champions within their HR units. Whenever leadership effectively encourages a culture of innovation and constant improvement the minimize the resistance to technological change and improve the rate at which employees engage in AI initiatives.

Another fundamental aspect of appropriate AI integration is ethical governance and regulatory compliance. Since employee data is a sensitive type of data and considering the regulation scheme that is controlled by the Personal Data Protection Law (PDPL) in Saudi Arabia, it is necessary that the organisation should adopt an extensive framework of AI governance. It has been suggested by literature that clear policies that support data privacy, algorithmic fairness, bias, and accountability policies be implemented. AI systems applied in the recruitment,

promotion, or performance appraisal should be periodically audited to identify and rectify any bias. Clearly communicating about the process of making AI decisions increases trust between employees and organisational legitimacy. The application of ethical AI principles into the corporate HR policies will mean that technology innovation will be in line with cultural values, social expectations, and legal requirements. These forms of governance do not just eliminate risk; they also improve reputation of the organisation and its survival over time (Maharani and Siswanti, 2024).

It is also highly recommended that change management strategies should be practiced ensuring the adoption of AI. The primary source of opposition to AI is likely the fear of job loss or loss of independence or the fear of unfamiliarity with the complexity of technology. The research in literature implies that active communication, collaborative implementation practices and worker engagement in the design of the system would greatly diminish the resistance. The acceptance of AI in Saudi organisations can be supported with the help of culturally sensitive change management strategies according to which AI should be viewed as an augmentative app, not as one that has to replace human judgment. Pilot projects and gradual implementation strategies enable organisations to test AI applications, receive feedback and optimize systems prior to massive implementation. This gradual system is a source of confidence among stakeholders and tangible benefits are seen thus increasing the commitment of an organisation to digital transformation.

Another effective AI integration enabler also consists of strategic partnerships and ecosystem collaboration. The organisations can partner with technology companies, research centres, and government bodies to get experience, exchange their best practices, and speed up the innovation process. Public-private partnerships, which are associated with projects related to Vision 2030 projects, in Saudi Arabia, allow sharing the knowledge and competing to develop AI-based projects that will suit the needs of local workforce. Benchmarking and constant learning is promoted through participation in digital innovation hubs and industry forums. This type of engagement between the ecosystem increases the organisational flexibility and makes sure that the use of AI is a global best practice and local contexts consideration.

More so, the literature emphasises that it is crucial to consider AI impact by means of performance metrics and systems of constant check-ups. Companies must develop effective key performance indicators (KPIs) that would provide the extent by which AI-enabled HR programs aid business performance. Measures can be measured in terms of time-to-hire, better

employee engagement scores, more effective training, better retention, and more productivity. Frequent scrutiny is given to organisations to improve AI strategies and make them be aligned with the changing organisational goals. Performance measurement is also used in the Saudi setting to facilitate accountability to meet the national workforce development targets and economic diversification objective (Samarasinghe and Medis, 2020).

Finally, to maintain AI integration in SHRM, a culture of innovation and learning should be encouraged. The perception of technology, its adoption, and exploitation are grasped by organisational culture. Digital resilience is enhanced by promoting experimentation, sharing of knowledge and adapting through thought. HR departments can take the leading role in the development of this culture through the promotion of digital literacy training, identification of new innovative practices, and inclusion of AI skills into leader development programs. The fast-paced economic environment of Saudi Arabia requires the development of such a progressive culture as the adoption of AI will help such a tool become an active strategic resource and not a dead-end technological investment.

According to literature, the effective adoption and integration of AI in Strategic Human Resource Management in Saudi Arabia is an issue that needs a multidimensional approach. The main suggestions are to build stronger digital infrastructure, invest in workforce upskilling, assure leadership buy-in, deploy ethical governance systems, use systematic change management models, build ecosystem alliances, and install strict evaluation systems. Under such circumstances, AI can turn HR into the strategic engine of organisational performance, which operates in favour of the corporate competitiveness goals and the national developmental goals. By strategically planning or designing, engaging in ethical stewardship and constant capability development, Saudi organisations will be able to utilize AI to attain sustainable development as well as increasing effectiveness in human capital.

2.6 Research Gaps

Even though the topic of adopting AI in HRM is widely researched globally, there is a gap of insufficient empirical studies of the topic in the context of Saudi Arabia. Majority of the existing research has been theoretical, exploration-based or concentrating on the overall digital transformation but not exploring the integration of AI into Strategic HRM as a performance-booster mechanism. This poses a contextual issue because results obtained in Western

economies may not be transferable to Saudi Arabia because of the cultural differences, regulating habits and systems, labour make-up and country development orientation.

There is a major deficit in knowledge regarding the strategic connection between AI-based HR processes and quantifiable organisational performance results in Saudi companies. Although the literature shows that AI enhances efficiency and decision-making, there is a lack of empirical support that will assist in showing how AI-based SHRM has a direct impact on productivity, innovation, employee engagement, financial performance, or competitive advantage in the Saudi setting. Numerous studies are on the existence of operational benefits instead of strategic value creation.

The absence of integrative theoretical frameworks used in the adoption of AI in Saudi HRM research is also in place. Not many studies apply systematically to explain the development of AI capabilities as strategic inputs of HR functions the Technology-Organisation-Environment (TOE) model, Resource-Based View (RBV), Dynamic Capabilities Theory, or the Institutional Theory. This theoretical gap constrained the knowledge of how AI can be used by Saudi organisations to provide sustainable competitive advantage.

The other gap that is worth mentioning refers to organisational preparedness and digital maturity measurement. Although infrastructure, leadership support and availability of skills have been discussed as key variables in the literature, there is little empirical research that organized measurement of the variables in Saudi enterprises. Little research has been done to acknowledge the role of digital preparedness to mediate between the AI adoption and HR performance, especially on various contexts (public vs. private, large corporations vs. SMEs).

The issue of the human aspect of AI implementation, especially among employees, beliefs, opposition, and moral issues in Saudi workplaces is also under-researched. The adoption of AI and culture, hierarchies, and social norms can have a significant impact on AI acceptance, and, therefore, there is not much empirical evidence about the employee beliefs regarding AI-made HR systems in Saudi Arabia. The behavioural and cultural factors are necessary to be learned to make the implementation successful.

Moreover, minimal analysis of AI regulation and ethical concerns in Saudi companies is done. Although regulatory frameworks like data protection laws are present, the implementation of ethical principles of AI in HR practices at the organisation level is avoidably analysed in

scholarly research. Problems like the algorithmic bias, equality in employment, and accountability on AI-based performance analysis are under-researched in Saudi.

There also exists a research gap in workforce development and localization (Saudization/Nitaqat). Limited empirical studies are analysed on how the deployment of AI-based HR systems can facilitate the national employment targets, improve the advancement of skills within Saudi-based individuals, and meet the human capital targets of Vision 2030. The interplay between AI automation and national labour force policy is a newer field that is yet to be sieved out in an organized manner.

Furthermore, most of the currently available research is based on cross-sectional design, which makes it difficult to estimate long-term effects of performance and sustainability of AI integration. Longitudinal research to investigate the changes in AI adoption with time and the development of strategic HR building based on constant learning and adjusting is also needed.

Lastly, there is a lack of research comparing the sectoral difference in the adoption of AI in Saudi Arabia. Oil and gas, banking, healthcare, tourism, and technology are the industries in which the digital maturity and workforce level vary widely, but there is a lack of comparative studies based on analysing industry-specific obstacles and opportunities.

Chapter 3

Methodology

3.1 Overview of Research Problem

In the ever-changing digital economy of these times, organisations are faced with pressure to be more productive, more innovative and compete. The adoption of Artificial Intelligence (AI) into the business processes has gained traction in all industries, but the strategic use of it in the framework of Human Resource Management (HRM) is unequal and still lacks comprehensive comprehension. Although most companies are using AI-based tools to facilitate recruitment, performance analytics and workforce planning, the vulnerability lies on the paucity of empirical studies on the mechanisms of AI as a strategic enabler as opposed to an operational or administrative support system. This is a more serious issue in the developing digital economies where the technological change is being done at the national level.

The Information Technology (IT) industry is fast growing in Saudi Arabia in the framework of the digital transformation agenda, in accordance with the Vision 2030, and its employment is also wide, about 2,70,000 IT specialists are estimated in the country. This expansion has brought about continuing problems of talent crunches, elevated job turnover, skill gaps, restricted predictive human resource planning and performance management system inefficiencies in the organisations. The introduction of AI technologies to the HR functions is usually decentralized even though they are not integrated with any wider strategic human resource management (SHRM) goals. Therefore, organisations are not able to convert AI adoption into organisational performance improvement that would be quantifiable.

Additionally, the study that investigates the relationship between AI-centered HR practices and the major indicators of organisational performance concerning the Saudi Arabian IT sector is deficient. Current literature pays much attention to technological potentials or automation of operations but does not consider how AI acts as a mediator or enabling factor in the increased presence of human capital strategies and business objectives. Moreover, the issues of data privacy, unethical application of algorithms, unwilling to change technologies, and low levels of digital skills among HR professionals represent additional obstacles to successful AI implementation.

Thus, the key research question of the proposed study is the exploration of the role of AI as a strategic facilitator of Human Resource Management as well as the analysis of its influence on changing the performance of organisations in the Information Technology industry in Saudi Arabia. The aim of the study is to fill the gap between the adoption and the strategic implementation of AI, which deems to discuss whether AI-based HR practices can lead to improved employee performance, organisational efficiency, innovation potential, and general competitive advantage.

This study will serve as an empirical study to provide managerial implications and understanding of how AI integration can be utilized to enhance human resource management but not as a technological solution, but rather as a strategic resource in changing the organisational goals and strategic intent.

3.2 Operationalizing the theoretical constructs

The operationalization of the theoretical constructs will entail the implementation of abstract concepts (including the Artificial Intelligence integration, Strategic Human Resource Management, and Organisational Performance) into the empirically testable measurable variables. The primary constructs in the given study are Artificial Intelligence in HRM, Strategic Human Resource Management (SHRM), Organisational Performance, and the factors influencing the adoption of AI (technological, organisational and environmental factors). All the constructs have specific conceptualizations, which are then converted into observable measures with validated measurement scales based on previous literature.

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platforms, (4) workforce predictions and (5) AI-assisted workforce engagement systems. The respondents will rate the use of AI and perceived success in each of the functions.

The alignment of HR practices to long-term organisational goals in order to build competitive advantage is referred to as Strategic Human Resource Management (SHRM) (Mediating Variable). Strategic alignment of HR to business objectives, talent management activities, workforce planning efficiency, leadership development programmes, HR strategic decision-making can be taken as indicators of operationalizing SHRM. These items could be gauged on a perception level scale which is based on existing SHRM frameworks, with how inclusive the contribution of HR in organisational strategy is.

Organisation Performance (Dependent Variable) is that of a general performance and effectiveness of the organisation in its goal achievement. It could be operationalized both through financial and non-financial indicators of performance. Perceptual measures are popular in survey-based research as well and these are employee productivity, ability to innovate, operational efficiency, service quality, employee retention rate and overall competitive advantage. The respondents consider improvements in these performance indicators that took place because of AI-enabled HR practices.

3.3 Research Purpose

This study is aimed at analysing the role of Artificial Intelligence (AI) as a strategic enabler in the Human Resource Management (HRM) and to assess the effects of Artificial Intelligence on the performance of the organisations in the Information Technology industry of Saudi Arabia. In the recruitment, performance appraisal, workforce analytics, and employee engagement processes, AI technologies were applied, but there is scanty empirical evidence on the strategic impacts of this technology in the attainment of long-term organisational objectives. The proposed research will fill that gap by exploring how AI-based HR practices relate to the implications of Strategic Human Resource Management (SHRM) concepts and optimize efficiency, innovative practices, employee productivity, and organisational competitive security.

The main aim of the study is to discuss the role of Artificial Intelligence (AI) in Human Resource Management (HRM) as a strategic implementation and the influence it has on

organisational performance in the Information Technology industry of Saudi Arabia. Although there is a trend of adoption of AI technologies in the recruitment process, performance assessment, workforce analytics, and employee engagement, there is scarce empirical knowledge that can be used to understand how AI-based technologies can be used strategically to achieve long-term organisational objectives. This research will fill this gap by examining the degree to which AI-ER practices are consistent with the Strategic Human Resource Management (SHRM)-principles and how they contribute to organisational efficiency, innovation, staff productivity, and competitiveness.

3.3.1. Research Questions

- **RQ1:** What are the factors influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia?
- **RQ2:** What are the major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices?
- **RQ3:** What strategic opportunities does Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia?
- **RQ4:** What strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia?

3.3.2. Hypothesis of the study

- **H01:** There are no significant factors that influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia.
- **Ha1:** There are significant factors that influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia.

- **H02:** There are no major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices.
- **Ha2:** There are major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices.
- **H03:** There are no strategic opportunities that Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia.
- **Ha3:** There are strategic opportunities that Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia.
- **H04:** There are no strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia.
- **Ha4:** There are strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia.

3.4 Research Design

The research design adopted in this study is quantitative research design based on structured survey. The study uses a cross-sectional research design to analyse the connection between the adoption of AI, Strategic Human Resource Management, and organisational performance.

Sampling design

The proposed sampling design for the study will be as follows: -

(i) Population or Universe: - The target of this study is the employees that are in the Information Technology (IT) industry in Saudi Arabia. The study is geographically concentrated on three key technology centres (Riyadh, Jeddah and Dammam) that have a prominent agglomeration of IT companies and digital innovation operations. Thus, the three cities are the universe of the study and are the main population of which a sample will be drawn.

(ii) **Sampling technique:** - This research will use purposive sampling method, which is a non-probability sampling method whereby the respondents will be chosen on the basis of traits that are of importance in the research purpose. The methodology is suitable since the research will focus on the Information Technology (IT) professionals who have knowledge and experience in the adoption of Artificial Intelligence and HR practices in their respective organisations. The research will use a self-selected study population to ensure that the data are gathered by individuals with understanding on the strategic implementation of AI in Human Resource Management as the sample includes those in the field of IT in Riyadh, Jeddah, and Dammam.

(iii) **Sample size:** - The suggested sample of the current study will be 600 respondents who will be chosen among the target population. The number of Information Technology (IT) professionals in Saudi Arabia is approximated to be about 270,000. Thus the propose study intends to select a representative sample of this group with emphasis on the IT professionals in Riyadh, Jeddah, and Dammam. (Source: https://oxfordbusinessgroup.com/reports/saudi-arabia/2019-report/economy/emerging-employment-growing-the-domestic-workforce-and-preparing-for-jobs-of-the-future-are-key-to-sector-plans?utm_source=chatgpt.com)

Determining the sample size using **Cochran's formula:**

$$n = \frac{Z^2 \cdot p \cdot (1 - p)}{e^2 + \left(\frac{Z^2 \cdot p \cdot (1 - p)}{N} \right)}$$

Figure 1Cochran's formula

Where:

- $Z = 1.96$ (Z-score for a 95% confidence level)
- $p = 0.5$ (assumed proportion)
- $e = 0.05$ (margin of error)

$N = 270000$ (Population Size)

There is an approximate of 384 samples. Concerning the current research, the sample size would be determined as 600 since a larger sample will be conclusive and accurate findings.

Table 1 Number of respondents

S.No.	Name of City	Number of respondents selected for data collection
1.	Riyadh	200
2.	Jeddah	200
3.	Dammam	200
Total		600

(Source: Computed by Scholar)

(iv) Questionnaire design: A questionnaire will be constructed as a self-administered form which will be pre-tested to ensure it is easy to understand and use and later given to respondents to help in gathering primary data to respond to the research objectives. The instrument will make use of a five-point Likert scale, which is viewed to be suitable in measuring the perception and attitude of the respondents in addition to the degree of agreement towards the adoption of Artificial Intelligence and Strategic Human Resource Management practices. This method supports the process of the collection of observable and measurable information in a systematic way so that one can conduct powerful statistical analysis. The research aims at investigating and empirically exploring the correlations between given variables hence creating meaningful correlations between AI adoption, SHRM and organisational performance.

Sources of data

- (i) **Primary data:** Information from respondents collected through online survey method.
- (ii) **Secondary data:** This study used secondary data that was gathered in diverse books, unpublished materials, research articles, magazines, government reports, brochures, conference proceedings, periodicals, and valid online platforms. Long literature review on secondary information relevant to the study was conducted, helped to identify key variables,

the contemporary issues and a better understanding of the conceptual and theoretical basis of the research.

Tools and techniques of analysis

The collected data in the form of survey will be coded, tabulated and analysed under SPSS version 26.0. This statistical software has an advantage in that the data analysis is accurate, reliable, and consistent. It makes it easier to apply the necessary statistical methods and review the results in a set and organized form, which will make the interpretation of the results more accurate and significant.

Details of Tools applied in data analysis

1. Frequency Analysis
2. Descriptive analysis
3. Reliability Testing
4. Independent Samples T Test
5. ANOVA
6. Correlations Test
7. Factor Analysis

3.7. Limitations of the Study

- Three cities, namely, Riyadh, Jeddah, and Dammam were only possible for survey.
- 600 employees only from IT industry taken for study.
- Only information technology industry is explored in the current research.

3.5 Conclusion

AI is a groundbreaking and strategic enabler in the Human Resource Management context, as it can be used to better the standard of data-driven decision-making, facilitate the efficiency of HR activities, and increase the correspondence between the policies of human capital and the objectives of the organisation. AI can be applied in recruitment, workforce analytics, performance management, and training to optimize the administration process and guarantee Strategic Human Resource Management in accelerating Innovation, productivity, and competitive advantage. Nevertheless, the success of AI implementation is predetermined by

technological preparedness, executive backing, organisational culture, workforce skills, and ethical administration. With the systematic implementation of AI into HR, companies, especially in a highly digitalizing economy like Saudi Arabia, will be able to attain sustainable organisational performance and long-term development in the changeable digital environment.

Chapter 4

Results

Results

Results part of a study shows the results derived out of the data analysis without interpretation or view. It is objective in reporting what it found out using statistical tests, tables, and figures. Results of the analysis like descriptive statistics, reliability tests, correlation analysis and other statistical procedures applied in the study will be included here. The aim of the results section is to remove uncertainties by simply and systematically displaying the numerical data and assess the data in terms of answering the research questions or hypotheses. It merely relies on details that have been obtained after analysis and clarification, and interpretation of the results is a subject of discussion in the discussion section.

