SCIENTIFIC CULTURE

www.sci-cult.com

SCIENTIFIC CULTURE, Vol. 11, No. 4, (2025), pp. 2499-2521
Open Access. Online & Print

DOI: 10.5281/zenodo.11425292

THE IMPACT OF HUMAN RESOURCE PLANNING ON WORKFORCE AGILITY: THE MEDIATING ROLE OF ARTIFICIAL INTELLIGENCE

Sahar Moh'd Abu Bakir[1], Ahmad Y. Ahmad Bani Ahmad[2], Hadher Sabah Shair[3], Ahmad Raja Albatayne[4], Abdullah Ewayed Twairesh[5], Iyad A. Al-Nsour[6*]

[1]Associate Professor, College of Business, University: Amman Arab University, Mubis, Jordan
[2]Faculty of Business, Amman Arab University, Jordan.
[3]University of Tikrit. Iraq.
[4]Business Faculty, Amman Arab University, Jordan.
[5]Department of Finance and Insurance, College of Business Administration, Northern Border University, Arar, Saudi Arabia
[6]College of Media and Communication, Imam Mohammad Ibn Saud Islamic University (IMSIU), Riyadh, Saudi Arabia. Email: Iaalnsour@imamu.edu.sa

Received: 11/11/2025
Accepted: 18/12/2025

Corresponding Author: Iyad A. Al-Nsour (Iaalnsour@imamu.edu.sa)

ABSTRACT

The article investigated how Human Resource Planning (HRP) influences workforce agility with the help of the mediating role of Artificial Intelligence (AI), as applied to the Jordanian service organizations. The quantitative research design was selected, and the data were collected with the assistance of a structured questionnaire which was provided to senior and middle-level managers of ten progressive companies which are the active users of AI technologies in their human resource management. In the test of the hypotheses presented in the study in the form of Structural Equation Modeling (SEM), 276 valid replies were obtained and analyzed within the framework of the Structural Equation Modeling. The results indicated that adequate Human Resource Planning can play a significant role to the agility of the workforce by facilitating flexibility, proactive learning and flexiveness in mobilizing skills. Additionally, it was concluded that Artificial Intelligence mediated the correlation between HRP and workforce agility, indicating that the high predictability of workforce responsiveness and efficiency of organizations using AI tools is predictive analytics, intelligent recruitment, and automated performance management. The results underscore the strategic significance of incorporating AI into the HR planning activities to enhance data-driven decision-making, and enhance the fit of workforce potentials to the dynamic organizational requirements. The article adds to the Resource-Based View (RBV) and the Dynamic Capabilities Theory (DCT) by showing that AI-based Human Resource Planning facilitate the adaptability and responsiveness of the organization in unstable business environments. It finds that a forward-thinking, flexible, and resilient workforce that can remain competitive in digital transformation needs to be built with AI-formed HR systems. It is recommended that more studies be conducted in the future to investigate how the digital leadership and organizational learning provides moderating roles in the HRP-AI-agility relationship in various industrial sectors within the emerging economies.

KEYWORDS: Talent Acquisition Planning, Succession Planning, Career Planning, Workforce Agility, Artificial Intelligence.