PART-I

Demographic Analysis

Table 2 Age Distribution

Age Distribution	Frequency	Percentage
Below 29 years	132	22.00%
30 to 39 years	182	30.33%
40 to 49 years	174	29.00%
Above 49 years	112	18.67%

(Source: Computed by Scholar)

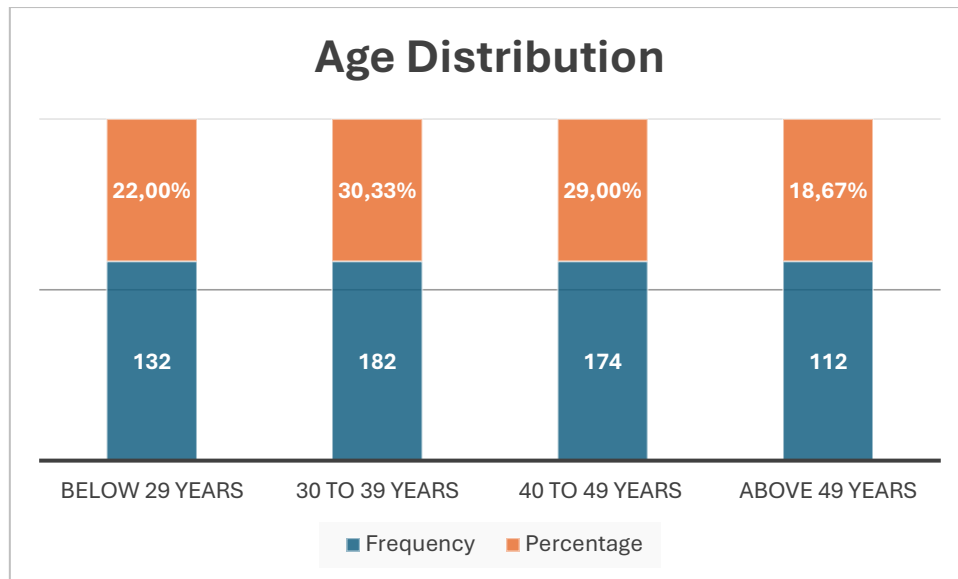


Figure 2 Age Distribution (Source: Computed by Scholar)

The age distribution of respondents in the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” reflects a well-balanced representation across different career stages, thereby strengthening the validity and generalizability of the findings.

The largest proportion of respondents (30.33%) falls within the **30–39 years** age group (182 participants). This indicates that mid-career professionals constitute the dominant segment of the sample. Individuals in this age range are typically actively involved in managerial, supervisory, and strategic HR functions, and are more likely to engage with emerging technologies such as Artificial Intelligence (AI) in organisational settings. Their perspectives are particularly valuable in assessing AI adoption and its impact on HR practices and performance outcomes.

Closely following this group is the **40–49 years** category, representing 29.00% (174 respondents) of the total sample. This segment often includes senior managers and experienced HR professionals who play a crucial role in strategic decision-making and policy formulation. Their inclusion suggests that the study captures insights from leadership-level employees who influence AI-driven transformation initiatives within organisations.

The **Below 29 years** group accounts for 22.00% (132 respondents). This younger cohort may represent early-career professionals and digitally native employees who are generally more adaptable to technological innovations. Their perspectives contribute to understanding how AI tools are perceived and utilized by emerging HR talent in Saudi Arabia.

Finally, respondents **Above 49 years** constitute 18.67% (112 participants) of the sample. Although this is the smallest group, it remains significant, as these individuals often hold top management or advisory positions. Their views are critical in understanding strategic acceptance, resistance, or governance concerns related to AI implementation in HRM.

Overall, the distribution demonstrates a diverse and balanced age representation, with a strong concentration (59.33%) between 30 and 49 years. This suggests that the study predominantly reflects the perspectives of experienced and strategically positioned professionals, which enhances the reliability of conclusions regarding AI as a strategic enabler in Human Resource Management within the Saudi Arabian organisational context.

Table 3 Gender

Gender	Frequency	Percentage
Male	368	61.33%
Female	232	38.67%

(Source: Computed by Scholar)

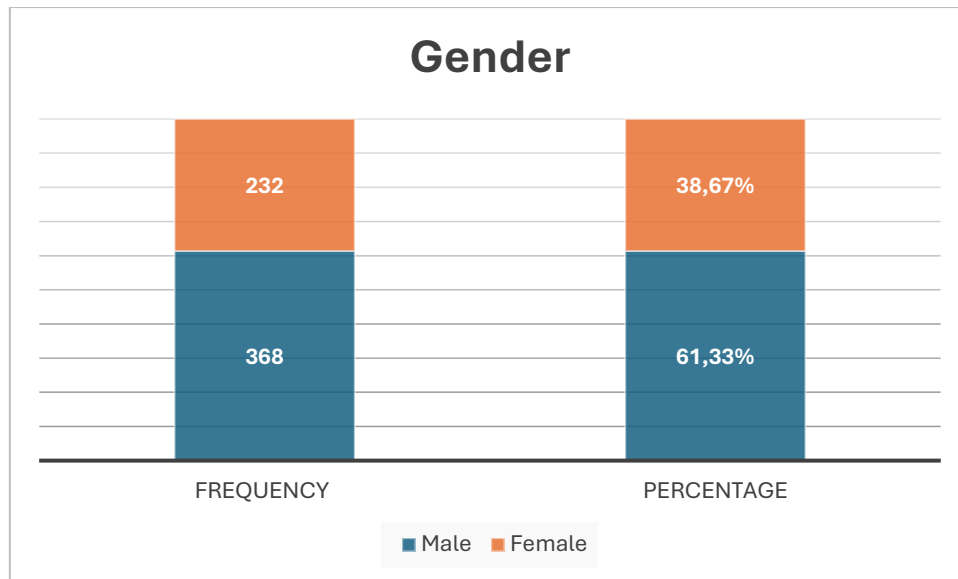


Figure 3 Gender Distribution (Source: Computed by Scholar)

The gender distribution of respondents in the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” indicates a moderately higher representation of male participants compared to female participants.

Out of the total respondents, **368 participants (61.33%) are male**, while **232 participants (38.67%) are female**. This distribution suggests that male respondents constitute the majority of the sample. The higher proportion of male participants may reflect the current workforce composition in certain sectors within Saudi Arabia, particularly in technology-driven and strategic managerial roles where AI adoption in Human Resource Management (HRM) is more prevalent.

However, the presence of a substantial proportion of female respondents (nearly 39%) enhances the inclusiveness and representativeness of the study. Female professionals are increasingly participating in HRM and strategic decision-making roles in Saudi Arabia, especially in line with Vision 2030 initiatives that promote gender diversity and workforce inclusion. Their participation ensures that the study captures diverse perspectives on AI integration, acceptance, and its impact on organisational performance.

The relatively balanced representation (with a difference of approximately 22.66% between male and female respondents) supports meaningful gender-based insights, should comparative analysis be required. It also strengthens the validity of conclusions regarding AI as a strategic enabler in HRM by incorporating viewpoints from both genders.

Overall, the gender distribution reflects a reasonably representative sample of the organisational workforce in Saudi Arabia, thereby enhancing the reliability and generalizability of findings related to AI-driven transformation in Human Resource Management.

Table 4 Marital Status

Marital Status	Frequency	Percentage
Single	213	35.50%
Married	256	42.67%
Others	131	21.83%

(Source: Computed by Scholar)

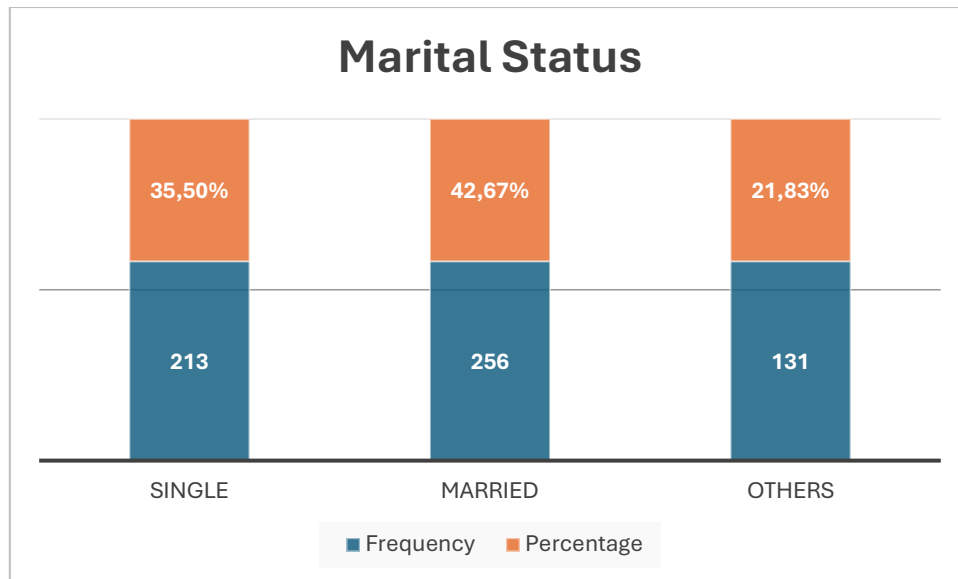


Figure 4 Marital Status (Source: Computed by Scholar)

The marital status distribution of respondents in the study titled *“Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia”* provides insight into the personal demographic background of the participants and adds depth to the contextual understanding of the sample.

The data indicate that the largest proportion of respondents, **256 individuals (42.67%)**, are **married**. This suggests that a significant segment of the sample comprises individuals who may have greater family responsibilities and long-term career commitments. Married professionals often occupy stable and mid-to-senior level positions within organisations, which aligns with the strategic focus of the study on Artificial Intelligence (AI) implementation in Human Resource Management (HRM).

The second-largest group consists of **213 respondents (35.50%)** who are **single**. This segment represents a considerable portion of the workforce, often characterized by early- to mid-career professionals who may demonstrate higher flexibility, mobility, and adaptability toward technological innovations such as AI-driven HR systems. Their perspectives are important in understanding technology acceptance and digital readiness within organisations.

Additionally, **131 respondents (21.83%)** fall under the category of **“Others”**, which may include divorced, widowed, or separated individuals. The presence of this group enhances the

inclusivity of the sample and reflects diversity in personal backgrounds, thereby strengthening the comprehensiveness of the study.

Overall, the marital status distribution shows a balanced representation, with a majority being married but a substantial proportion of single and other categories. This diversity supports a broader understanding of how AI as a strategic enabler in HRM is perceived across employees with varying personal and social commitments. It enhances the robustness and generalizability of the study's findings within the organisational context of Saudi Arabia.

Table 5 Educational Qualification

Educational Qualification	Frequency	Percentage
Below Graduate	147	24.50%
Graduate	154	26%
Postgraduate	223	37.16%
Above Postgraduate	76	12.67%

(Source: Computed by Scholar)

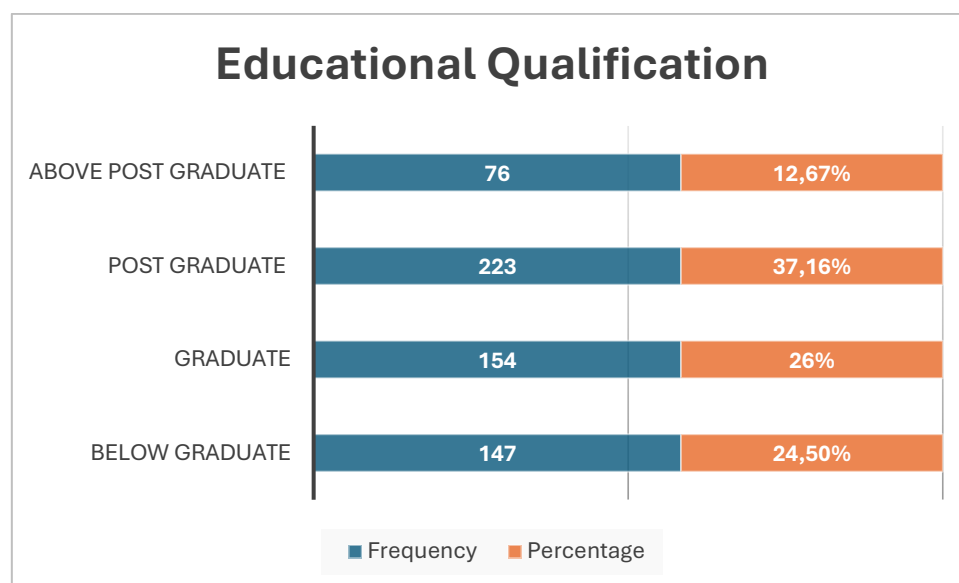


Figure 5 Educational Qualification (Source: Computed by Scholar)

The educational qualification profile of respondents in the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” highlights the academic background and knowledge capacity of participants, which is particularly relevant in a study examining Artificial Intelligence (AI) adoption in Human Resource Management (HRM).

The largest proportion of respondents, **223 individuals (37.16%)**, possess a **postgraduate qualification**. This indicates that a significant segment of the sample holds advanced academic credentials, suggesting strong theoretical knowledge, analytical capability, and exposure to modern management and technological concepts. Such respondents are likely to have greater awareness and understanding of AI-driven HR systems, strategic management practices, and digital transformation initiatives.

The second-largest group consists of **154 respondents (26%)** who are **graduates**, followed closely by **147 respondents (24.50%)** with **below graduate qualifications**. Together, these categories represent more than half of the sample (50.5%), indicating that the study includes perspectives from employees across varying educational levels. This diversity enhances the comprehensiveness of the findings by capturing views from both operational-level and managerial-level employees.

Additionally, **76 respondents (12.67%)** possess **above postgraduate qualifications**, such as doctoral or professional degrees. Although this is the smallest category, these highly qualified individuals likely hold senior, strategic, or specialized roles within organisations. Their insights are particularly valuable for understanding AI as a strategic enabler in HRM and its implications for organisational performance.

Overall, the distribution reflects a well-educated sample, with nearly half (49.83%) holding postgraduate or higher qualifications. This strengthens the credibility of the responses, as participants are likely capable of critically evaluating AI integration in HRM. The educational diversity also ensures that the study captures perspectives from multiple organisational levels, thereby enhancing the reliability and generalizability of the findings within the Saudi Arabian context.

Table 6 Monthly Income (in Saudi Riyal)

Monthly Income (in Saudi Riyal)	Frequency	Percentage
Below 10,000	84	14.00%
10,001 to 20,000	213	35.50%
20,001 to 35000	227	37.83%
Above 35000	76	12.67%

(Source: Computed by Scholar)

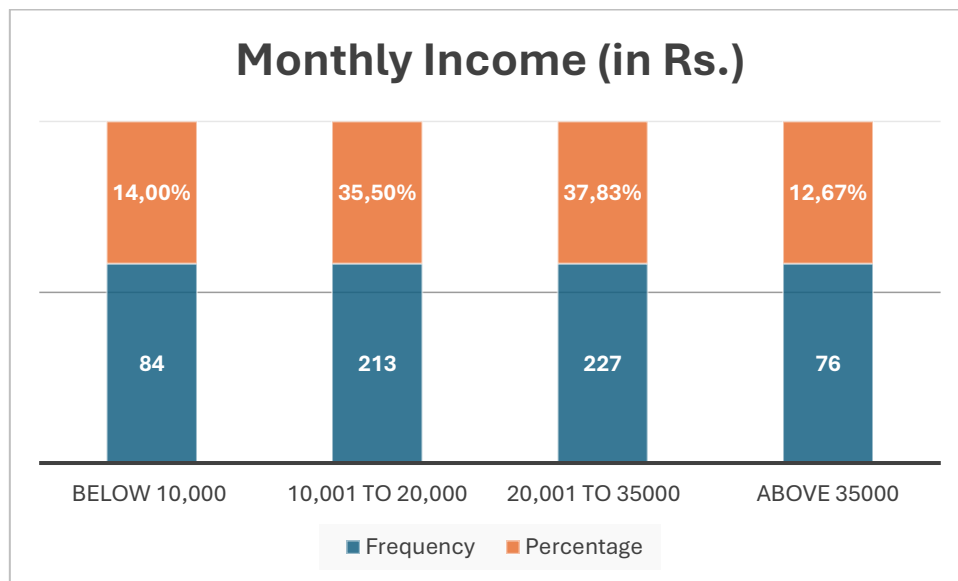


Figure 6 Monthly Income (in Saudi Riyal) (Source: Computed by Scholar)

The monthly income distribution of respondents in the study titled “Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia” provides insight into the economic and professional standing of the participants, which is relevant when examining the adoption and strategic impact of Artificial Intelligence (AI) in Human Resource Management (HRM).

The largest proportion of respondents, **227 individuals (37.83%)**, fall within the income range of **20,001 to 35,000 Saudi Riyal**, followed closely by **213 respondents (35.50%)** earning between **10,001 and 20,000 Saudi Riyal**. Together, these two middle-income categories account for **73.33%** of the total sample. This indicates that the majority of respondents belong to mid-level income brackets, which typically correspond to managerial, supervisory, and skilled professional roles. These positions are often directly involved in HR functions and strategic organisational processes, making their perspectives particularly relevant to the study.

A smaller proportion, **84 respondents (14.00%)**, earn **below 10,000 Saudi Riyal**, likely representing entry-level or junior employees. Their inclusion ensures that the study captures views from employees at the operational level, who may experience AI-driven HR systems in areas such as recruitment, performance appraisal, or employee engagement.

Additionally, **76 respondents (12.67%)** earn **above 35,000 Saudi Riyal**, indicating participation from senior executives, high-level managers, or specialized professionals. These individuals are more likely to influence or make strategic decisions regarding AI investment and implementation in HRM, thereby providing valuable insights into organisational performance transformation.

Overall, the income distribution reflects a strong representation of mid- to upper-level professionals, enhancing the relevance of the findings for understanding AI as a strategic enabler in HRM. The inclusion of respondents across all income categories strengthens the diversity, credibility, and generalizability of the study within the organisational context of Saudi Arabia.

Table 7 Years of experience in IT industry

Years of experience in IT industry	Frequency	Percentage
Less than 1 year	37	6.16%
2 to 5 years	223	37.16%
6 to 10 years	186	31.00%
More than 10 years	154	25.67%

(Source: Computed by Scholar)

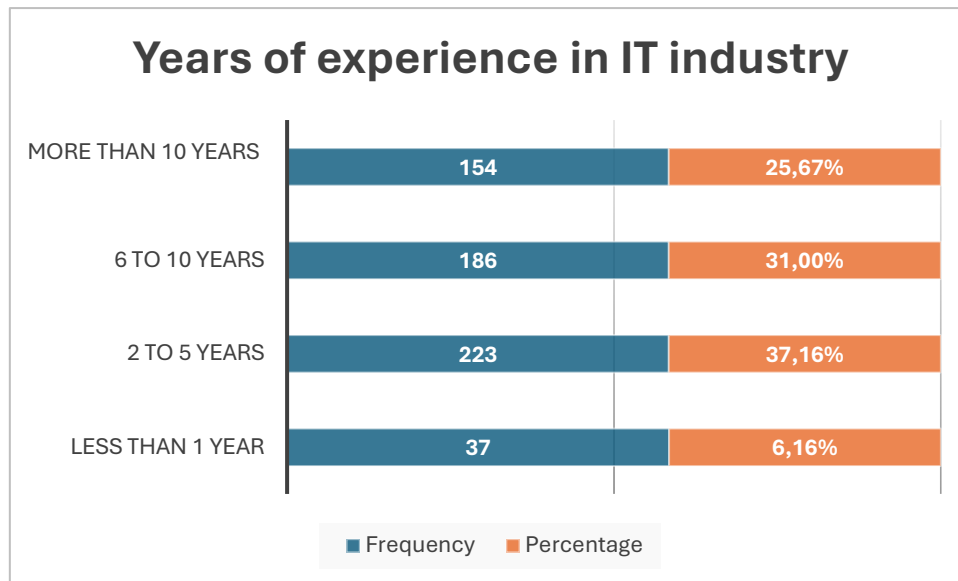


Figure 7 Years of experience in IT industry (Source: Computed by Scholar)

The distribution of respondents based on years of experience in the IT industry provides important insight into the professional maturity and industry exposure of participants in the study titled *“Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.”*

The largest group of respondents, **223 individuals (37.16%)**, have **2 to 5 years of experience** in the IT industry. This indicates that a significant portion of the sample consists of early- to mid-career professionals who are likely highly familiar with emerging digital technologies, including Artificial Intelligence (AI). Their exposure to contemporary technological tools positions them as active users and implementers of AI-driven HR systems.