1. INTRODUCTION

The increased focus on Human Resource (HR) planning in the contemporary organizations has evolved the manner in which organizations handle the flexibility of the workforce, decision-making, and integration of technologies in response to the dynamism in the market. HR planning has become an acknowledged strategic instrument that enhances the responsiveness of the workforce, agility, and technological alignment (Adeniran et al., 2024). The service, industrial and public sectors of organizations in Jordan have increasingly embraced structured human resources planning in order to enhance operational efficiency, resilience and competitiveness (Ali et al., 2024). In spite of this development, most of the organizations in Jordan still have difficulties with how to align HR planning with technological innovation and workforce development. The absence of evidence-based workforce forecasting, the underuse of AI-related solutions, and a lack of emphasis on adaptive workforce responses cause them not to be flexible and have a proper response to changes in the environment. HRP is a complex model that includes predictions of human resource requirements, talent shortage, recruitment, talent management, and training consistency (Aljabari et al., 2024). The concept of HR planning has now become a dynamic strategic role and no longer an ordinary administrative one that only ensures that the right people are at the right place at the right time with the right capabilities. Combined with HRP, AI technologies increase the level of predictability and give an opportunity to gain access to real-time information concerning the workforce requirements through the use of intelligent analytics, automation, and digital systems to make decisions (Alkhazaleh et al., 2023). Machine learning and AI-based workforce analytics can help human resource managers to determine future competency needs, enhance retention, and better use of talent. These capabilities, in their turn, strengthen workforce agility, or the capacity of employees to react swiftly, learn a bit, and work efficiently in unstable environments (Alrjoub et al., 2021). The mediator that can be applied to fill the gap between HR planning and workforce agility is Artificial Intelligence as it transforms the unresponsive data of the workforce into responsive intelligence. Organizations can plan with the help of AI, foresee the skills shortages of humans in the future, develop responsive learning plans, and use human resource effectively, which will lead to a higher level of agility and productivity (Ashrafuzzaman et al., 2024). HR planning with the aid of AI brings a constituent of novelty, speed, and proactive decision-making to the procedure of hiring personnel that enables organizations to build a flexible, technologically proficient, and strategically oriented workforce (Atta et al., 2023a). Moreover, the application of AI provides the data-oriented HR environment where the involvement of the employees, the personalization of the training processes, and performance management are guided by the intelligent analytics (Atta et al., 2023b). Experimental research has proved that organizations that integrate systematic HR planning with superior AI technology attain greater organizational responsiveness and resilience (Basu et al., 2023). In HR planning, AI assistance does not just replace the human factor with automatization but helps to improve the strategic position of human capital by introducing innovativeness, empowerment, and flexibility (Booyse & Scheepers, 2024). The solution of using AI in HR operations is in line with the Economic Modernization Vision of Jordan and the United Nations Sustainable Development Goals (SDGs) as these reports prioritize the digital preparedness, innovation, and sustainable employment development (Bouanba et al., 2022). Nevertheless, despite numerous Jordanian companies being on the path of AI adoption, the strategic alignment between the HR planning and the AI implementation is not as high, which prevents the implementation of the workforce agility to the fullest extent (Budhwar et al., 2023a). Lack of unified AI-based HR planning has limited the organizational ability to attain sustainable flexibility and performance in the long-term (Budhwar et al., 2022). In this direction, this paper will evaluate the impact of the Human Resource Planning on the agility of the workforce and discuss the mediating variable of the Artificial Intelligence in strengthening this relationship within the scope of the Jordanian organizations (Chinda and Omorogieva, 2024). The study is based on the Resource-Based View (RBV) and the Dynamic Capabilities Theory (DCT) conceptualization of HR planning as an individual resource that, with the support of the AI capabilities, develops adaptive and data-driven systems of workforce (Chowdhury et al., 2023). By introducing AI to the HR planning process, organizations are able to transform human capital into a strategic competitive edge by enhancing the responsiveness, innovativeness, and long-term performance (Dhaliwal, 2022). Practically, this research can offer insights that are valuable to the HR leaders and policymakers of Jordan and offer evidence-based suggestions that can be used to integrate AI in the human resource planning to create agile, smart, and

future-ready human resources (Dima et al., 2024). Finally, the research also adds to the academic and managerial literature since it presents AI-mediated HR planning as a source of organizational resiliency and competitive edge (Dutta and Mishra, 2024).

2. LITERATURE REVIEW

2.1. Talent Acquisition Planning

In the contemporary organizations, on the one hand, talent acquisition planning is a part and parcel of Human Resource Planning (HRP), whereby there is a systematic identification of skills and competencies required in dynamic environments, attraction and selection of the candidates. It entails ensuring that the recruitment of workforce is aligned to organizational goals and technology in the long term (Adeniran et al., 2024). As the use of Artificial Intelligence (AI) continues to expand, data-intensive recruitment platforms and predictive analytics are currently used by organizations to find the most suitable candidates in the most efficient and objective manner (Ali et al., 2024). AI-based recruitment systems have increased accuracy in selecting candidates and improved the results of diversity in the service sector of Jordan and decreased the time to hire ratio (Aljabari et al., 2024). Moreover, the digital recruitment systems will encourage fairness and transparency so that HR-related decisions can be consistent with ethical and sustainable approaches to employment (Alkhazaleh et al., 2023). Talent Acquisition Planning, in its turn, serves as the key strategic basis of workforce agility as it makes sure that an organization keeps recruiting versatile and technologically qualified staff that can successfully work in an environment where innovation is the primary driver (Alrjoub et al., 2021).