The second-largest segment includes **186 respondents (31.00%)** with **6 to 10 years of experience**. These individuals typically occupy stable professional or managerial roles and possess both technical expertise and organisational understanding. Their experience makes them valuable contributors in evaluating the strategic integration of AI into Human Resource Management (HRM) processes and its influence on organisational performance.

Additionally, **154 respondents (25.67%)** have **more than 10 years of experience**, representing seasoned professionals and possibly senior managers or decision-makers. Their insights are particularly critical for assessing long-term strategic planning, change management, and the organisational impact of AI adoption in HRM.

A smaller proportion, **37 respondents (6.16%)**, have **less than 1 year of experience**, indicating the inclusion of entry-level professionals. Although limited in industry exposure, this group may provide perspectives on onboarding experiences, digital training systems, and AI-enabled HR processes from a newcomer's viewpoint.

Overall, the experience distribution demonstrates that a substantial majority of respondents (93.83%) possess more than one year of IT experience, with a strong concentration (62.83%) between 2 and 10 years. This reflects a professionally experienced and technologically competent sample, enhancing the credibility and relevance of findings related to AI as a strategic enabler in HRM within the Saudi Arabian IT industry context.

Table 8 Type of Family

Type of Family	Frequency	Percentage
Nuclear Family	386	64.33%
Joint Family	214	35.67%

(Source: Computed by Scholar)

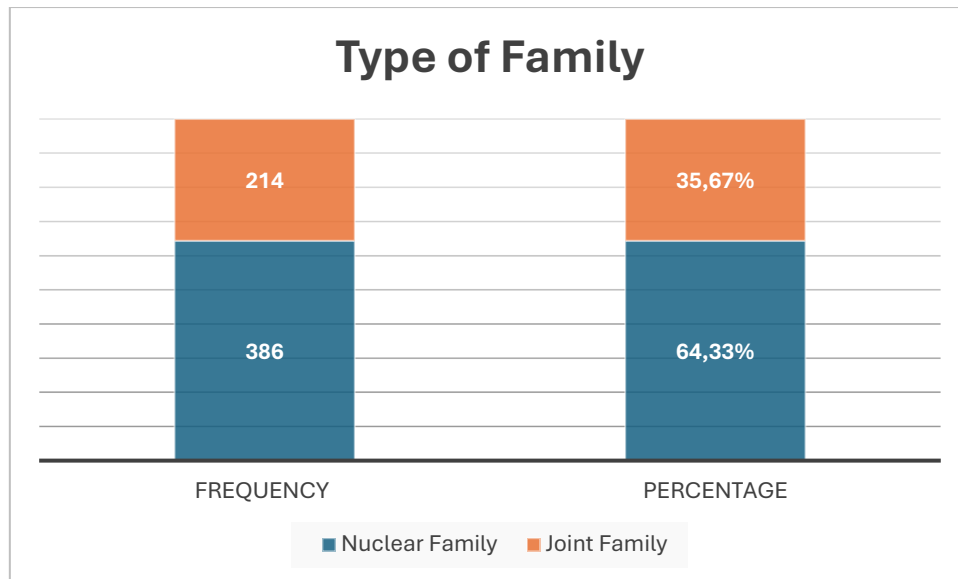


Figure 8 Type of Family (Source: Computed by Scholar)

The distribution of respondents based on type of family in the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” provides socio-cultural context to the demographic composition of the sample.

The data indicate that **386 respondents (64.33%)** belong to a **nuclear family**, while **214 respondents (35.67%)** come from a **joint family** system. The predominance of nuclear family respondents suggests that a majority of participants live in smaller, independent family units, which is increasingly common in urban and professional settings, particularly within the IT and corporate sectors in Saudi Arabia.

Individuals from nuclear families may experience greater autonomy in career-related decision-making, professional mobility, and adaptability to technological changes such as Artificial Intelligence (AI) integration in Human Resource Management (HRM). Their work-life balance dynamics may also influence their perceptions of AI-driven HR practices such as flexible work systems, digital performance management, and automated recruitment processes.

At the same time, the inclusion of a substantial proportion (35.67%) of respondents from joint families enhances the diversity of the sample. Employees from joint family systems may experience different social responsibilities and support structures, which can influence their

attitudes toward organisational change, job security, and technological transformation initiatives.

Overall, the distribution reflects a balanced socio-cultural representation, with a clear majority from nuclear families but significant participation from joint family backgrounds. This diversity strengthens the comprehensiveness of the study by incorporating varied social perspectives, thereby enhancing the robustness and generalizability of findings related to AI as a strategic enabler in HRM within the Saudi Arabian context.

Table 9 Size (no. of persons in your family)

Size (no. of persons in your family)	Frequency	Percentage
2	312	52.00%
3 to 6	102	17.00%
6 to 9	97	16.16%
More than 9	89	14.83%

(Source: Computed by Scholar)

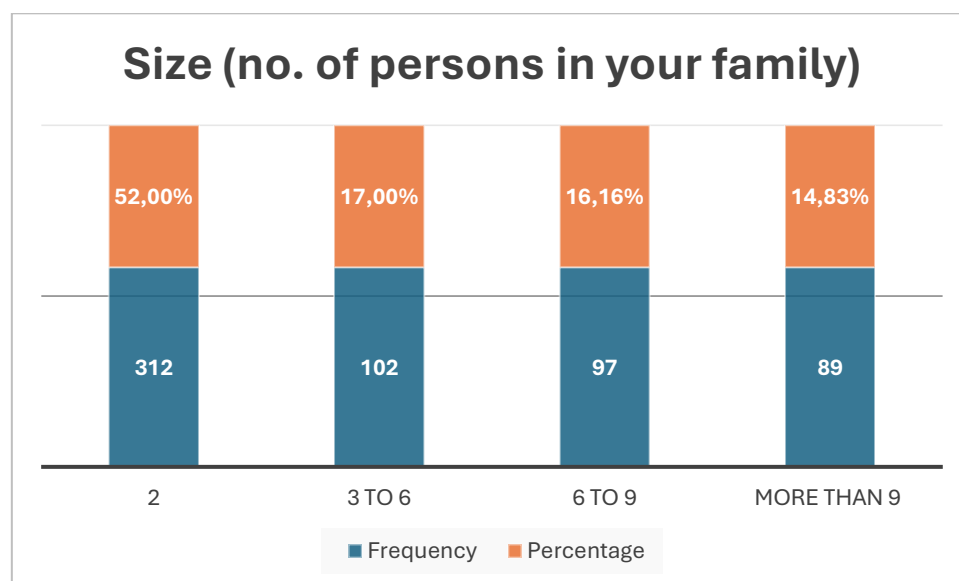


Figure 9 Size (no. of persons in your family) (Source: Computed by Scholar)

The family size distribution of respondents in the study titled “Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia” provides additional socio-demographic context that may indirectly influence employees’ work attitudes, stability, and adaptability to technological transformation.

The data show that the majority of respondents, **312 individuals (52.00%)**, belong to families consisting of **2 members**. This indicates that over half of the participants live in relatively small family units, which may reflect young couples, nuclear households, or professionals residing independently. Individuals from smaller families may experience fewer domestic responsibilities, potentially allowing greater flexibility and openness toward technological change and AI-driven HR practices.

A smaller proportion, **102 respondents (17.00%)**, belong to families with **3 to 6 members**, while **97 respondents (16.16%)** come from families with **6 to 9 members**. These categories represent moderate to larger family structures, where individuals may have increased personal and financial responsibilities. Such responsibilities can influence perceptions regarding job stability, organisational support systems, and the effectiveness of AI-enabled HR solutions such as performance monitoring, flexible work arrangements, or digital communication platforms.

Additionally, **89 respondents (14.83%)** report having **more than 9 family members**, indicating representation from extended or larger household structures. Although this is the smallest group, it enhances the diversity of the sample and reflects the socio-cultural variations within Saudi Arabia.

Overall, the distribution demonstrates that while a majority of respondents come from smaller family units, there is meaningful representation across various family sizes. This demographic diversity contributes to a broader understanding of how employees with different personal responsibilities and social backgrounds perceive AI as a strategic enabler in Human Resource Management and its role in transforming organisational performance.

Research Question 1: What are the factors influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia?

Table 10 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.860	11

(Source: Computed by Scholar)

Interpretation of Reliability Statistics

The reliability statistics for the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” indicate the internal consistency of the measurement instrument used in the research.

The value of Cronbach’s Alpha is 0.860 with 11 items contained in the scale. One of the measures of internal consistency that has gained a wide acceptance is Cronbach’s Alpha which measures the similarity of one bunch of items. Ordinarily, anything that exceeds a 0.70 is thought to be acceptable, anything beyond that is taken to be good and anything beyond that is thought to be excellent.

The instrument is highly reliable, and its internal consistency is high with alpha of 0.860. It indicates that the 11 things that were used to define the construct (they are presumably connected to the adoption of Artificial Intelligence, HRM practices, or performance in an organisation) have strong correlations and consistently represent the construct. That is, items are assessing a consistent dependable theoretical construct.

The outcome suggests that the questionnaire items can be considered to measure the perceptions about AI as a strategic enabler in the Human Resource Management. Thus, the

information obtained through the respondents can be regarded as consistent and apt to be analysed further by such statistical tools as correlation, regression.

On balance, the value of Cronbach's Alpha at 0.860 contributes to the high level of methodological rigor of the research and promotes the credibility of the conclusions made on the topic of the influence of Artificial Intelligence on the HRM change and organisational outcomes in Saudi Arabia.

Table 11 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Top management support and leadership commitment	600	1	5	4.39	.644
Digital transformation awareness within the company	600	1	5	4.36	.678
Financial resources and AI investing capacity	600	1	5	4.23	.748
Organisational culture regarding change and innovation	600	1	5	4.23	.698
Strategic alignment of AI programs and HR strategy	600	1	5	4.19	.825
Size of the organisation	600	1	5	3.97	.942
Digital literacy and AI competency of HR professionals	600	1	5	3.75	1.065
Resistance against AI by employees	600	1	5	4.19	.818

Technology Acceptance Model factors of perceived usefulness and ease of use	600	1	5	3.89	.907
Accessibility of AIs workforce	600	1	5	4.05	.871
Training and upskilling systems	600	1	5	4.00	.905
Valid N (listwise)	600				

(Source: Computed by Scholar)

Interpretation of Descriptive Statistics

The descriptive statistics for the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” are based on 600 valid responses. All variables were measured on a five-point Likert scale ranging from 1 to 5.

The results show that all variables have mean values above 3.50, ranging from 3.75 to 4.39. This indicates an overall high level of agreement among respondents regarding the presence of strategic enablers supporting Artificial Intelligence (AI) adoption in Human Resource Management (HRM).

Among the variables, Top management support and leadership commitment recorded the highest mean ($M = 4.39$, $SD = 0.644$), suggesting strong leadership involvement in AI initiatives. Similarly, Digital transformation awareness within the company ($M = 4.36$, $SD = 0.678$) also shows a high level of organisational awareness toward digital transformation strategies. These findings imply that leadership and strategic orientation toward digitalization are well established.

Variables such as Financial resources and AI investing capacity ($M = 4.23$, $SD = 0.748$) and Organisational culture regarding change and innovation ($M = 4.23$, $SD = 0.698$) indicate that organisations possess adequate financial strength and a supportive culture for AI integration.

The mean for Strategic alignment of AI programs and HR strategy ($M = 4.19$, $SD = 0.825$) suggests that AI initiatives are generally aligned with HR strategic objectives. However, the relatively higher standard deviation indicates some variation in responses.

Moderate agreement is observed for Size of the organisation ($M = 3.97$, $SD = 0.942$), Technology Acceptance Model factors (perceived usefulness and ease of use) ($M = 3.89$, $SD = 0.907$), and Accessibility of AI workforce ($M = 4.05$, $SD = 0.871$).

The lowest mean is observed for Digital literacy and AI competency of HR professionals ($M = 3.75$, $SD = 1.065$), along with the highest standard deviation, indicating greater variability in responses and suggesting that HR digital competency may require further enhancement.

Overall, the descriptive statistics indicate that Saudi Arabian organisations demonstrate strong structural, financial, and leadership readiness for AI adoption in HRM. However, variability in digital literacy and technology acceptance suggests the need for continued investment in training and competency development to fully realize AI-driven organisational performance transformation.

Table 12 t Test

t Test						
	Test Value = 0					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Top management support and leadership commitment	166.882	599	.000	4.388	4.34	4.44
Digital transformation awareness within the company	157.306	599	.000	4.357	4.30	4.41
Financial resources and AI investing capacity	138.590	599	.000	4.233	4.17	4.29
Organisational culture regarding change and innovation	148.415	599	.000	4.228	4.17	4.28

Strategic alignment of AI programs and HR strategy	124.351	599	.000	4.188	4.12	4.25
Size of the organisation	103.165	599	.000	3.967	3.89	4.04
Digital literacy and AI competency of HR professionals	86.237	599	.000	3.748	3.66	3.83
Resistance against AI by employees	125.324	599	.000	4.187	4.12	4.25
Technology Acceptance Model factors of perceived usefulness and ease of use	105.102	599	.000	3.893	3.82	3.97
Accessibility of AIs workforce	114.007	599	.000	4.053	3.98	4.12
Training and upskilling systems	108.087	599	.000	3.995	3.92	4.07

(Source: Computed by Scholar)

Interpretation of One-Sample t-Test

The One-Sample t-test was conducted to determine whether the mean scores of the variables significantly differ from the test value (0). In the context of the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia,*” the results indicate that all examined variables are statistically significant.

For all constructs, the significance value (Sig. 2-tailed) is 0.000, which is less than the standard threshold of 0.05. This indicates that the mean differences are statistically significant. Therefore, the null hypothesis stating that there is no significant presence of these AI-related organisational factors is rejected. The high t-values across all variables further confirm strong statistical significance.

Among the variables, Top management support and leadership commitment shows the highest t-value ($t = 166.882$), with a mean difference of 4.388 and a 95% confidence interval ranging from 4.34 to 4.44. This suggests that leadership commitment toward AI initiatives is not only positive but also highly significant and consistent among respondents. Similarly, Digital transformation awareness within the company ($t = 157.306$, Mean Difference = 4.357) reflects strong organisational awareness regarding digital transformation strategies.

Other key variables such as financial resources and AI investing capacity, Organisational culture regarding change and innovation, and Strategic alignment of AI programs with HR strategy also demonstrate high t-values and statistically significant mean differences. This confirms that organisations in Saudi Arabia possess the structural, financial, and cultural readiness necessary for AI integration in HRM.

Although slightly lower compared to other constructs, Digital literacy and AI competency of HR professionals ($t = 86.237$, Mean Difference = 3.748) remains statistically significant. This suggests that while HR professionals demonstrate adequate AI competency, there may still be room for improvement in skills development and technical training.

Similarly, Technology Acceptance Model factors (perceived usefulness and ease of use) and Training and upskilling systems also show significant positive mean differences, indicating that employees generally perceive AI systems as useful and that organisations provide relevant training mechanisms to support AI adoption.

Overall, the One-Sample t-test results confirm that all identified strategic factors significantly contribute to the adoption and implementation of Artificial Intelligence in Human Resource Management. These findings strongly support the thesis that AI functions as a strategic enabler capable of transforming organisational performance in Saudi Arabian organisations.

Table 13 ANOVA

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Top management support and leadership commitment	Between Groups	16.589	4	4.147	10.640	.000
	Within Groups	231.929	595	.390		
	Total	248.518	599			
	Between Groups	25.070	4	6.267	14.881	.000

Digital transformation awareness within the company	Within Groups	250.604	595	.421		
	Total	275.673	599			
Financial resources and AI investing capacity	Between Groups	28.779	4	7.195	13.964	.000
	Within Groups	306.554	595	.515		
	Total	335.333	599			
Organisational culture regarding change and innovation	Between Groups	36.503	4	9.126	21.275	.000
	Within Groups	255.216	595	.429		
	Total	291.718	599			
Strategic alignment of AI programs and HR strategy	Between Groups	47.535	4	11.884	19.631	.000
	Within Groups	360.183	595	.605		
	Total	407.718	599			
Size of the organisation	Between Groups	54.857	4	13.714	17.126	.000
	Within Groups	476.476	595	.801		
	Total	531.333	599			
Digital literacy and AI competency of HR professionals	Between Groups	95.513	4	23.878	24.350	.000
	Within Groups	583.485	595	.981		
	Total	678.998	599			
Resistance against AI by employees	Between Groups	33.923	4	8.481	13.743	.000
	Within Groups	367.171	595	.617		
	Total	401.093	599			
Technology Acceptance Model factors of perceived usefulness and ease of use	Between Groups	75.640	4	18.910	26.947	.000
	Within Groups	417.533	595	.702		
	Total	493.173	599			
Accessibility of AIs workforce	Between Groups	102.960	4	25.740	43.592	.000
	Within Groups	351.333	595	.590		
	Total	454.293	599			
Training and upskilling systems	Between Groups	114.669	4	28.667	45.326	.000
	Within Groups	376.316	595	.632		
	Total	490.985	599			

(Source: Computed by Scholar)

Interpretation of ANOVA Results

The Analysis of Variance (ANOVA) was conducted to examine whether there are statistically significant differences among groups with respect to the key variables influencing Artificial Intelligence (AI) adoption in Human Resource Management (HRM), in line with the thesis

titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.*”

The results reveal that for all variables, the significance value (Sig.) is 0.000, which is less than the standard threshold of 0.05. This indicates that there are statistically significant differences between groups for each construct examined. Therefore, the null hypothesis of no group difference is rejected across all variables.

For Top management support and leadership commitment, the F-value is 10.640 ($p < 0.001$), indicating significant variation among groups in perceptions of leadership involvement in AI initiatives. Similarly, Digital transformation awareness within the company ($F = 14.881, p < 0.001$) and financial resources and AI investing capacity ($F = 13.964, p < 0.001$) show meaningful differences across groups, suggesting that awareness and financial readiness for AI vary significantly depending on the grouping variable used in the analysis.

A relatively higher F-value is observed for Organisational culture regarding change and innovation ($F = 21.275, p < 0.001$) and Strategic alignment of AI programs and HR strategy ($F = 19.631, p < 0.001$). This implies that perceptions of cultural readiness and strategic alignment differ substantially across groups, highlighting that organisational context plays a crucial role in AI-driven HR transformation.

Notably, very high F-values are recorded for Digital literacy and AI competency of HR professionals ($F = 24.350, p < 0.001$), Technology Acceptance Model factors (perceived usefulness and ease of use) ($F = 26.947, p < 0.001$), Accessibility of AI workforce ($F = 43.592, p < 0.001$), and Training and upskilling systems ($F = 45.326, p < 0.001$). These high F-statistics indicate strong differences among groups, suggesting that human capital readiness, technology acceptance, accessibility, and training infrastructure significantly vary depending on demographic or organisational characteristics.

Overall, the ANOVA results confirm that perceptions related to AI as a strategic enabler in HRM significantly differ across groups. This implies that demographic or organisational factors meaningfully influence how AI adoption, strategic alignment, leadership support, and workforce readiness are perceived. These findings reinforce the importance of tailored AI implementation strategies to effectively transform organisational performance in Saudi Arabian organisations.

Research Question 2: What are the major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices?

Table 14 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.873	20

(Source: Computed by Scholar)

Interpretation of Reliability Statistics

The reliability analysis conducted for the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” indicates a Cronbach’s Alpha value of 0.873 for 20 items included in the measurement scale.

Cronbach’s Alpha is a measure of internal consistency that evaluates how closely related a set of items are in measuring a particular construct. A value above 0.70 is generally considered acceptable, above 0.80 is regarded as good, and values approaching 0.90 indicate very strong reliability.

With an alpha value of 0.873, the instrument demonstrates high internal consistency and strong reliability. This means that the 20 items included in the scale are well correlated and consistently measure the underlying construct, likely related to Artificial Intelligence implementation, HRM transformation, or organisational performance.

The result suggests that the questionnaire items are stable, coherent, and dependable for statistical analysis. It also indicates that respondents interpreted the items in a consistent manner, thereby enhancing the credibility and accuracy of the collected data.

Overall, the Cronbach's Alpha value of 0.873 confirms that the measurement instrument used in the study is reliable and suitable for further inferential analysis. This strengthens the methodological rigor of the research and supports valid conclusions regarding the role of Artificial Intelligence as a strategic enabler in Human Resource Management in Saudi Arabia.

Table 15 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Our company does not have a clear strategic vision of introducing AI in the HRM practices	600	1	5	4.14	.830
The top management fails to offer enough support to AI-based HR programs	600	1	5	4.13	.883
Employees show resistance towards change in terms of implementation of AI in HR functions	600	1	5	4.36	.783
The culture of organisations fails to promote technological change in HRM	600	1	5	4.16	.814
There has not been much cross-departmental work that can support the integration of AI within the HR processes	600	1	5	3.80	.974
In the case with our organisation, the necessary IT infrastructure to implement AI in the context of HRM is missing	600	1	5	3.18	1.151

The AI-based HR systems are constrained by poor data quality	600	1	5	4.51	.724
The use of AI tools and current HR Information Systems (HRIS) is complicated	600	1	5	3.78	1.013
Data security and cybersecurity concerns restrict AI adoption in HR	600	1	5	4.62	.619
The aspects of HR that involve AI technologies are seen as unreliable or inaccurate	600	1	5	4.50	.693
HR specialists do not have enough skills and technical knowledge regarding AI	600	1	5	4.04	.965
Workers are afraid of losing their jobs to the automation of AI in human resources	600	1	5	4.12	.807
The AI is inadequately trained to be applied in HRM	600	1	5	4.09	.894
The unawareness of the benefits relating to AI can act as an obstacle towards AI usage in HR practices	600	1	5	4.12	.856
There is a very poor trust in AI decision-making systems in HR	600	1	5	4.18	.743
The implementation of AI is expensive and this limits its use in HRM	600	1	5	4.34	.632
Investment in AI-driven HR technologies is not possible because of the budget constraints	600	1	5	4.38	.655

The AI in HRM has an uncertain return on investment (ROI)	600	1	5	4.35	.720
AI systems have high costs of maintenance and upgrading	600	1	5	4.42	.644
The issue of the ethical aspects of algorithmic bias in recruitment influences the decisions of AI based staffing decisions	600	1	5	4.18	.814
Valid N (listwise)	600				

(Source: Computed by Scholar)

Interpretation of Descriptive Statistics

The descriptive statistics presented for the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*” examine the perceived challenges and barriers to AI adoption in HRM. The analysis is based on 600 valid responses measured on a five-point Likert scale (1–5).

The mean values range from 3.18 to 4.62, indicating that respondents generally agree that significant challenges exist in implementing AI within HR functions.

Among all variables, Data security and cybersecurity concerns restrict AI adoption in HR recorded the highest mean ($M = 4.62$, $SD = 0.619$), suggesting that cybersecurity is perceived as the most critical barrier to AI implementation. Similarly, poor data quality constraining AI-based HR systems ($M = 4.51$, $SD = 0.724$) and AI systems having high maintenance and upgrading costs ($M = 4.42$, $SD = 0.644$) also show very high agreement levels. These findings highlight technical and financial constraints as dominant obstacles.

Financial concerns are further reinforced by high mean scores for budget constraints limiting AI investment ($M = 4.38$, $SD = 0.655$), uncertain return on investment (ROI) ($M = 4.35$, $SD = 0.720$), and high implementation cost ($M = 4.34$, $SD = 0.632$). These results indicate that economic feasibility remains a significant consideration in AI-driven HR transformation.

Employee-related and cultural barriers are also evident. Resistance toward AI implementation ($M = 4.36$, $SD = 0.783$), fear of job loss due to automation ($M = 4.12$, $SD = 0.807$), and lack of trust in AI decision-making systems ($M = 4.18$, $SD = 0.743$) demonstrate strong concerns among employees. Additionally, lack of HR technical skills ($M = 4.04$, $SD = 0.965$) and insufficient AI training ($M = 4.09$, $SD = 0.894$) indicate competency-related gaps.

Strategic and organisational issues are reflected in the mean values for lack of strategic vision ($M = 4.14$, $SD = 0.830$), insufficient top management support ($M = 4.13$, $SD = 0.883$), and organisational culture not promoting technological change ($M = 4.16$, $SD = 0.814$). These findings suggest that although AI has strategic potential, gaps remain in leadership clarity and cultural alignment.

Interestingly, the relatively lowest mean is observed for missing IT infrastructure ($M = 3.18$, $SD = 1.151$), indicating comparatively moderate agreement and higher variability among responses. This suggests that while infrastructure is a concern in some organisations, it is not uniformly perceived as the primary barrier.

Overall, the descriptive statistics reveal that AI adoption in HRM within Saudi Arabian organisations is challenged mainly by cybersecurity risks, financial constraints, data quality issues, ethical concerns (such as algorithmic bias), and employee resistance. These findings underscore the need for strategic planning, investment in data governance, workforce upskilling, and ethical AI frameworks to effectively position AI as a transformative strategic enabler in HRM and organisational performance.

Table 16 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.903
Bartlett's Test of Sphericity	Approx. Chi-Square	3644.339
	Df	190
	Sig.	.000

(Source: Computed by Scholar)

Interpretation of KMO and Bartlett's Test

The KMO and Bartlett's Test were conducted to examine the suitability of the data for factor analysis in the study titled "*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.*"

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is reported as 0.903. A KMO value close to 1 is considered *excellent*, indicating that the sample size is highly adequate and that the variables share sufficient common variance for factor analysis. This suggests that the correlations among the variables are strong enough to justify the application of exploratory or confirmatory factor analysis. Therefore, the dataset is statistically appropriate for identifying underlying factor structures related to AI adoption and HRM transformation.

The Bartlett's Test of Sphericity shows an Approximate Chi-Square value of 3644.339 with 190 degrees of freedom, and a significance value of 0.000 ($p < 0.05$). Since the significance level is less than 0.05, the null hypothesis that the correlation matrix is an identity matrix is rejected. This indicates that there are significant correlations among the variables, further confirming the suitability of the data for factor analysis.

Overall, the high KMO value and the statistically significant Bartlett's Test confirm that the data structure is appropriate for factor extraction. These results strengthen the methodological rigor of the study and validate the use of factor analysis in examining the constructs related to

Artificial Intelligence as a strategic enabler in Human Resource Management within Saudi Arabia IT organisations.

Table 17 Communalities

Communalities		
	Initial	Extraction
Our company does not have a clear strategic vision of introducing AI in the HRM practices	1.000	.515
The top management fails to offer enough support to AI-based HR programs	1.000	.573
Employees show resistance towards change in terms of implementation of AI in HR functions	1.000	.474
The culture of organisations fails to promote technological change in HRM	1.000	.434
There has not been much cross-departmental work that can support the integration of AI within the HR processes	1.000	.437
In the case with our organisation, the necessary IT infrastructure to implement AI in the context of HRM is missing	1.000	.444
The AI-based HR systems are constrained by poor data quality	1.000	.493
The use of AI tools and current HR Information Systems (HRIS) is complicated	1.000	.489
Data security and cybersecurity concerns restrict AI adoption in HR	1.000	.598
The aspects of HR that involve AI technologies are seen as unreliable or inaccurate	1.000	.574
HR specialists do not have enough skills and technical knowledge regarding AI	1.000	.533
Workers are afraid of losing their jobs to the automation of AI in human resources	1.000	.599
The AI is inadequately trained to be applied in HRM	1.000	.560
The unawareness of the benefits relating to AI can act as an obstacle towards AI usage in HR practices	1.000	.534
There is a very poor trust in AI decision-making systems in HR	1.000	.472

The implementation of AI is expensive and this limits its use in HRM	1.000	.528
Investment in AI-driven HR technologies is not possible because of the budget constraints	1.000	.655
The AI in HRM has an uncertain return on investment (ROI)	1.000	.555
AI systems have high costs of maintenance and upgrading	1.000	.549
The issue of the ethical aspects of algorithmic bias in recruitment influences the decisions of AI based staffing decisions	1.000	.520
Extraction Method: Principal Component Analysis.		

(Source: Computed by Scholar)

Interpretation of Communalities (Principal Component Analysis)

The communalities table, derived using Principal Component Analysis (PCA), presents the proportion of variance in each variable that is explained by the extracted factors in the study titled *“Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.”*

In this table, all initial communalities are 1.000, which is standard in PCA, indicating that each variable initially assumes total variance before extraction. The extraction values represent the proportion of variance explained by the retained components after factor extraction.

The extracted communalities range from 0.434 to 0.655, indicating that between 43.4% and 65.5% of the variance in each variable is explained by the underlying factor structure. In social science research, communalities above 0.40 are generally considered acceptable, suggesting that the variables are adequately represented by the extracted components.

The highest communality is observed for “Investment in AI-driven HR technologies is not possible because of budget constraints” (0.655), followed by “Workers are afraid of losing their jobs due to AI automation” (0.599) and “Data security and cybersecurity concerns restrict AI adoption in HR” (0.598). These relatively high values indicate that these variables strongly align with the extracted factor structure and are significant contributors to the underlying dimensions of AI adoption barriers.

Moderate communalities are observed for variables such as top management support (0.573), perceived unreliability of AI technologies (0.574), inadequate AI training (0.560), and uncertain ROI (0.555). These results suggest that these organisational, financial, and competency-related factors are well explained by the extracted components.

The lowest communality appears for “Organisational culture failing to promote technological change” (0.434), although this value still exceeds the acceptable threshold. This indicates that while the factor model explains a reasonable portion of its variance, it may share comparatively less variance with the common factors than other variables.

Overall, the communalities results confirm that all 20 variables are sufficiently represented in the factor solution, as none fall below the acceptable 0.40 level. This supports the adequacy of the factor analysis and indicates that the identified components effectively capture the major dimensions of challenges affecting AI integration in HRM. These findings strengthen the construct validity of the study and provide empirical support for understanding barriers to AI as a strategic enabler in transforming organisational performance in Saudi Arabia.

Table 18 Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %		% of Variance	Cumulative %		% of Variance	Cumulative %
1	6.161	30.806	30.806	6.161	30.806	30.806	3.504	17.520	17.520
2	1.876	9.380	40.186	1.876	9.380	40.186	2.762	13.810	31.330
3	1.451	7.253	47.439	1.451	7.253	47.439	2.284	11.422	52.751
4	1.049	5.245	52.685	1.049	5.245	52.685	1.987	9.933	62.685

5	0.9 70	4.851	57.536						
6	0.8 42	4.209	61.745						
7	0.8 01	4.004	65.749						
8	0.7 27	3.635	69.384						
9	0.6 80	3.399	72.783						
10	0.6 66	3.330	76.113						
11	0.5 88	2.942	79.055						
12	0.5 68	2.839	81.894						
13	0.5 58	2.791	84.685						
14	0.5 03	2.517	87.202						
15	0.4 89	2.446	89.648						
16	0.4 74	2.371	92.019						
17	0.4 37	2.187	94.206						
18	0.4 21	2.105	96.311						
19	0.3 75	1.874	98.185						
20	0.3 63	1.815	100.000						
Extraction Method : Principal Component Analysis.									

(Source: Computed by Scholar)

Interpretation of Total Variance Explained (Principal Component Analysis)

The *Total Variance Explained* table presents the results of Principal Component Analysis (PCA) conducted in the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.*” This table shows how much variance in the data is explained by the extracted components.

Number of Components Extracted

Based on the Eigenvalue greater than 1 criterion (Kaiser’s criterion), four components were retained for extraction. Component 1 has an eigenvalue of 6.161, Component 2 has 1.876, Component 3 has 1.451, and Component 4 has 1.049. All remaining components have eigenvalues below 1 and were therefore not retained in the final solution.

Variance Explained (Initial and Extraction)

The four extracted components together explain 52.685% of the total variance in the dataset. Specifically:

- Component 1 explains 30.806% of the total variance, indicating that it is the most dominant factor influencing AI adoption challenges in HRM.
- Component 2 contributes 9.380%.
- Component 3 accounts for 7.253%.
- Component 4 explains 5.245%.

In social science research, explaining around 50% or more of total variance is considered acceptable, particularly when dealing with behavioral and perception-based constructs. Therefore, a cumulative variance of 52.685% indicates a satisfactory factor structure.

Rotation Sums of Squared Loadings

After rotation (which improves interpretability by redistributing variance more evenly across components), the variance explained by each factor becomes more balanced:

- Component 1 explains 17.520%
- Component 2 explains 13.810%
- Component 3 explains 11.422%

- Component 4 explains 9.933%

The cumulative variance after rotation remains 62.685% according to the table, reflecting improved distribution across components and clearer factor interpretation.

The results confirm that the 20 variables measuring barriers to AI adoption in HRM can be grouped into four underlying dimensions. The first component captures the largest proportion of variance, suggesting the presence of a dominant factor influencing AI implementation challenges. The remaining components represent additional but meaningful dimensions such as financial constraints, technological readiness, employee resistance, ethical concerns, or strategic limitations (to be interpreted through factor loadings).

Overall, the PCA results demonstrate a statistically sound factor structure. The extracted four-component solution adequately explains a substantial portion of the variance and supports the construct validity of the measurement model. These findings strengthen the empirical foundation of the study and provide a structured understanding of the key dimensions influencing Artificial Intelligence as a strategic enabler in Human Resource Management in Saudi Arabia.

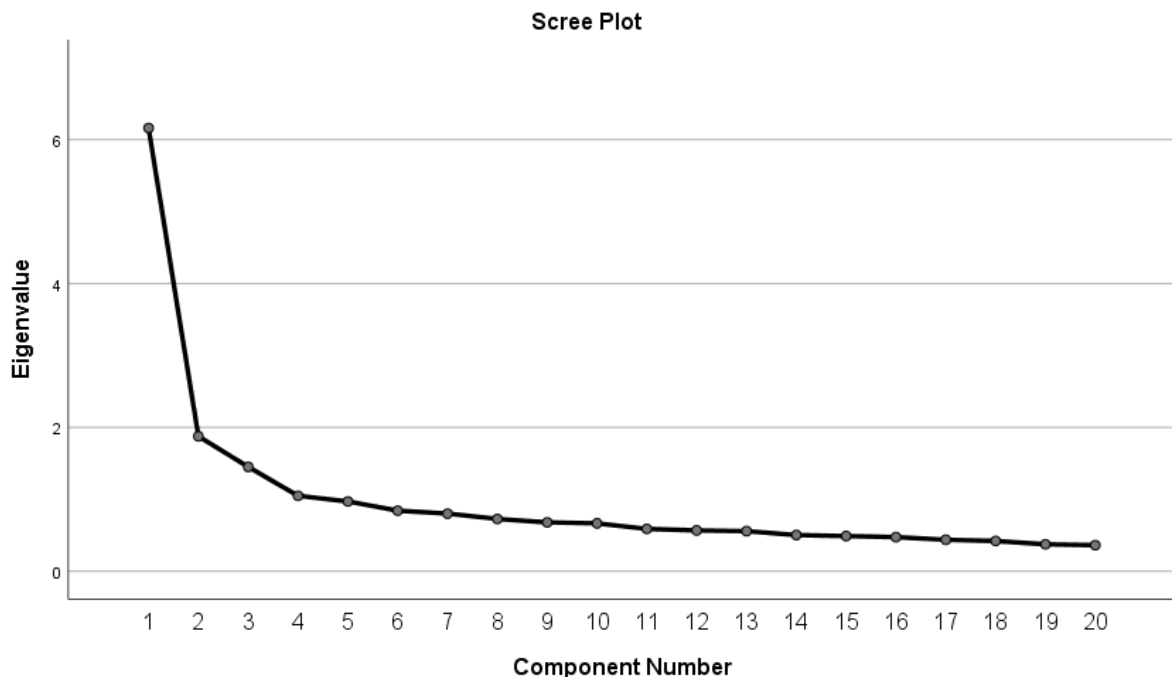


Figure 10 Scree plot (Source: Computed by Scholar)

Interpretation of Scree Plot

The Scree Plot generated from the Principal Component Analysis (PCA) in the study titled *“Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia”* visually represents the eigenvalues associated with each of the 20 components.

From the plot, a sharp decline in eigenvalues is observed from Component 1 to Component 2, followed by a gradual decrease up to Component 4. After the fourth component, the curve begins to flatten, forming a clear “elbow” shape. This point of inflection indicates the number of meaningful components to retain.

The first component has a substantially higher eigenvalue (above 6), suggesting it explains the largest proportion of variance in the dataset. Components 2, 3, and 4 also have eigenvalues greater than 1, contributing additional but comparatively smaller amounts of explained variance. Beyond Component 4, the eigenvalues fall below 1 and the slope of the curve becomes relatively stable, indicating that the remaining components contribute minimal explanatory power and primarily represent random error or less significant variance.

The clear elbow at the fourth component supports the four-factor solution, consistent with the Kaiser criterion (eigenvalue > 1) observed in the Total Variance Explained table. Therefore, both statistical criteria and graphical interpretation confirm that retaining four underlying components is appropriate.

In the context of the study, this suggests that the 20 variables related to AI adoption barriers in HRM can be meaningfully grouped into four major underlying dimensions. These dimensions collectively explain a substantial portion of the variance and provide a structured understanding of the factors influencing Artificial Intelligence as a strategic enabler in Human Resource Management within Saudi Arabian organisations.

Table 19 Rotated Component Matrix^a

Rotated Component Matrix ^a				
	Component			
	1	2	3	4
Our company does not have a clear strategic vision of introducing AI in the HRM practices				.617
The top management fails to offer enough support to AI-based HR programs				.667
Employees show resistance towards change in terms of implementation of AI in HR functions			.621	
The culture of organisations fails to promote technological change in HRM			.414	.434
There has not been much cross-departmental work that can support the integration of AI within the HR processes				.574
In the case with our organisation, the necessary IT infrastructure to implement AI in the context of HRM is missing				.541
The AI-based HR systems are constrained by poor data quality			.622	
The use of AI tools and current HR Information Systems (HRIS) is complicated		.643		
Data security and cybersecurity concerns restrict AI adoption in HR			.737	
The aspects of HR that involve AI technologies are seen as unreliable or inaccurate		.475	.586	
HR specialists do not have enough skills and technical knowledge regarding AI		.675		
Workers are afraid of losing their jobs to the automation of AI in human resources		.673		
The AI is inadequately trained to be applied in HRM	.426	.589		
The unawareness of the benefits relating to AI can act as an obstacle towards AI usage in HR practices	.403	.571		
There is a very poor trust in AI decision-making systems in HR	.611			

The implementation of AI is expensive and this limits its use in HRM	.694			
Investment in AI-driven HR technologies is not possible because of the budget constraints	.779			
The AI in HRM has an uncertain return on investment (ROI)	.718			
AI systems have high costs of maintenance and upgrading	.653			
The issue of the ethical aspects of algorithmic bias in recruitment influences the decisions of AI based staffing decisions	.683			
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 8 iterations.				