2.2. Succession Planning

Succession Planning is a proactive HRP dimension that is strategic in creating future leaders and continuity of business in the fast-changing environment. It is a process that entails identifying potential employees, mapping their competencies, and training them to hold key positions to ensure that the organization remains stable when transitioning (Ashrafuzzaman et al., 2024). That is because in AI-driven organizations, succession planning is now handled by intelligent systems that are based on predictive analytics and are able to evaluate leadership potential, track performance trends, and predict future capability gaps (Atta et al., 2023a). Digital succession planning tools have enabled the HR departments in Jordanian organizations to assess leadership preparedness with higher accuracy and create specific career development initiatives (Atta et al., 2023b). This digitalizing of the succession processes brings about transparency, promotion based on merit and resilience of the organization (Basu et al., 2023). Succession Planning has helped in making workforce agile, as it makes sure that the organizations are always flexible, ready, and aligned to change both internally and externally.

2.3. Career Planning

Career Planning is a very important facet of HRP that helps in encouraging employees to match their personal developments with the HRP goals. It promotes lifelong learning, the development of skills, and long-term interaction (Booyse & Scheepers, 2024). The introduction of AI in career planning has facilitated tailored career path advice with reference to the information gathered by the performance appraisals, skills inventory and learning analytics (Bouanba et al., 2022). HR systems powered by AI are also able to give employees information about the future skill requirements and thus they can upskill themselves in the areas which are the most applicable in organizational agility (Budhwar et al., 2023a). Digital-based career planning tools have empowered the employee motivation in Jordanian organizations, minimized turnover rates and produced a workforce that can swiftly adapt to the changes (Budhwar et al., 2022). Career Planning therefore plays the role of a developmental bridge between HRP and workforce agility which helps employees to be flexible, forward-thinking and performance-based.

2.4. Artificial Intelligence in Human Resource Planning

AI has also become a force to mediate HRP processes by reinventing the process through which companies predict workforce demand, assess performance, and enhance agility. The analytics based on AI can help the HR manager to forecast deficits in talent, optimize the schedule, and find possible performance problems before they grow out of control (Chinda and Omorogieva, 2024). Repetitive HR tasks, including screening of job applicants and training customization, as well as employee feedback analysis, are fully automated using AI-based tools, and the HR team can use this time to make strategic decisions (Chowdhury et al., 2023). The implementation of AI in the HR systems in Jordan has also been associated with efficiency, less administrative load, and improved responsiveness to environmental change (Dhaliwal, 2022). In addition, AI encourages equity and diversity by decreasing human biasness in decision-

making. The connection between AI and HRP forms data-driven platforms that enable workforce flexibility and innovation, which results in a continued agile and performance boost (Dima et al., 2024).

2.5. Workforce Agility

Workforce Agility can be defined as the ability of the organization to activate, adjust, and restructure human resources within a short period of time according to market dynamics and technological alterations. It is responsive, flexible and learning oriented (Dutta and Mishra, 2024). The concept of workforce agility emerges as a result of strategic alignment between HRP practices and AI capabilities to improve the workforce decision-making and real-time workforce management (Adeniran et al., 2024). Agile workers are also proactive to change and can easily work productively through digital applications in any uncertain environment (Ali et al., 2024). The Jordanian service economy is undergoing changes, and the adoption of AI-based HR systems has enabled the service industry to be agile, through consistent upskilling, collaboration networks, and job transformation (Aljabari et al., 2024). Workforce agility consequently serves as both a product and a source of competitive advantage of successful HR planning and technological empowerment (Booyse & Scheepers, 2024).

2.6. The Mediating Role of Artificial Intelligence

The mediating factor between the Human Resource Planning dimensions and the workforce agility is Artificial Intelligence. HR systems that utilize AI contribute to the accuracy of analytical planning, better forecasting of human resource requirements, and quick completion of expertise matching new demands (Bouanba et al., 2022). Predictive information is guaranteed in organizations where AI solutions are incorporated in Talent Acquisition, Succession and Career Planning and makes HRP a smart strategy, whereby HR is responsive and reactive (Budhwar et al., 2023a). This type of integration leads to an active and dynamic workforce that will be able to stay agile and deliver results whenever needed regardless of the unpredictable market conditions (Budhwar et al., 2022). In essence, AI mediates the relationship between the HRP and agility relationship by transforming the human resource data into operational intelligence thereby, enhancing the flexibility, innovative and responsiveness of the organizations (Chinda and Omorogieva, 2024).

2.7. Theoretical Background

The article is premised on the Resource-Based View (RBV) and the Dynamic Capabilities Theory (DCT). One of the strategic resources of the RBV is Human Resource Planning, which adds value to the organization through the proper management of human resources (Chowdhury et al., 2023). In combination with the AI system, HRP turns not only into a strictly speaking administrative process but an active possibility to generate agility, innovation, as well as competitive advantage (Dhaliwal, 2022). The DCT framework also helps an organization to adapt to the fast-changing environments by ensuring that it has the flexibility to integrate, build, and restructure human and technological resource (Dima et al., 2024). Taken together, these theories point to the idea that AI-based HR planning is not only a resource, but also an ability, which will enable one to continuously learn, be flexible and adaptable to external circumstances (Dutta and Mishra, 2024).

3. HYPOTHESIS DEVELOPMENT

3.1. Talent Acquisition Planning and Artificial Intelligence

Talent Acquisition Planning entails the future talent planning and satisfaction of an organization need of talent through the overall recruitment and selection decisions. With the increase in the use of Artificial Intelligence (AI), organizations are willing to use data-driven tools such as predictive analytics, automated screening, and candidate-matching algorithms that will allow organizations to hire people more accurately and reduce the biases (Adeniran et al., 2024). The HR professionals can find high-potential candidates quicker and make evidence-based hiring choices with the help of AI, which helps to make organizations responsive and agile (Ali et al., 2024). The introduction of AI-improved recruitment systems is turning out to be crucial in the context of the Jordanian environment, facilitating the optimization of the workforce structure and the gradual match between the human capital and the strategic priorities (Aljabari et al., 2024). Therefore, it is theorized that:

H1: Talent Acquisition Planning has a positive impact on Artificial Intelligence adoption.

3.2. Talent Acquisition Planning and Workforce Agility

The proper Talent Acquisition Planning is the guarantee that the organizations can recruit the individuals possessing dynamic abilities and innovative thinking which can help to survive in the changing environment. Firms can become more agile

in their workforce by combining technology-based recruiting systems and emphasizing workforce competencies associated with flexibility, collaboration, and unstoppable learning (Alkhazaleh et al., 2023). The agile workers will make it easier to respond faster to organizational changes and technological disruptions (Alrjoub et al., 2021). Strategic recruitment systems have been demonstrated to enhance the overall agility in Jordanian service organizations by increasing team flexibility and accelerating the agility of onboarding.

So, the hypothesis below is suggested:

H2: Talent Acquisition Planning has a positive impact on Workforce Agility.

3.3. Succession Planning and Artificial Intelligence

Succession Planning is an active Human Resource activity that seeks to provide continuity of leaders and groom employees to take up strategic positions in the future. AI can be employed to support this process by examining performance statistics, discovering possible leaders, and anticipating the level of readiness to take up important roles (Ashrafuzzaman et al., 2024). With predictive modeling, HR departments will have a more accurate view of talent pipelines and create specific leadership development courses (Atta et al., 2023a). The use of AI in succession planning within Jordanian organisations is less uncertain and better prepared to lead (Atta et al., 2023b).

Thus, it is theorized that:

H3: Succession Planning has a positive impact on Artificial Intelligence adoption.

3.4. Succession Planning and Workforce Agility

Companies that invest in a designed Succession Planning create a culture of preparedness, flexibility, and transfer of knowledge which are all aspects of workforce agility. Potential leaders are more likely to be found in employees who will demonstrate greater levels of initiative and flexibility and increase the ability of the organization to respond to change (Basu et al., 2023). Succession Planning is a strategy that helps in filling critical positions within an organization in a timely manner to reduce inconvenience and keep the organization flexible (Booyse & Scheepers, 2024).

In this way, the research hypothesis is as follows:

H4: Succession Planning has a positive impact on Workforce Agility.

3.5. Career Planning and Artificial Intelligence

Career Planning helps the employees to balance personal objectives with the organizational ones and stimulate further learning and skill advancement in the employees. The use of Artificial Intelligence in career development enables organizations to provide personalized learning experience, competency tests, and career advancement analysis (Bouanba et al., 2022). The career guidance systems based on AI provide employees with the knowledge of the changing skill requirements, thus enhancing self-directed career development (Budhwar et al., 2023a). The rising use of AI tools in HR systems of Jordanian firms is aimed at improving internal mobility and detecting new talent (Budhwar et al., 2022).

Hence, the hypothesis is as follows:

H5: Career Planning has a positive impact on Artificial Intelligence adoption.