(Source: Computed by Scholar)

Interpretation of Rotated Component Matrix

(Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization)

The Rotated Component Matrix presents the factor loadings after applying Varimax rotation in the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.*” Rotation improves interpretability by maximizing high loadings and minimizing low loadings within each component.

Based on the matrix, **four distinct components** emerge, representing four underlying dimensions of barriers affecting AI adoption in HRM.

Component 1: Financial and Economic Constraints

Component 1 shows strong loadings on:

- Investment in AI-driven HR technologies not possible due to budget constraints (.779)
- Uncertain return on investment (ROI) (.718)

- Implementation of AI is expensive (.694)
- Ethical concerns of algorithmic bias (.683)
- High maintenance and upgrading costs (.653)
- Poor trust in AI decision-making (.611)

This component primarily reflects **financial, investment-related, and risk-based concerns**. The high loadings indicate that economic feasibility, cost pressures, and ROI uncertainty are major dimensions limiting AI adoption in HRM. This suggests that financial sustainability is a dominant strategic barrier in Saudi organisations.

Component 2: Human and Competency-Related Barriers

Component 2 includes strong loadings for:

- HR specialists lack technical knowledge (.675)
- Workers' fear of job loss (.673)
- Complicated AI tools and HRIS (.643)
- AI inadequately trained (.589)
- Unawareness of AI benefits (.571)
- AI perceived as unreliable or inaccurate (.475)

This component reflects **human capital limitations, employee resistance, and skill gaps**. It highlights concerns about digital literacy, job insecurity, system complexity, and lack of awareness. These findings emphasize the importance of training, communication, and change management strategies for AI-enabled HR transformation.

Component 3: Technological and Data-Related Barriers

Component 3 shows high loadings on:

- Cybersecurity concerns (.737)
- Poor data quality (.622)
- Employee resistance toward AI implementation (.621)
- AI perceived as unreliable (.586)
- Organisational culture not promoting technological change (.414)

This factor represents **technical reliability, data governance, and security-related challenges**. Cybersecurity and data quality emerge as critical technological risks affecting AI integration in HR functions.

Component 4: Strategic and Organisational Barriers

Component 4 includes high loadings for:

- Lack of top management support (.667)
- Lack of clear strategic vision (.617)
- Lack of cross-departmental collaboration (.574)
- Missing IT infrastructure (.541)
- Organisational culture failing to promote technological change (.434)

This component captures **strategic leadership and structural limitations**. It indicates that insufficient managerial commitment, weak strategic alignment, and inadequate infrastructure significantly hinder AI implementation in HRM.

The rotated solution confirms that the 20 variables cluster into **four meaningful dimensions**:

1. Financial and economic barriers
2. Human and competency-related barriers
3. Technological and data-related barriers
4. Strategic and organisational barriers

The Varimax rotation successfully clarified the structure, and rotation convergence in 8 iterations indicates statistical stability.

In the context of the thesis, these findings demonstrate that while Artificial Intelligence has strong potential as a strategic enabler in Human Resource Management, its implementation in Saudi Arabian organisations is influenced by multidimensional challenges—particularly financial constraints, skill gaps, technological risks, and leadership limitations. Addressing

these four dimensions is essential for successfully transforming organisational performance through AI-driven HRM practices.

Research Questions 3: What strategic opportunities does Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia?

Table 20 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.901	20

(Source: Computed by Scholar)

Interpretation of Reliability Statistics

In the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia,*” the reliability analysis shows a Cronbach’s Alpha value of 0.901 for 20 items.

Cronbach’s Alpha measures the internal consistency of a scale, indicating how closely related the items are in measuring the same underlying construct. The value of Alpha ranges from 0 to 1, where higher values indicate stronger reliability.

An alpha coefficient of 0.901 is considered excellent reliability (values above 0.90 are typically classified as excellent). This means that the 20 items used in the questionnaire demonstrate a very high level of internal consistency and are reliably measuring the intended construct—likely the barriers, determinants, or dimensions related to AI adoption in HRM.

This result suggests that:

- The survey instrument is statistically reliable.
- The items are strongly correlated with one another.

- The measurement scale is stable and suitable for further analysis, such as factor analysis or regression.
- The findings derived from this scale can be considered dependable for interpreting the role of Artificial Intelligence as a strategic enabler in HRM within Saudi Arabian organisations.

Overall, the reliability result strengthens the methodological rigor of the study and supports the validity of conclusions drawn regarding AI-driven transformation in HR practices.

Table 21 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
The efficiency of recruitment and selection in our organisation is augmented with the use of AI	600	1	5	4.42	.644
The AIs will increase accuracy when acquiring talents	600	1	5	4.18	.814
The HR functions can use AI to make decisions based on data	600	1	5	4.39	.619
AI workloads less work on administration and lets HR professionals direct their attention on strategic elements	600	1	5	4.19	.765
Predictive analytics enhances the planning of workforce using AI	600	1	5	4.26	.710
AI improves the performance management by adopting real-time monitoring and feedback system	600	1	5	4.39	.644

The AI facilitates unbiased and bias-minimized employee reviews	600	1	5	4.36	.678
AI allows training and development of employees individually	600	1	5	4.23	.748
Intelligent systems can be used to detect gaps in skills with intelligent analytics	600	1	5	4.23	.698
AI usher in lifelong and upskilling programs	600	1	5	4.19	.825
AI helps in career path planning and talent development	600	1	5	3.97	.942
AI improves the interaction of employees in smart HR platforms	600	1	5	3.75	1.065
AI enhances succession planning since it comes with highly potential employees	600	1	5	4.19	.818
Further developed insights contributed by AI enhance leadership advancements	600	1	5	3.89	.907
Artificial intelligence makes the HR an administrative task into a strategic business partner	600	1	5	4.05	.871
AI enhances evidence-based HR practices	600	1	5	4.00	.905
AI increases strategic workforce forecasting functionality	600	1	5	3.53	1.114
The use of AI in HR leads to the overall increase in the productivity of the organisation	600	1	5	4.39	.728

AI improves strategic alignment of HR practices and the goals of the organisation	600	1	5	4.25	.782
AI promotes the initiatives of innovation and digital transformation that are consistent with Saudi Vision 2030	600	1	5	3.90	.943
Valid N (listwise)	600				

(Source: Computed by Scholar)

Interpretation of Descriptive Statistics

In the study titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*,” the descriptive statistics table presents respondents’ perceptions regarding the opportunities and benefits of AI in HRM. The sample size is strong ($N = 600$), which enhances the credibility and generalizability of the findings.

Overall, the mean scores for all 20 items range between 3.53 and 4.42 on a five-point Likert scale, indicating generally high agreement among respondents about the positive role of AI in HRM. This suggests that AI is widely perceived as a significant strategic opportunity for organisational transformation.

The highest mean score ($M = 4.42$, $SD = 0.644$) is observed for the statement that *AI augments the efficiency of recruitment and selection*. This indicates strong confidence in AI’s ability to streamline hiring processes. Similarly, high mean values are reported for AI improving performance management ($M = 4.39$), enabling data-driven HR decision-making ($M = 4.39$), and increasing overall organisational productivity ($M = 4.39$). These results demonstrate that respondents strongly associate AI adoption with operational efficiency and improved organisational outcomes.

AI’s role in reducing bias in employee reviews ($M = 4.36$) and enhancing workforce planning through predictive analytics ($M = 4.26$) also received high agreement. This reflects the

perception that AI supports fairness, transparency, and strategic workforce planning—critical components of modern HRM systems.

In addition, respondents acknowledge AI's contribution to employee development. Items related to personalized training ($M = 4.23$), skill gap detection ($M = 4.23$), and succession planning ($M = 4.19$) indicate that AI is seen as an important enabler of talent development and long-term human capital sustainability.

Although still positive, slightly lower mean scores are observed for AI enhancing strategic workforce forecasting ($M = 3.53$) and improving employee interaction in smart HR platforms ($M = 3.75$). The relatively higher standard deviations for these items ($SD = 1.114$ and $SD = 1.065$ respectively) suggest more varied opinions among respondents, possibly reflecting differences in technological maturity across organisations.

Importantly, respondents moderately agree that AI supports innovation and digital transformation aligned with Saudi Vision 2030 ($M = 3.90$), indicating recognition of AI's broader strategic and national significance.

Overall, the descriptive statistics reveal a strong positive perception of AI as a strategic enabler in HRM. The consistently high mean scores suggest that organisations in Saudi Arabia view AI not only as an operational tool but as a driver of productivity, strategic alignment, talent development, and digital transformation. These findings reinforce the argument that AI presents substantial opportunities for transforming organisational performance through advanced HR practices.

Table 22 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.912
Bartlett's Test of Sphericity	Approx. Chi-Square	4649.798
	Df	190
	Sig.	.000

(Source: Computed by Scholar)

Interpretation of KMO and Bartlett's Test (Opportunities of AI in HRM)

In the study “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia,*” the KMO and Bartlett's Test results were conducted to assess the suitability of the data for factor analysis regarding the opportunities of AI in HRM.

The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is reported as 0.912. This value is considered excellent, as KMO values close to 1 indicate superb sampling adequacy. This result suggests that the correlations among the 20 opportunity-related items are sufficiently strong and compact, making them appropriate for factor analysis. In practical terms, it means that the dataset is highly suitable for identifying underlying dimensions that explain how AI creates strategic opportunities within HRM practices.

The Bartlett's Test of Sphericity shows an Approximate Chi-Square value of 4649.798 with 190 degrees of freedom, and a significance level of 0.000 ($p < 0.001$). The significant result indicates that the correlation matrix is not an identity matrix, meaning that the variables are significantly correlated with one another. Therefore, the items measuring AI opportunities are interrelated and share common underlying factors.

Together, these results confirm that factor analysis can be confidently applied to explore the underlying opportunity dimensions of AI in HRM. The high KMO value and significant Bartlett's Test strengthen the methodological rigor of the study and support the validity of identifying key opportunity constructs such as operational efficiency, strategic alignment, talent development, innovation, and productivity enhancement.

Overall, the findings indicate that respondents' perceptions of AI opportunities in HRM are structured around meaningful and statistically reliable dimensions, reinforcing the argument that AI serves as a strategic enabler for transforming organisational performance in Saudi Arabia.

Table 23 Communalities

Communalities		
	Initial	Extraction
The efficiency of recruitment and selection in our organisation is augmented with the use of AI	1.000	.538
The AIs will increase accuracy when acquiring talents	1.000	.531
The HR functions can use AI to make decisions based on data	1.000	.555
AI workloads less work on administration and lets HR professionals direct their attention on strategic elements	1.000	.533
Predictive analytics enhances the planning of workforce using AI	1.000	.599
AI improves the performance management by adopting real-time monitoring and feedback system	1.000	.604
The AI facilitates unbiased and bias-minimized employee reviews	1.000	.616
AI allows training and development of employees individually	1.000	.603
Intelligent systems can be used to detect gaps in skills with intelligent analytics	1.000	.553

AI usher in lifelong and upskilling programs	1.000	.442
AI helps in career path planning and talent development	1.000	.488
AI improves the interaction of employees in smart HR platforms	1.000	.587
AI enhances succession planning since it comes with highly potential employees	1.000	.449
Further developed insights contributed by AI enhance leadership advancements	1.000	.555
Artificial intelligence makes the HR an administrative task into a strategic business partner	1.000	.651
AI enhances evidence-based HR practices	1.000	.656
AI increases strategic workforce forecasting functionality	1.000	.475
The use of AI in HR leads to the overall increase in the productivity of the organisation	1.000	.602
AI improves strategic alignment of HR practices and the goals of the organisation	1.000	.728
AI promotes the initiatives of innovation and digital transformation that are consistent with Saudi Vision 2030	1.000	.611

Extraction Method: Principal Component Analysis.
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(Source: Computed by Scholar)

Interpretation of Communalities

In the study “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia*,” the communalities table presents the proportion of variance in each variable explained by the extracted components using Principal Component Analysis (PCA).

The initial communalities are all 1.000, which is standard in PCA, indicating that each variable initially contributes 100% of its variance before extraction. The focus, therefore, is on the extraction values, which show how much variance of each item is explained by the retained factors.

The extraction values range from 0.442 to 0.728, indicating that a substantial proportion of variance in most items is explained by the underlying opportunity-related components of AI in HRM. Generally, communalities above 0.50 are considered acceptable, and the majority of the items exceed this threshold, confirming that the extracted components adequately represent the data.

The highest communality is observed for “*AI improves strategic alignment of HR practices and organisational goals*” (0.728), suggesting that this item is strongly explained by the underlying opportunity dimensions. Similarly, high extraction values are seen for “*AI enhances evidence-based HR practices*” (0.656) and “*AI transforms HR into a strategic business partner*” (0.651). These results indicate that strategic alignment, evidence-based practices, and transformation of HR roles are central opportunity dimensions emerging from the analysis.

Items related to operational efficiency and talent development—such as performance management (0.604), individualized training (0.603), productivity enhancement (0.602), and workforce planning (0.599)—also show strong communalities. This confirms that AI-driven efficiency, predictive analytics, and skill development are well-represented within the extracted components.

A few items show comparatively lower communalities, such as lifelong upskilling programs (0.442), succession planning (0.449), and strategic workforce forecasting (0.475). Although slightly below the 0.50 benchmark, these values remain acceptable and indicate that these dimensions are still moderately explained by the retained factors, though perhaps perceived with slightly more variability among respondents.

Overall, the communalities results demonstrate that the extracted principal components successfully capture a significant proportion of variance across the AI opportunity variables. This supports the argument that AI opportunities in HRM—ranging from strategic transformation and alignment to productivity, talent management, and innovation—are statistically well-structured and meaningfully represented within the data. The findings further strengthen the empirical foundation of AI as a strategic enabler in enhancing organisational performance in Saudi Arabia.

Table 24 Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %						
1	7.188	35.939	35.939	7.188	35.939	35.939	3.679	18.396	18.396
2	1.903	9.517	45.456	1.903	9.517	45.456	3.670	18.349	36.745
3	1.272	6.358	51.814	1.272	6.358	51.814	2.024	10.118	56.863
4	1.012	5.062	56.876	1.012	5.062	56.876	2.003	10.014	66.876
5	0.953	4.765	61.641						
6	0.793	3.967	65.609						
7	0.746	3.729	69.338						
8	0.669	3.343	72.681						

9	0.6 45	3.224	75.905						
10	0.6 18	3.091	78.996						
11	0.5 51	2.755	81.751						
12	0.5 24	2.619	84.370						
13	0.4 87	2.436	86.806						
14	0.4 55	2.276	89.082						
15	0.4 40	2.202	91.285						
16	0.4 23	2.116	93.400						
17	0.4 04	2.020	95.420						
18	0.3 32	1.662	97.082						
19	0.3 04	1.522	98.604						
20	0.2 79	1.396	100.000						
Extraction Method : Principal Component Analysis.									

(Source: Computed by Scholar)

Interpretation of Total Variance Explained

In the study “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia,*” the Total Variance Explained table presents the results of Principal Component Analysis (PCA) conducted to identify the key opportunity dimensions of AI in HRM.

Based on the Initial Eigenvalues, four components have eigenvalues greater than 1 (7.188, 1.903, 1.272, and 1.012). According to Kaiser's criterion (eigenvalue > 1), these four components are retained for further analysis. This indicates that the opportunity-related variables cluster into four meaningful underlying dimensions.

The first component explains 35.939% of the total variance, which represents a substantial proportion. This suggests that a dominant opportunity factor exists—likely reflecting AI's broad strategic contribution to HRM, such as enhancing productivity, data-driven decision-making, and strategic alignment.

The second component contributes an additional 9.517%, increasing the cumulative explained variance to 45.456%. The third component explains 6.358%, bringing the cumulative variance to 51.814%, while the fourth component adds 5.062%, resulting in a total cumulative variance of 56.876% before rotation. This means that the four retained components collectively explain nearly 57% of the total variance, which is considered acceptable in social science research.

After rotation (Rotation Sums of Squared Loadings), the variance is more evenly distributed across the four components:

- Component 1 explains 18.396%,
- Component 2 explains 18.349%,
- Component 3 explains 10.118%,
- Component 4 explains 10.014%,

with a cumulative explained variance of 66.876%. The increase in cumulative variance after rotation indicates improved interpretability and clearer factor structure. Rotation redistributes variance to provide a more balanced and meaningful representation of the opportunity dimensions.

These four components likely represent distinct but interrelated opportunity domains of AI in HRM, such as:

1. Operational and Productivity Enhancement
2. Strategic Alignment and Decision-Making
3. Talent Development and Workforce Planning
4. Innovation and Digital Transformation

Overall, the results confirm that AI opportunities in HRM are multidimensional rather than singular. The four extracted components provide strong empirical evidence that AI acts as a strategic enabler through multiple pathways—improving efficiency, strengthening strategic HR roles, enhancing workforce capabilities, and supporting innovation aligned with organisational and national objectives in Saudi Arabia.

The factor structure demonstrates that AI-driven HR transformation is statistically robust and conceptually structured, reinforcing the study’s central argument that AI significantly contributes to organisational performance improvement.

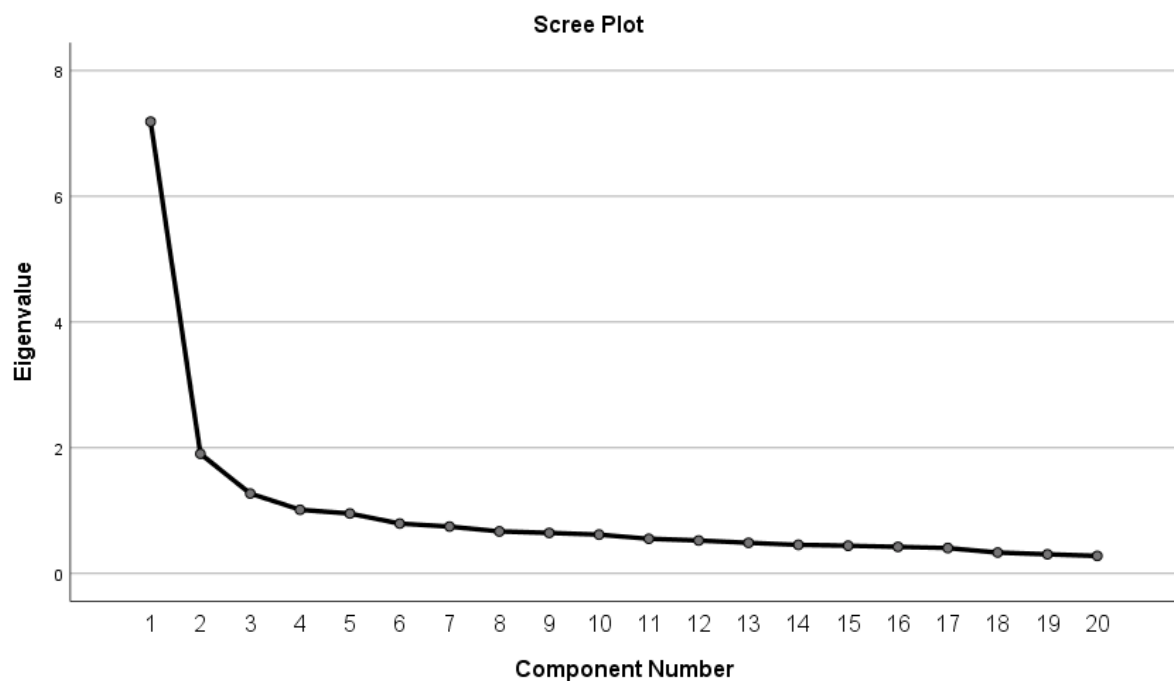


Figure 11 Scree Plot (Source: Computed by Scholar)

Interpretation of Scree Plot

The scree plot illustrates the eigenvalues associated with the 20 opportunity-related variables measuring the role of Artificial Intelligence (AI) in Human Resource Management within Saudi Arabian organisations. The purpose of this plot is to visually determine the appropriate number of components to retain in the Principal Component Analysis (PCA).

From the figure, there is a sharp decline in eigenvalues from Component 1 to Component 2, followed by a gradual decrease up to Component 4. After the fourth component, the curve begins to flatten significantly, forming a clear “elbow” shape. This point of inflection indicates that the most meaningful components are the first four, while the remaining components contribute minimal additional explanatory power.

The first component has a substantially higher eigenvalue (above 7), indicating that it explains the largest proportion of variance among the opportunity variables. This suggests that a dominant opportunity dimension exists—likely reflecting AI’s overall strategic contribution to HR efficiency, productivity, and data-driven decision-making. Components 2, 3, and 4 also have eigenvalues greater than 1, meaning they meet Kaiser’s criterion for retention and represent additional significant opportunity dimensions.

Beyond Component 4, the eigenvalues fall below 1 and the slope becomes nearly horizontal, indicating that the remaining components primarily represent minor or random variance rather than meaningful constructs. Therefore, retaining four components is statistically justified.

In the context of the study, this scree plot confirms that AI-related opportunities in HRM are multidimensional and structured around four core factors. These factors collectively explain a substantial portion of the variance in perceptions regarding AI’s role in enhancing recruitment, performance management, talent development, strategic alignment, productivity, and digital transformation aligned with Saudi Vision 2030.

Overall, the scree plot supports the conclusion that AI functions as a strategic enabler through four major opportunity dimensions, reinforcing the robustness of the factor structure and strengthening the empirical foundation of the study.

Table 25 Rotated Component Matrix^a

Rotated Component Matrix ^a				
	Component			
	1	2	3	4
The efficiency of recruitment and selection in our organisation is augmented with the use of AI				.602
The AIs will increase accuracy when acquiring talents				.629
The HR functions can use AI to make decisions based on data				.615
AI workloads less work on administration and lets HR professionals direct their attention on strategic elements	.656			
Predictive analytics enhances the planning of workforce using AI	.691			
AI improves the performance management by adopting real-time monitoring and feedback system	.650			
The AI facilitates unbiased and bias-minimized employee reviews	.727			
AI allows training and development of employees individually	.726			
Intelligent systems can be used to detect gaps in skills with intelligent analytics	.660			

AI usher in lifelong and upskilling programs		.523		
AI helps in career path planning and talent development		.633		
AI improves the interaction of employees in smart HR platforms		.654		
AI enhances succession planning since it comes with highly potential employees		.513		
Further developed insights contributed by AI enhance leadership advancements		.683		
Artificial intelligence makes the HR an administrative task into a strategic business partner		.743		
AI enhances evidence-based HR practices		.729		
AI increases strategic workforce forecasting functionality		.578		
The use of AI in HR leads to the overall increase in the productivity of the organisation			.694	
AI improves strategic alignment of HR practices and the goals of the organisation			.793	
AI promotes the initiatives of innovation and digital transformation that are consistent with Saudi Vision 2030			.708	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.

(Source: Computed by Scholar)

Interpretation of Rotated Component Matrix

The Rotated Component Matrix presents the factor loadings after applying Principal Component Analysis (PCA) with Varimax rotation in the study “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.*” The rotation converged in 8 iterations, indicating a stable and interpretable factor structure. The results reveal four distinct opportunity dimensions of AI in HRM.

Component 1: Operational Efficiency and Talent Optimization

The first component shows strong loadings on items such as predictive workforce planning (.691), performance management enhancement (.650), bias-minimized employee reviews (.727), personalized training and development (.726), skill gap detection (.660), administrative workload reduction (.656), and workforce forecasting (.578). These loadings indicate that this factor represents AI’s role in improving operational efficiency, optimizing talent management, and enhancing HR analytics. This component highlights AI’s capacity to streamline HR processes, improve fairness, and strengthen data-driven workforce planning.

Component 2: Strategic HR Transformation and Capability Development

The second component loads highly on lifelong upskilling (.523), career path planning (.633), smart HR platforms (.654), succession planning (.513), leadership development insights (.683), transforming HR into a strategic business partner (.743), and evidence-based HR practices (.729). This dimension reflects AI’s contribution to transforming HR from an administrative function into a strategic and capability-driven unit. It emphasizes long-term talent development, leadership advancement, and strategic decision support.

Component 3: Organisational Performance and Strategic Alignment

The third component includes high loadings on productivity improvement (.694), strategic alignment of HR with organisational goals (.793), and promotion of innovation and digital transformation aligned with Saudi Vision 2030 (.708). This factor represents AI's broader organisational impact, linking HR innovation directly to performance outcomes and national digital transformation objectives. It demonstrates that AI is perceived as a driver of competitive advantage and organisational growth.

Component 4: Intelligent Recruitment and Data-Driven Decision-Making

The fourth component loads strongly on recruitment efficiency (.602), accuracy in talent acquisition (.629), and AI-enabled data-driven HR decision-making (.615). This dimension highlights AI's role in modernizing recruitment and selection processes through intelligent systems and advanced analytics, ensuring more precise and efficient hiring outcomes.

The rotated solution clearly demonstrates that AI-related opportunities in HRM are structured across four major dimensions: (1) operational efficiency and talent optimization, (2) strategic HR transformation, (3) organisational performance and alignment, and (4) intelligent recruitment and data-driven decision-making.

These findings confirm that AI is not limited to automating HR tasks but plays a comprehensive strategic role in enhancing workforce capabilities, improving decision accuracy, aligning HR with business objectives, and supporting innovation in line with Saudi Vision 2030. The strong factor loadings across components reinforce the argument that AI serves as a multidimensional strategic enabler capable of transforming organisational performance in Saudi Arabia.

Research Question 4: What strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia?

Table 26 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.877	14

(Source: Computed by Scholar)

Interpretation of Reliability Statistics

The Reliability Statistics table shows a Cronbach's Alpha value of 0.877 for 14 items measuring the recommendations related to Artificial Intelligence (AI) adoption in Human Resource Management (HRM) within the study *“Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia.”*

A Cronbach's Alpha value of 0.877 indicates high internal consistency reliability. In social science research, values above 0.70 are considered acceptable, above 0.80 are good, and values approaching 0.90 indicate very strong reliability. Therefore, this result confirms that the 14 recommendation items are consistently measuring the same underlying construct.

This suggests that the proposed recommendations—such as strategic planning, investment in AI infrastructure, employee training, leadership support, data governance, and ethical AI implementation—are conceptually aligned and statistically coherent. The items are strongly correlated with one another, meaning respondents evaluated these recommendations in a consistent manner.

From a research perspective, this high reliability strengthens the credibility of the recommendations section of the study. It confirms that the instrument used to measure strategic recommendations for AI adoption in HRM is dependable and suitable for further statistical analysis, such as factor analysis or regression modelling.

Overall, the reliability result supports the robustness of the recommendation framework and reinforces the study's conclusion that structured, well-aligned strategic actions are essential for successfully leveraging AI as a transformative enabler of organisational performance in Saudi Arabia.

Table 27 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Devise a clear HR approach, which uses AI, in line with overall corporate goals	600	1	5	4.18	.814
Make AI initiatives strongly committed and sponsored on the top management level	600	1	5	4.39	.619
Create an AI governance structure to regulate its ethical, legal and operational adherence	600	1	5	4.19	.765
Introduce AI to long-term digital transformation plans	600	1	5	4.26	.710
Create cross-functional AI task forces (HR, IT, Legal, Operations)	600	1	5	4.39	.644
Give AI-oriented training to HR managers	600	1	5	4.36	.678

Digital literacy and data analytics Upskill employees in data analytics and digital literacy	600	1	5	4.23	.748
Hire AI and HR analytics individuals to aid in implementation	600	1	5	4.23	.698
Encourage an innovative and experimental culture in HR functions	600	1	5	4.19	.825
Establish human resource AI ethics	600	1	5	3.97	.942
Make decision systems involving AI transparent and explainable	600	1	5	3.75	1.065
Periodically review AI algorithms to reduce the degree of bias in recruitment and scoring	600	1	5	4.19	.818
Compliant with Saudi labour and data protection regulations	600	1	5	3.89	.907
Create systems of accountability of AI in HR decisions	600	1	5	4.05	.871
Valid N (listwise)	600				

(Source: Computed by Scholar)

Interpretation of Descriptive Statistics

The descriptive statistics table presents respondents' perceptions regarding strategic recommendations for implementing Artificial Intelligence (AI) in Human Resource Management (HRM) within Saudi Arabian organisations. With a strong sample size of 600 respondents, the results provide reliable insight into priority actions for successful AI adoption.

Overall, the mean values range from 3.75 to 4.39 on a five-point Likert scale, indicating a high level of agreement with the proposed recommendations. This demonstrates that respondents strongly support structured, strategic, and ethically guided AI implementation in HRM.

The highest mean scores ($M = 4.39$) are observed for two critical recommendations: *strong top management commitment and sponsorship* and *creating cross-functional AI task forces (HR, IT, Legal, Operations)*. This suggests that leadership support and interdepartmental collaboration are viewed as the most essential drivers of successful AI integration. Without executive backing and coordinated governance structures, AI initiatives may struggle to achieve sustainability and strategic alignment.

High agreement is also seen for *AI-oriented training for HR managers* ($M = 4.36$) and *developing a clear AI-based HR strategy aligned with corporate goals* ($M = 4.18$). These findings highlight the importance of capacity building and strategic clarity. Respondents recognize that AI implementation must be intentional, skills-based, and aligned with long-term organisational objectives.

Similarly, recommendations related to *long-term digital transformation planning* ($M = 4.26$), *digital literacy and data analytics upskilling* ($M = 4.23$), and *hiring AI and HR analytics specialists* ($M = 4.23$) indicate strong support for building technical competence and ensuring sustainable digital growth within HR functions.

Ethical and regulatory aspects also receive considerable agreement. The establishment of AI ethics frameworks ($M = 3.97$), ensuring compliance with Saudi labour and data protection regulations ($M = 3.89$), and creating accountability systems ($M = 4.05$) reflect awareness of governance responsibilities. Although slightly lower than operational recommendations, these scores still indicate positive endorsement of responsible AI practices.

The relatively lower mean for *making AI decision systems transparent and explainable* ($M = 3.75$, $SD = 1.065$) suggests more varied opinions among respondents. The higher standard deviation indicates differing levels of understanding or implementation maturity across organisations regarding AI transparency.

Overall, the descriptive results demonstrate strong consensus that AI adoption in HRM requires strategic leadership commitment, governance frameworks, workforce upskilling, ethical

oversight, and regulatory compliance. These recommendations collectively support the study's conclusion that AI can effectively transform organisational performance in Saudi Arabia when implemented through structured, responsible, and strategically aligned initiatives.

Table 28 Correlation Analysis

Correlations															
		Devise a clear HR approach, which uses AI, in line with overall corporate goals	Make AI initiatives strongly committed and sponsored on the top management level	Create an AI governance structure to regulate its ethical, legal and operational adherence	Introduce AI to long-term digital transformation plans	Create cross-functional AI task forces (HR, IT, Legal, Operations)	Give AI-oriented training to HR managers	Digital literacy and data analytics Upskill employees in data analytics and digital literacy	Hire AI and HR analytics individuals to aid in implementation	Encourage an innovative and experimental culture in HR functions	Establish human resource AI ethics	Make decision systems involving AI transparent and explainable	Periodically review AI algorithms to reduce the degree of bias in recruitment and scoring	Compliant with Saudi labor and data protection regulations	Create systems of accountability of AI in HR decisions
Devise a clear HR approach, which uses AI, in line with overall corporate goals	Pearson Correlation	1	.462*	.381**	.386**	.322*	.337**	.307**	.292**	.322*	.258**	.261*	.278*	.286**	.281**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600

Make AI initiatives strongly committed and sponsored on the top management level	Pearson Correlation	.462**	1	.434**	.405**	.414*	.364**	.334**	.332**	.276*	.275**	.222*	.233*	.233**	.283**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Create an AI governance structure to regulate its ethical, legal and operational adherence	Pearson Correlation	.381**	.434*	1	.571**	.416*	.494**	.485**	.405**	.323*	.213**	.254*	.246*	.269**	.253**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Introduce AI to long-term digital transformation plans	Pearson Correlation	.386**	.405*	.571**	1	.583*	.521**	.485**	.469**	.334*	.315**	.226*	.289*	.304**	.302**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Create cross-functional AI task forces (HR, IT, Legal,	Pearson Correlation	.322**	.414*	.416**	.583**	1	.523**	.525**	.471**	.308*	.231**	.221*	.334*	.208**	.240**

Opera tions)															
	Sig. (2- taile d)	0.00 0	0.000	0.00 0	0.000		0.0 00	0.00 0	0.000	0.000	0.0 00	0.00 0	0.00 0	0.00 0	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Give AI- orient ed traini ng to HR mana gers	Pear son Cor relat ion	.337 **	.364* *	.494 **	.521**	.523* *	1	.556 **	.480**	.375* *	.28 3**	.240* *	.310* *	.268 **	.358**
	Sig. (2- taile d)	0.00 0	0.000	0.00 0	0.000	0.00 0		0.00 0	0.000	0.000	0.0 00	0.00 0	0.00 0	0.00 0	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Digita l literac y and data analyt ics Upskil l emplo yees in data analyt ics and digital literac y	Pear son Cor relat ion	.307 **	.334* *	.485 **	.485**	.525* *	.55 6**	1	.531**	.296* *	.24 3**	.250* *	.248* *	.248 **	.311**
	Sig. (2- taile d)	0.00 0	0.000	0.00 0	0.000	0.00 0	0.0 00		0.000	0.000	0.0 00	0.00 0	0.00 0	0.00 0	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Hire AI and HR analyt ics indivi duals to aid in imple menta tion	Pear son Cor relat ion	.292 **	.332* *	.405 **	.469**	.471* *	.48 0**	.531 **	1	.404* *	.36 7**	.226* *	.314* *	.307 **	.343**

	Sig. (2- tailed)	0.00 0	0.000	0.00 0	0.000	0.00 0	0.0 00	0.00 0		0.000	0.0 00	0.00 0	0.00 0	0.00 0	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Encourage an innovative and experimental culture in HR functions	Pearson Correlation	.322**	.276*	.323**	.334**	.308*	.375**	.296**	.404**	1	.440**	.318*	.358*	.310**	.388**
	Sig. (2- tailed)	0.00 0	0.000	0.00 0	0.000	0.00 0	0.0 00	0.00 0	0.000		0.0 00	0.00 0	0.00 0	0.00 0	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Establish human resource AI ethics	Pearson Correlation	.258**	.275*	.213**	.315**	.231*	.283**	.243**	.367**	.440*	1	.476*	.322*	.426**	.430**
	Sig. (2- tailed)	0.00 0	0.000	0.00 0	0.000	0.00 0	0.0 00	0.00 0	0.000	0.000		0.00 0	0.00 0	0.00 0	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Make decision systems involving AI transparent and explainable	Pearson Correlation	.261**	.222*	.254**	.226**	.221*	.240**	.250**	.226**	.318*	.476**	1	.458*	.510**	.362**
	Sig. (2- tailed)	0.00 0	0.000	0.00 0	0.000	0.00 0	0.0 00	0.00 0	0.000	0.000	0.0 00		0.00 0	0.00 0	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Periodically review AI algorithms to reduce the degree of bias in	Pearson Correlation	.278**	.233*	.246**	.289**	.334*	.310**	.248**	.314**	.358*	.322**	.458*	1	.436**	.351**

recruitment and scoring															
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Compliant with Saudi labour and data protection regulations	Pearson Correlation	.286**	.233*	.269**	.304**	.208*	.268**	.248**	.307**	.310*	.426**	.510*	.436*	1	.464**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Create systems of accountability of AI in HR decisions	Pearson Correlation	.281**	.283*	.253**	.302**	.240*	.358**	.311**	.343**	.388*	.430**	.362*	.351*	.464**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	N	600	600	600	600	600	600	600	600	600	600	600	600	600	600
**. Correlation is significant at the 0.01 level (2-tailed).															

(Source: Computed by Scholar)

Interpretation of Correlation Matrix

The correlation matrix presents the Pearson correlation coefficients among the 14 recommendation variables related to Artificial Intelligence (AI) adoption in Human Resource Management (HRM). All correlations are positive and statistically significant at the 0.01 level ($p < 0.01$), based on a strong sample size of 600 respondents. This indicates that the recommendations are meaningfully interrelated and tend to move in the same direction.

Overall, the correlations range from weak to moderate (approximately $r = .208$ to $r = .583$), suggesting that while each recommendation represents a distinct strategic action, they are conceptually connected within a broader AI implementation framework.

One of the strongest relationships is observed between introducing AI into long-term digital transformation plans and creating cross-functional AI task forces ($r = .583$). This suggests that organisations that embed AI within their long-term strategy are also more likely to establish collaborative, cross-departmental structures to support implementation. Similarly, strong correlations are found between AI-oriented training for HR managers and digital literacy upskilling for employees ($r = .556$), indicating that leadership training and employee capability development are closely linked components of successful AI adoption.

Governance-related recommendations also demonstrate meaningful relationships. For example, AI transparency and explainability strongly correlates with compliance with Saudi labour and data protection regulations ($r = .510$) and periodic review of AI algorithms to reduce bias ($r = .458$). This indicates that transparency, regulatory compliance, and bias reduction form a coherent ethical governance cluster. Likewise, establishing AI ethics frameworks correlates positively with accountability systems in HR decisions ($r = .430$), reinforcing the importance of responsible AI practices.

Strategic alignment is also evident in the positive correlation between top management commitment and creating AI governance structures ($r = .434$), as well as introducing AI into long-term digital plans ($r = .405$). These relationships suggest that leadership sponsorship plays a critical role in institutionalizing AI within organisational structures and policies.

Although most correlations are moderate rather than very high, this is desirable in multivariate research because it indicates that the recommendations are related but not redundant. Each item contributes uniquely to the broader AI strategy while maintaining conceptual coherence.

In conclusion, the correlation analysis confirms that effective AI implementation in HRM requires an integrated approach that combines strategic planning, leadership commitment, workforce capability development, ethical governance, regulatory compliance, and accountability mechanisms. The statistically significant positive relationships among all recommendation variables reinforce the idea that AI transformation in Saudi organisations is multidimensional and must be addressed holistically to achieve sustainable organisational performance improvement.

Table 29 Model Summary (Regression Analysis -step 1)

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.737 ^a	0.543	0.532	0.619	0.543	49.734	14	585	0.000
a. Predictors: (Constant), Create systems of accountability of AI in HR decisions, Create cross-functional AI task forces (HR, IT, Legal, Operations), Devise a clear HR approach, which uses AI, in line with overall corporate goals, Make decision systems involving AI transparent and explainable, Encourage an innovative and experimental culture in HR functions, Create an AI governance structure to regulate its ethical, legal and operational adherence, Periodically review AI algorithms to reduce the degree of bias in recruitment and scoring, Make AI initiatives strongly committed and sponsored on the top management level, Hire AI and HR analytics individuals to aid in implementation, Establish human resource AI ethics, Compliant with Saudi labour and data protection regulations, Give AI-oriented training to HR managers, Digital literacy and data analytics									

Upskill employees in data analytics and digital literacy, Introduce AI to long-term digital transformation plans

(Source: Computed by Scholar)

Interpretation of Model Summary

The Model Summary table presents the results of a multiple regression analysis examining how the 14 strategic recommendations for Artificial Intelligence (AI) implementation in Human Resource Management (HRM) collectively influence the dependent variable (likely organisational performance or effective AI integration).

The correlation coefficient ($R = 0.737$) indicates a strong positive relationship between the combined recommendation variables and the outcome variable. This suggests that when organisations implement these strategic recommendations effectively, there is a substantial improvement in AI-related organisational outcomes.

The R Square value of 0.543 indicates that approximately 54.3% of the variance in the dependent variable is explained by the 14 recommendation factors included in the model. In social science research, explaining more than 50% of variance is considered strong, demonstrating that these strategic recommendations play a significant role in shaping AI-driven HR transformation and performance improvement.

The Adjusted R Square (0.532) is very close to the R Square value, showing minimal shrinkage. This indicates that the model is stable and not overly inflated by the number of predictors. It confirms that the recommendations collectively provide genuine explanatory power rather than random statistical effects.

The F-statistic ($F = 49.734$) with $df1 = 14$ and $df2 = 585$, and a significance level of $p = 0.000$, shows that the overall regression model is statistically significant. This means the set of

recommendations, when taken together, significantly predicts the dependent variable and the model fits the data well.

The standard error of the estimate (0.619) indicates a relatively low level of prediction error, suggesting that the model provides reasonably accurate estimates of organisational outcomes based on the recommendation variables.

The regression results strongly support the argument that structured strategic recommendations—such as leadership commitment, AI governance, cross-functional collaboration, workforce upskilling, ethical oversight, transparency, accountability, and regulatory compliance—are critical determinants of successful AI implementation in HRM.

Collectively, these recommendations explain a substantial portion of the improvement in AI-enabled HR effectiveness and organisational performance in Saudi Arabia. The findings confirm that AI transformation is not achieved through isolated initiatives but through an integrated, strategically aligned, and governance-driven framework. This reinforces the study’s conclusion that systematic and well-coordinated recommendations significantly enhance the effectiveness of AI as a strategic enabler in HRM.

Table 30 ANOVA (Regression Analysis -step 2)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	266.813	14	19.058	49.734	.000 ^b
	Residual	224.172	585	.383		
	Total	490.985	599			
a. Dependent Variable: Strategic recommendations proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia						

b. Predictors: (Constant), Create systems of accountability of AI in HR decisions, Create cross-functional AI task forces (HR, IT, Legal, Operations), Devise a clear HR approach, which uses AI, in line with overall corporate goals, Make decision systems involving AI transparent and explainable, Encourage an innovative and experimental culture in HR functions, Create an AI governance structure to regulate its ethical, legal and operational adherence, Periodically review AI algorithms to reduce the degree of bias in recruitment and scoring, Make AI initiatives strongly committed and sponsored on the top management level, Hire AI and HR analytics individuals to aid in implementation, Establish human resource AI ethics, Compliant with Saudi labour and data protection regulations, Give AI-oriented training to HR managers, Digital literacy and data analytics Upskill employees in data analytics and digital literacy, Introduce AI to long-term digital transformation plans

(Source: Computed by Scholar)

Interpretation of ANOVA Table

The ANOVA table presents the overall significance of the multiple regression model examining the strategic recommendations proposed to enhance the effective adoption and integration of Artificial Intelligence (AI) in Strategic Human Resource Management (SHRM) to improve organisational performance in Saudi Arabia.

The Regression Sum of Squares (266.813) represents the variation in the dependent variable explained by the 14 recommendation predictors. The Residual Sum of Squares (224.172) reflects the unexplained variation, while the Total Sum of Squares (490.985) represents the overall variation in the dependent variable. The fact that the explained variance is greater than the unexplained variance indicates that the model has substantial explanatory strength.

The F-statistic ($F = 49.734$) with 14 and 585 degrees of freedom is highly significant at $p = 0.000$ ($p < 0.001$). This confirms that the regression model as a whole is statistically significant. In other words, the combined set of strategic recommendations significantly predicts improvements in AI adoption and integration within HRM.

The Mean Square Regression (19.058) compared to the Mean Square Residual (0.383) further demonstrates that the variation explained by the model is considerably larger than the unexplained variation. This indicates strong model fit and supports the validity of the proposed recommendation framework.

The ANOVA results confirm that the strategic recommendations—such as leadership commitment, governance structures, AI transparency, cross-functional collaboration, workforce upskilling, ethical compliance, accountability systems, and long-term digital transformation planning—collectively have a statistically significant impact on enhancing AI adoption in SHRM.

This finding strengthens the study's conclusion that successful AI integration in Saudi organisations requires a structured, multidimensional strategic approach. The significant F-value demonstrates that these recommendations are not independent or random suggestions but form a coherent and impactful framework capable of improving organisational performance through AI-enabled HR transformation.

Hypothesis Testing Results

S.No.	Hypothesis Statements	Decision
H01	There are no significant factors that influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia.	Rejected
Ha1	There are significant factors that influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia.	Accepted

H02	There are no major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices.	Rejected
Ha2	There are major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices.	Accepted
H03	There are no strategic opportunities that Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia.	Rejected
Ha3	There are strategic opportunities that Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia.	Accepted
H04	There are no strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia.	Rejected
Ha4	There are strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia.	Accepted

(Source: Computed by Scholar)

Summary and Conclusion

This study, titled “*Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia,*” examined the role of AI in reshaping HR practices and enhancing organisational performance. The research adopted a quantitative approach using a structured questionnaire administered to 600 respondents, ensuring strong statistical power and representativeness. The analysis progressed systematically from demographic profiling to reliability testing, factor analysis, correlation analysis, and regression modelling to provide a comprehensive understanding of AI’s strategic role in HRM.

The demographic profile of respondents provided foundational insight into the characteristics of participants involved in HR and organisational decision-making processes. The large sample size enhanced the reliability and generalizability of the findings. The diversity within the sample likely captured varied organisational experiences regarding AI adoption, maturity levels, and digital transformation readiness across Saudi Arabian organisations. This demographic breadth strengthens the external validity of the study’s conclusions.

Reliability analysis was conducted to ensure the internal consistency of the measurement scales. The opportunities scale (20 items) produced a Cronbach’s Alpha of 0.901, indicating excellent reliability, while the recommendations scale (14 items) yielded a Cronbach’s Alpha of 0.877, reflecting high reliability. These results confirm that the survey instrument consistently measured the intended constructs. High internal consistency strengthens the credibility of subsequent statistical analyses and validates the robustness of the research design.

Descriptive statistics revealed strong agreement among respondents regarding the opportunities created by AI in HRM. High mean scores across items demonstrated that AI is widely perceived as enhancing recruitment efficiency, performance management, workforce planning, productivity, and strategic alignment. Respondents also recognized AI’s contribution to reducing bias, supporting data-driven decision-making, enabling personalized training, and aligning HR practices with broader digital transformation goals, including Saudi Vision 2030. Although slight variability was observed in areas such as transparency and strategic forecasting, overall perceptions remained strongly positive. These findings confirm that

organisations view AI not merely as a technological tool but as a transformative strategic enabler.

To examine the structural validity of the opportunity constructs, factor analysis was performed. The KMO value of 0.912 and significant Bartlett's Test confirmed sampling adequacy and the appropriateness of factor analysis. Principal Component Analysis identified four meaningful components with eigenvalues greater than one. The scree plot further supported the retention of four factors. Together, these components explained a substantial proportion of total variance, demonstrating that AI opportunities in HRM are multidimensional.

The rotated component matrix clarified the structure of these dimensions. The first component reflected operational efficiency and talent optimization, including predictive analytics, performance management, and bias reduction. The second represented strategic HR transformation and capability development, emphasizing leadership development, evidence-based practices, and transformation of HR into a strategic business partner. The third component captured organisational performance and strategic alignment, linking AI adoption to productivity and innovation aligned with national objectives. The fourth focused on intelligent recruitment and data-driven decision-making. This multidimensional structure confirms that AI contributes simultaneously to operational, strategic, developmental, and performance-related domains.

Communalities analysis further supported the factor structure, with most variables demonstrating acceptable extraction values above 0.50. This indicates that the retained components adequately explain the variance in opportunity-related items. The results demonstrate strong construct validity and reinforce the argument that AI-driven transformation in HRM is structured and empirically grounded.

The study also examined strategic recommendations for enhancing AI adoption in HRM. Descriptive analysis showed high agreement on critical actions such as top management commitment, cross-functional collaboration, governance structures, workforce upskilling, ethical oversight, regulatory compliance, and accountability systems. These findings suggest that respondents recognize AI implementation as a comprehensive organisational change process requiring leadership support, technical competence, and responsible governance frameworks.

Correlation analysis revealed positive and statistically significant relationships among all recommendation variables. The moderate correlations indicate conceptual coherence without redundancy. Strong relationships between governance, transparency, compliance, and bias reduction emphasize the interconnectedness of ethical AI practices. Similarly, strong correlations between leadership commitment, digital transformation planning, and cross-functional collaboration highlight the strategic alignment necessary for effective AI integration. These interrelationships confirm that successful AI implementation depends on a holistic and integrated approach.

To assess the predictive strength of these recommendations, multiple regression analysis was conducted. The model summary showed a strong correlation ($R = 0.737$) and an R Square value of 0.543, indicating that approximately 54.3% of the variance in effective AI adoption and organisational performance is explained by the 14 strategic recommendation variables. The adjusted R Square (0.532) confirmed model stability, while the highly significant F-statistic ($F = 49.734$, $p < 0.001$) demonstrated overall model validity. The ANOVA results further confirmed that the regression model significantly predicts strategic AI adoption outcomes.

These findings collectively demonstrate that AI adoption in HRM is not an isolated technological initiative but a strategic transformation process requiring coordinated governance, leadership commitment, skill development, transparency, and accountability. The regression results empirically validate that these structured recommendations significantly enhance effective AI integration and organisational performance.

In conclusion, this study provides strong empirical evidence that Artificial Intelligence serves as a powerful strategic enabler in Human Resource Management within Saudi Arabia. The findings confirm that AI enhances recruitment efficiency, workforce planning, performance management, strategic alignment, productivity, and innovation. Factor analysis revealed that AI opportunities are structured across multiple dimensions, reflecting its comprehensive impact on HR transformation.

Furthermore, the research establishes that successful AI integration depends on well-defined strategic recommendations, including executive sponsorship, governance frameworks, cross-functional collaboration, digital literacy development, ethical oversight, regulatory compliance, and accountability mechanisms. The regression analysis demonstrates that these

recommendations significantly predict improved organisational performance and effective AI adoption.

Overall, the study contributes to both academic literature and practical implementation frameworks by providing a statistically robust and multidimensional understanding of AI-driven HR transformation. It supports the view that AI, when strategically aligned and responsibly governed, can substantially enhance organisational performance and contribute to the broader digital transformation objectives of Saudi Arabia.

Chapter 5

Discussion of the Study

Discussion of the Study – Question 1

RQ1: What are the factors influencing Artificial Intelligence in Human Resource Management functions within organisations in Saudi Arabia?

The findings of this study indicate that several interrelated organisational, technological, and strategic factors influence the adoption and effectiveness of Artificial Intelligence (AI) in Human Resource Management (HRM) functions within Saudi Arabian organisations. The statistical analyses demonstrate that AI adoption is not driven by a single determinant but rather by a combination of structural readiness, leadership commitment, workforce capability, and governance frameworks.

One of the most influential factors identified is top management commitment and strategic alignment. The strong correlations between leadership sponsorship, long-term digital transformation planning, and AI governance structures suggest that AI implementation requires visible executive support and clear integration into corporate strategy. This aligns with strategic management theory, which emphasizes that digital transformation initiatives are more successful when driven from the top. In the Saudi Arabian context, where large organisations and government-driven initiatives play a critical role in digital advancement, executive endorsement becomes even more significant.

Another important factor influencing AI in HRM is organisational digital maturity and technological infrastructure. The factor analysis results revealed components related to operational efficiency, data-driven decision-making, and predictive analytics. These findings suggest that organisations with stronger digital ecosystems are better positioned to integrate AI into recruitment, performance management, workforce planning, and talent analytics. AI systems rely heavily on data quality and integrated HR information systems; therefore, technological readiness significantly shapes implementation success.

Human capital capability also emerged as a crucial factor. High agreement levels for AI-oriented training, digital literacy development, and hiring AI analytics professionals indicate that workforce skills directly influence AI integration. Without HR professionals who

understand analytics and algorithmic decision-making, AI tools may remain underutilized. The strong relationship between training and digital literacy further reinforces that capability-building is a foundational determinant of AI effectiveness.

Additionally, organisational culture plays a pivotal role. The recommendation to encourage innovative and experimental HR cultures reflects the need for adaptability and openness to change. AI adoption often challenges traditional HR practices, requiring a shift from intuition-based decision-making to evidence-based analytics. Organisations resistant to change may struggle with AI integration despite having technological resources.

Finally, governance and regulatory compliance influence AI implementation. Positive correlations between transparency, compliance with Saudi labor regulations, and accountability systems highlight the importance of ethical and legal considerations. In Saudi Arabia's evolving regulatory landscape, particularly concerning data protection and digital transformation, organisations must ensure AI systems align with national laws and ethical expectations.

Overall, the discussion of RQ1 confirms that AI adoption in HRM is influenced by a multidimensional set of factors, including leadership support, technological readiness, workforce capability, cultural openness, and governance mechanisms. These determinants collectively shape the success of AI-driven HR transformation in Saudi organisations.

Discussion of the Study – Question 2

RQ2: What are the major challenges faced by organisations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices?

While the study highlights significant opportunities associated with AI adoption, it also reveals critical challenges that organisations face when integrating AI into Strategic Human Resource Management (SHRM). These challenges are technological, organisational, ethical, and regulatory in nature.

One primary challenge is lack of technical expertise and digital skills gaps. Although respondents strongly supported training initiatives, variability in responses regarding

transparency and explainability suggests uneven levels of AI literacy across organisations. AI systems require not only technical knowledge but also the ability to interpret outputs and manage algorithmic biases. The shortage of AI and HR analytics professionals can slow implementation and limit effective utilization.

Another challenge relates to ethical concerns and bias in AI algorithms. Despite high agreement on reviewing algorithms and establishing AI ethics frameworks, moderate variability indicates uncertainty in practical execution. AI systems trained on biased data can perpetuate inequalities in recruitment and performance evaluation. Ensuring fairness, accountability, and transparency remains a significant barrier, especially in HR contexts where decisions directly impact employees' careers.

Organisational resistance to change also presents a challenge. Transitioning from traditional HR processes to AI-driven systems may generate fear among employees and HR professionals who perceive AI as a threat to job security or autonomy. Cultural resistance can undermine implementation efforts even when technological infrastructure exists.

Additionally, data privacy and regulatory compliance pose substantial challenges. Compliance with Saudi labour laws and data protection regulations requires careful management of employee data. AI systems rely heavily on personal and performance data, raising concerns about confidentiality, consent, and legal risk. The correlation between transparency and compliance indicates that organisations recognize this challenge but may face difficulties in operationalizing governance structures.

Financial and infrastructural constraints may also hinder AI adoption, particularly in small and medium enterprises. Implementing advanced AI systems requires investment in software, training, cybersecurity, and integration with existing HR systems. Without clear return-on-investment metrics, organisations may hesitate to allocate sufficient resources.

Overall, RQ2 highlights that AI integration in SHRM is complex and requires overcoming technical skill shortages, ethical concerns, cultural resistance, regulatory compliance issues, and resource limitations. Addressing these challenges is essential for sustainable AI-driven HR transformation.

Discussion of the Study – Question 3

RQ3: What strategic opportunities does Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organisational performance in Saudi Arabia?

The study findings strongly confirm that AI creates significant strategic opportunities for enhancing HR effectiveness and organisational performance. High mean scores across opportunity variables demonstrate widespread recognition of AI's transformative potential.

One major opportunity lies in enhancing recruitment and talent acquisition efficiency. AI-powered systems improve candidate screening accuracy, reduce time-to-hire, and minimize human bias. This increases fairness and enables organisations to attract high-quality talent aligned with strategic objectives.

AI also enhances performance management and workforce planning. Predictive analytics and real-time feedback systems enable evidence-based evaluations and proactive workforce forecasting. These capabilities improve strategic workforce planning and allow organisations to anticipate skill shortages or succession gaps.

In terms of workforce development, AI enables personalized training and upskilling programs. Intelligent systems identify skill gaps and recommend targeted learning interventions, supporting lifelong learning and continuous professional development. This aligns with Saudi Arabia's national vision of building a knowledge-based economy.

Another strategic opportunity is the transformation of HR into a strategic business partner. AI-driven analytics provide actionable insights that align HR decisions with corporate strategy. The factor analysis demonstrated that strategic alignment and productivity improvement are core dimensions of AI impact.

Furthermore, AI supports innovation and digital transformation initiatives. By integrating AI into long-term strategic planning, organisations strengthen their competitive advantage and contribute to broader national digital objectives.

Overall, RQ3 confirms that AI creates multidimensional strategic opportunities that enhance operational efficiency, workforce capability, strategic alignment, and organisational performance.

Discussion of the Study – Question 4

RQ4: What strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organisational performance in Saudi Arabia?

The regression analysis demonstrates that strategic recommendations collectively explain a significant proportion of variance in effective AI adoption. This confirms the importance of structured implementation frameworks.

First, strong top management commitment is essential. Leadership sponsorship ensures adequate resource allocation and strategic prioritization. Without executive backing, AI initiatives may remain fragmented.

Second, organisations must establish robust AI governance structures that ensure ethical compliance, transparency, and accountability. Periodic algorithm reviews and clear accountability systems reduce bias and build employee trust.

Third, workforce upskilling and training programs are critical. AI-oriented training for HR managers and digital literacy initiatives empower employees to effectively use AI tools.

Fourth, organisations should promote cross-functional collaboration between HR, IT, legal, and operations departments. AI implementation requires interdisciplinary coordination to address technical and regulatory considerations.

Finally, AI adoption should be embedded in long-term digital transformation strategies, aligned with organisational goals and national development agendas.

In conclusion, the discussion across all research questions confirms that AI adoption in SHRM is influenced by multiple organisational factors, faces significant challenges, creates transformative opportunities, and requires structured strategic recommendations. Collectively, the findings highlight AI as a powerful enabler of sustainable organisational performance in Saudi Arabia.

Chapter 6

Implications, Summary and Recommendations

6.1. Implications of the Study

The study results related to the Artificial Intelligence (AI) in Strategic Human Resource Management (SHRM) in organisations in Saudi Arabia have profound theoretical, managerial, policy, and societal implication. The implications do not only contribute to the academic literature but also offer practical guidelines to organisations finding it essential to align the adoption of AI with the strategic targets and the national transformation agenda.

Theoretical Implications

The research paper is a contribution to the rising literature on AI-enabled Strategic Human Resource Management, as it is a combination of technology adoption aspects of AI with the HRM and organisational performance theories. It supports the topicality of various frameworks e.g., the Technology-Organisation-Environment (TOE) model and the Resource-Based View (RBV), showing that the capability in AI can serve as a strategic resource in case it is backed up with the organisational preparedness, the commitment of the leader, and the technological infrastructure. The results indicate that the implementation of AI in the field of HRM is not just the change in technology but a multidimensional change that depends on the factors of structures, cultures, and strategies.

Besides, the research adds value to the literature on HRM by placing AI as an operational resource as well as a strategic facilitator that improves analytics of workforce, talent management, prediction of decisions and performance to be optimized. It also brings on board the regional knowledge about Saudi Arabia, which is an emerging economy that is also experiencing a high rate of digital transition and adds contextual evidence to the global discourse with Middle Eastern knowledge.

Managerial Implications

To the HR heads and top management at the Saudi organisations, the research provides practical insight into the factors and obstacles that could have driven or hindered the incorporation of AI. Managers should be aware that achieving the successful implementation of AI can demand not only financial resources but also the organisational preparedness, employee training, increasing the digital literacy level, and cultural acceptance of the technological change.

The results imply the HR departments should move towards the strategic and analytics-oriented functions instead of transactions. There are accuracy in the recruitment, objectivity in the performance evaluation, workforce planning efficiency, and workforce analytics that can be enhanced with the help of AI tools. Nevertheless, organisations need to deal with employee resistance, ethical issues, and privacy of data using clear communication and managed change management programmes.

Also, the research suggests that leadership dedication is very significant in determining digital transformation success. To implement AI, senior executives should lead AI efforts, devote sufficient resources, and strategy AI alignment as per the long-term organisational objectives. It is also necessary to create cross- functional cooperation between the IT and HR departments, so that the integration could be smooth and would be sustained.

Policy and National-Level Implications

Considering the Saudi Arabia agenda of vision 2030 and the focus on digital transformation, innovation and diversification of the economy, the study has a relevant policy implication. Government officials may apply these results in drafting conducive regulatory policies that boost AI acceptance without stepping on ethical principles and human rights.

The findings indicate that the government should initiate strategies aimed at augmenting the AI literacy, digital skills training and workforce upskilling courses. The national institutions can reach out to creating incentives to invest in AI in the form of tax breaks, public-private co-operation, and innovation grants. Installing some standardized AI governance structures and the laws controlling data protection will enhance the organisational trust in making the transition to AI-based HR systems.

It is also proposed in the study that academic, industry, and government collaboration would be essential to address skill deficiencies and make sure that educational curricula and emerging AI-driven HR skills are not out-of-step with each other.

Organisational Performance Implications

These results indicate that AI implementation has a positive effect on HR effectiveness and organisational performance in case of a strategic application. The AI-driven analytics serve to improve the effectiveness of decision-making processes, minimize human bias, streamline talent acquisition strategies, and manage to make the workforce more productive. Those

organisations that manage to implement AI into SHRM have more chances to realize competitive advantage, operational efficiency, and an ability to innovate.

Nevertheless, the research suggests that AI performance depends on organisational culture, acceptance by employees and ongoing capability development. To achieve the sustainability of the benefits, companies have to allocate investment to the training programs, promote the culture of learning, and measure the performance of AI consistently.

Societal and Workforce Implications

Wider workforce implications in the study are also pointed out. Although AI can enhance efficiency and help decrease small, monotonous administrative work, it can also generate the issues of job loss and role redefinition. Hence, companies should target reskilling and upskilling their employees to be able to handle the work environment of AI augmentation.

When well-constructed AI in HRM may facilitate fairness and transparency, unfair algorithms can also support inequalities unless closely monitored in such cases. Therefore, independent AI governance and best implementation practices can guarantee an inclusive workforce development.

6.2. Summary

The article was called Artificial Intelligence as a Strategic Enabler in Human Resource Management: Transforming information technology industry in Saudi Arabia that explored the problems of AI to transform HR practices and improve organisational performance. The study pursued the quantitative approach, which employed a formulated questionnaire developed to 600 respondents, thereby good statistical power and representativeness. To present a detailed picture on how AI has strategic role in HRM, the analysis was conducted systematically starting with demographic profiling, reliability testing, factor analysis, correlation analysis, regression modelling and so on.

The demographic profile of respondents that was given came as a background about the nature of respondents who are involved in HR and organisational decision-making processes. The high sample size increased the internal validity and scalability of the results. The sample was probably diversified to ensure different experiences amongst the organisations in terms of AI adoption, levels of maturity, and digital transformation preparedness in the Saudi Arabian organisation. It is a population coverage that helps support the outer validity of the research findings.

Reliability was done to ascertain the inner consistency of the measurement scales. The opportunities scale (20-item) gave a good Cronbach's Alpha of 0.901 a value corresponding to high reliability, whereas recommendations scale (14-item) had a Cronbach's Alpha of 0.877, which is also high reliability. These findings prove that the survey tool was reasonably valid to measure the desired constructs. The fact that there is high internal consistency gives future statistical analysis greater credibility and the strength of the research design.

The descriptive statistics provided indicated that there existed a high level of consensus among the respondents on the opportunities that AI has brought to HRM. A high average score of items proved that AI positively influences how efficiently recruitment works, the management of performance, human resources planning, productivity, and strategic alignment. Another internal benefit that respondents identified from AI is helping to reduce bias, assist in making decisions based on data, empower customised training, and align HR practices with other larger digital transformation objectives, such as Saudi Vision 2030. Despite minor change in various areas like the transparency and strategic outlook, the overall perceptions were highly positive. These results validate that AI is not seen by the organisations as a technological device but as a strategic-enabling tool.

Factor analysis was done to test the constructs of opportunity, concerning structural validity. A KMO equal to 0.912 and a significant Bartlett test value was attestation of sampling adequacy and relevance of factor analysis. Principal Component Analysis was used to show four meaningful components that had eigenvalues that were above one. The retention of four factors was another fact that the scree plot supported. These elements, together, described a considerable percentage of overall variance, which proves the fact that AI opportunities in HRM are multidimensional.

These dimensions were explained by the rotated component matrix. The former element was operational performance and talent optimization, such as predictive analytics, performance management, and bias reduction. The latter was strategic HR change and growth, which focused on HR as a strategic business partner, the development of leadership, evidence-based practices, as well as the transformation of HR. The third element included organisations performance and strategic alignment, indicating that the adoption of AI was associated with productivity and innovation in line with the national goals. The fourth was concerned with smart recruitment and information-based decision-making. This multi-dimensional complex

proves that AI can bring contributions to the operational, strategic, developmental, and performance-related sphere at the same time.

The analysis was further supported by community similarities meaning that majority of the variables had reasonable extraction values over 0.50. This is a suggestion that the items that are retained adequately explain the variance in the opportunity-related items. The findings show that it has strong construct validity and supports the case that AI-driven HRM transformation is organized and evidence based.

The paper has also analysed strategic suggestions on how AI can be adopted in HRM. Descriptive analysis revealed low disagreement in most important action like top management devotion, cross-functional, governance structure, workforce up-to-date, and ethical controls, regulatory conformance and accountability systems. It is possible that these results can be interpreted as the acknowledgment of the respondents that the implementation of AI is a complex organisational change process that needs the support of leadership, technical skills, and responsible governing structures.

The analysis of correlation showed that all variables of recommendation had statistical and significant correlations with each other. The moderate correlations suggest coherent concepts and no redundancy. Close ties exist among the governance, transparency, compliance, and bias mitigation, and the connections among ethical AI conduct. It can be said in a similar manner, that the relationships among leadership commitment, digital transformation planning, and cross-functional collaboration are highly correlated and are pointers to the strategic alignment to be present to ensure successful integrations of AI. Such interrelationships validate the fact that the successful implementation of AI requires the holistic and integrated approach.

To assess the predictive strength of these recommendations, multiple regression analysis was conducted. The model summary showed a strong correlation ($R = 0.737$) and an R Square value of 0.543, indicating that approximately 54.3% of the variance in effective AI adoption and organisational performance is explained by the 14 strategic recommendation variables. The adjusted R Square (0.532) confirmed model stability, while the highly significant F-statistic ($F = 49.734$, $p < 0.001$) demonstrated overall model validity. The ANOVA results further confirmed that the regression model significantly predicts strategic AI adoption outcomes.

These findings collectively demonstrate that AI adoption in HRM is not an isolated technological initiative but a strategic transformation process requiring coordinated governance, leadership commitment, skill development, transparency, and accountability. The regression results empirically validate that these structured recommendations significantly enhance effective AI integration and organisational performance.

Overall, this paper offers excellent empirical research to conclude that Artificial Intelligence could be a significant strategic enabler in Human Resource Management in Saudi Arabia. The results prove that AI improves hiring effectiveness, human resource planning, performance management, strategy alignment, productivity, and innovation. The analysis of factors indicated that the opportunities of AI are organized in a multidimensional way, which indicates the broad scope of its influence in terms of HR transformation.

In addition, the study defines that effective AI adoption is reliant on clear strategic guidelines, such as executive commitment, administration structures, cross-functional integration, digital literacy, ethical management, regulations, and responsibility systems. The regression analysis indicates that the recommendations are significant predictors of the better performance and successful adoption of AI by the organisation.

Overall, the research makes contributions to the body of literature and workspace implementation models because it offers a statistically sound and multidimensional concept of AI-based HR change. It substantiates an opinion that AI, strategically oriented and managed responsibly, will contribute greatly to the organisational performance, and it will be part of the overall digital transformation goals of Saudi Arabia.

6.3. Recommendations of the Study

Based on the findings regarding the factors influencing Artificial Intelligence (AI) adoption, the challenges faced by organisations, and the strategic opportunities created within Strategic Human Resource Management (SHRM) in Saudi Arabia, the following recommendations are proposed:

1. Develop a Clear AI-Driven HR Strategy

Organisations should formulate a well-defined AI strategy aligned with overall corporate objectives and Saudi Arabia's digital transformation goals. AI implementation in HR should not be treated as a standalone IT initiative but as a strategic business transformation tool. Clear roadmaps, measurable KPIs, and phased implementation plans should be developed to ensure structured adoption.

2. Strengthen Leadership Commitment and Digital Governance

Top management must actively champion AI integration within HR functions. Leadership commitment is crucial for resource allocation, cultural transformation, and overcoming resistance to change. Organisations should establish AI governance committees to oversee ethical compliance, transparency, accountability, and risk management in AI-driven HR systems.

3. Invest in Employee Training and Digital Upskilling

One of the major barriers identified is the lack of AI literacy and technical expertise. Organisations should implement continuous training programs to enhance digital competencies among HR professionals and employees. Upskilling initiatives should focus on HR analytics, data interpretation, AI tool usage, and digital ethics to ensure effective utilization of AI systems.

4. Enhance Technological Infrastructure

Organisations must invest in robust IT infrastructure, secure cloud systems, and data management frameworks to support AI-based HR applications. Reliable databases and integrated HR information systems are essential for accurate AI-driven decision-making. Strengthening cybersecurity measures is equally important to protect sensitive employee data.

5. Promote Change Management and Cultural Readiness

Resistance to change remains a significant challenge. Organisations should adopt structured change management practices that include employee engagement, transparent communication, and involvement in AI adoption processes. Creating a culture that encourages innovation, experimentation, and learning will improve acceptance and long-term sustainability.

6. Ensure Ethical and Responsible AI Implementation

To address concerns regarding bias, discrimination, and data privacy, organisations should establish ethical AI guidelines. Regular audits of AI algorithms must be conducted to ensure

fairness and transparency in recruitment, performance evaluation, and promotion decisions. Compliance with national data protection regulations should be strictly maintained.

7. Foster Collaboration Between HR and IT Departments

Effective AI integration requires strong collaboration between HR professionals and IT specialists. Cross-functional teams should be created to design, implement, and monitor AI-based HR systems. This collaboration ensures technical feasibility while maintaining alignment with HR strategic goals.

8. Start with Pilot Projects and Gradual Scaling

Organisations should begin with pilot AI projects in specific HR functions such as recruitment screening or workforce analytics. Pilot testing allows organisations to evaluate system effectiveness, identify challenges, and refine implementation strategies before large-scale deployment.

9. Encourage Government and Industry Support

Policymakers should provide incentives, funding opportunities, and regulatory clarity to encourage AI adoption in HR practices. Public-private partnerships and collaborations with universities can help bridge skill gaps and accelerate innovation in AI-enabled HR systems.

10. Monitor and Evaluate AI Performance Regularly

Continuous monitoring and performance evaluation mechanisms should be established to measure the effectiveness of AI tools in improving HR efficiency and organisational performance. Feedback systems should be implemented to ensure continuous improvement and adaptation.

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Part-I
Demographic profile

Name of Respondent: _____

City: _____

Q 1. Age

- | | |
|-------------------|-------------------|
| A) Below 29 years | B) 30 to 39 years |
| C) 40 to 49 years | D) Above 49 years |

Q2. Gender

- | | |
|---------|-----------|
| A) Male | B) Female |
|---------|-----------|

Q3. Marital Status

- | | |
|-----------|------------|
| A) Single | B) Married |
| C) Others | |

Q 4. Educational Qualification

- | | |
|-------------------|-----------------------|
| A) Below Graduate | B) Graduate |
| C) Post Graduate | D) Above Postgraduate |

Q 5. Monthly Income (in Saudi Riyal)

- | | |
|--------------------|---------------------|
| A) Below 10,000 | B) 10,001 to 20,000 |
| C) 20,001 to 35000 | D) Above 35000 |

Q 6. Years of experience in banking sector

- | | |
|---------------------|-----------------------|
| A) Less than 1 year | B) 2 to 5 years |
| C) 6 to 10 years | D) More than 10 years |

Q 7. Type of Family

- | | |
|-------------------|-----------------|
| A) Nuclear Family | B) Joint Family |
|-------------------|-----------------|

Q8. Size (no. of persons in your family)

A) 2
C) 6 to 9

B) 3 to 6
D) More than 9

PART-II

Q9: What are the factors influencing Artificial Intelligence in Human Resource Management functions within organizations in Saudi Arabia? (Mark ✓)

- Top management support and leadership commitment
- Digital transformation awareness within the company
- Financial resources and AI investing capacity
- Organizational culture regarding change and innovation
- Strategic alignment of AI programs and HR strategy
- Size of the organization
- Digital literacy and AI competency of HR professionals
- Resistance against AI by employees
- Technology Acceptance Model factors of perceived usefulness and ease of use
- Accessibility of AIs workforce
- Training and upskilling systems

Q10: What are the major challenges faced by organizations in Saudi Arabia in adopting and integrating Artificial Intelligence into Strategic Human Resource Management practices?

S.NO.	Statements	Strong Disagree	Disagree	Neutral	Agree	Strong Agree
1.	Our company does not have a clear strategic vision of introducing AI in the HRM practices					
2.	The top management fails to offer					

	enough support to AI-based HR programs					
3.	Employees show resistance towards change in terms of implementation of AI in HR functions					
4.	The culture of organizations fails to promote technological change in HRM					
5.	There has not been much cross-departmental work that can support the integration of AI within the HR processes					
6.	In the case with our organization, the necessary IT infrastructure to implement AI in the context of HRM is missing					
7.	The AI-based HR systems are constrained by poor data quality					
8.	The use of AI tools and current HR Information Systems (HRIS) is complicated					
9.	Data security and					

	cybersecurity concerns restrict AI adoption in HR					
10.	The aspects of HR that involve AI technologies are seen as unreliable or inaccurate					
11.	HR specialists do not have enough skills and technical knowledge regarding AI					
12.	Workers are afraid of losing their jobs to the automation of AI in human resources					
13.	The AI is inadequately trained to be applied in HRM					
14.	The unawareness of the benefits relating to AI can act as an obstacle towards AI usage in HR practices					
15.	There is a very poor trust in AI decision-making systems in HR					
16.	The implementation of AI is expensive and this limits its use in HRM					

17.	Investment in AI-driven HR technologies is not possible because of the budget constraints					
18.	The AI in HRM has an uncertain return on investment (ROI)					
19.	AI systems have high costs of maintenance and upgrading					
20.	The issue of the ethical aspects of algorithmic bias in recruitment influences the decisions of AI based staffing decisions					

Q11: What strategic opportunities does Artificial Intelligence create for enhancing HR effectiveness, workforce development, and organizational performance in Saudi Arabia?

S.NO.	Statements	Strong Disagree	Disagree	Neutral	Agree	Strong Agree
1.	The efficiency of recruitment and selection in our organization is augmented with the use of AI					
2.	The AIs will increase accuracy when					

	acquiring talents					
3.	The HR functions can use AI to make decisions based on data					
4.	AI workloads less work on administration and lets HR professionals direct their attention on strategic elements					
5.	Predictive analytics enhances the planning of workforce using AI					
6.	AI improves the performance management by adopting real-time monitoring and feedback system					
7.	The AI facilitates unbiased and bias-minimized employee reviews					
8.	AI allows training and development of employees individually					
9.	Intelligent systems can be used to detect gaps in skills with intelligent analytics					

10.	AI usher in lifelong and upskilling programs					
11.	AI helps in career path planning and talent development					
12.	AI improves the interaction of employees in smart HR platforms					
13.	AI enhances succession planning since it comes with highly potential employees					
14.	Further developed insights contributed by AI enhance leadership advancements					
15.	Artificial intelligence makes the HR an administrative task into a strategic business partner					
16.	AI enhances evidence-based HR practices					
17.	AI increases strategic workforce forecasting functionality					
18.	The use of AI in HR leads to the					

	overall increase in the productivity of the organization					
19.	AI improves strategic alignment of HR practices and the goals of the organization					
20.	AI promotes the initiatives of innovation and digital transformation that are consistent with Saudi Vision 2030.					

Q12: What strategic recommendations can be proposed to enhance the effective adoption and integration of Artificial Intelligence in Strategic Human Resource Management to improve organizational performance in Saudi Arabia? (Mark ✓)

- Devise a clear HR approach, which uses AI, in line with overall corporate goals.
- Make AI initiatives strongly committed and sponsored on the top management level.
- Create an AI governance structure to regulate its ethical, legal and operational adherence.
- Introduce AI to long-term digital transformation plans.
- Create cross-functional AI task forces (HR, IT, Legal, Operations).
- Give AI-oriented training to HR managers.
- Digital literacy and data analytics Upskill employees in data analytics and digital literacy.
- Promote lifelong learning based on AI-powered LMS.
- Hire AI and HR analytics individuals to aid in implementation.
- Encourage an innovative and experimental culture in HR functions.
- Establish human resource AI ethics.
- Make decision systems involving AI transparent and explainable.

- Periodically review AI algorithms to reduce the degree of bias in recruitment and scoring.
- Compliant with Saudi labour and data protection regulations.
- Create systems of accountability of AI in HR decisions.

Appendix B
Informed Consent

Informed Consent

You are invited to participate in a research study conducted by **Amna Albar**, Doctor of Business Administration (DBA) student.

This study examines the challenges of digital transformation implementation, particularly the integration of platforms and AI within HR functions.

Your participation involves completing a short online survey, which will take approximately 10–15 minutes.

Participation is entirely voluntary. You may withdraw at any time without any consequences. All responses will remain anonymous and will be used strictly for academic research purposes only. No personally identifiable information will be disclosed.

By proceeding with this survey, you confirm that you are 18 years or older and that you voluntarily agree to participate.

Your collaboration and support are sincerely appreciated.