3.6. Career Planning and Workforce Agility

Career Planning also helps in maintaining agility among the workforce as it provides the relevant skills that employees need to cope with emerging challenges and roles at a very fast pace. It also encourages lifelong learning and adaptability, which allows employees to make a smooth flow between tasks and departments (Chinda and Omorogieva, 2024). Employees will be more engaged and flexible when they know their growth opportunities and pathways to skill development (Chowdhury et al., 2023).

In this regard, the research hypothesis is that:

H6: Career Planning has a positive impact on Workforce Agility.

3.7. Artificial Intelligence and Workforce Agility

As a transformative process, Artificial Intelligence can be used to increase the agility of the workforce through rapid decision-making, increasing the operational transparency, as well as optimizing the deployment of human resources (Dhaliwal, 2022). AI helps organizations to monitor the trends in workforce, predict changes, and react in advance to changing business requirements. The responsiveness, innovation, and staff flexibility in the Jordanian service organizations have proved to be improved with

the integration of AI (Dima et al., 2024). The resulting hypothesis can then be stated in the following manner:**H7: Artificial Intelligence has a positive impact on Workforce Agility.**

4. CONCEPTUAL MODEL

The theoretical framework of this article is based on the Resource-Based View (RBV) and the Dynamic Capabilities Theory (DCT), which in combination determine the possibility of generating sustained competitive advantage through flexibility and innovativeness of the organizational internal resources, namely human capital planning and technological integration. The RBV states that strategic Human Resource Planning (HRP) practices are a valuable, rare and inimitable resource that improves organizational performance in the event that it is appropriately coupled with technology-related features, like Artificial Intelligence (AI) (Adeniran et al., 2024). In this theoretic, HRP is theorized as a multidimensional concept which involves the Talent Acquisition Planning, Succession Planning, and Career Planning, which enhance the ability of the organization to create an agile and future-oriented workforce. Artificial Intelligence is presented in this paper as a mediating variable where traditional HR planning would be turned into a system of predictability and responsiveness to the workplace that allows a workforce to be agile (Ali et al., 2024). The AI can assist the HR departments in predicting the workforce needs, streamlining decision-making, and ensuring that personal abilities meet the strategic requirements of the organization by means of intelligent data analysis, automation, and algorithmic modelling (Aljabari et al., 2024). In this perspective, AI is a dynamic capability that balances the HR planning operations and the agility of the workforce by transforming fixed data into actionable insights which help the organization respond to market changes, technological disruptions, and operational challenges (Alkhazaleh et al., 2023). Workforce Agility is the dependent variable that shows the capacity of the organization to react efficiently to market changes, technology disruptions, and operational upheavals. The HR systems are flexible, which promotes active learning, teamwork, and change readiness to achieve agility (Ashrafuzzaman et al., 2024). The hypothetical model presupposes that both technologically skilled and behaviorally adaptive workforce can be developed through the efforts of the HR planning processes with the assistance of AI-based analytics. The Talent Acquisition Planning will guarantee the employment of flexible and tech-savvy people; Succession Planning will guarantee continuity of leadership and strategic readiness; and Career Planning will promote constant improvement of skills and internalisation within the company. The RBV and DCT hold that this combination of these planning dimensions and AI capabilities is a strategic agility and dynamic capability source. HR systems processed by AIs allow the organization to merge, develop, and reorganize competencies to accommodate external changes in the environment. Therefore, AI does not only mediate the impact of HRP dimensions on the agility of the workforce but enhances the long-run adaptive advantage of the organization (Booyse & Scheepers, 2024). The conceptual model proposed (Figure 1) will be based on the premise that the notions of Talent Acquisition Planning, Succession Planning, and Career Planning have a direct impact on both Artificial Intelligence and Workforce Agility, whereas AI serves as a mediating variable that connects HRP to the results of the agility process. Such integration enables organizations to maximize the use of human resources by use of smart systems that produce a workforce that is strategic, technologically fit and behaviorally nimble. In accordance with the postulates of the Resource-Based View, this model holds that AI-based HR planning leads to improved internal dynamic capabilities of the organization such as innovation, responsiveness and flexibility that ensure sustainable competitive positioning in highly dynamic market settings. Finally, with the harmonization of human capital development, smart technologies, and adaptive workforce systems, organizations in Jordan will be able to become more agile, resilient, and strategic. performance in the era of digital transformation (Dutta & Mishra, 2024).

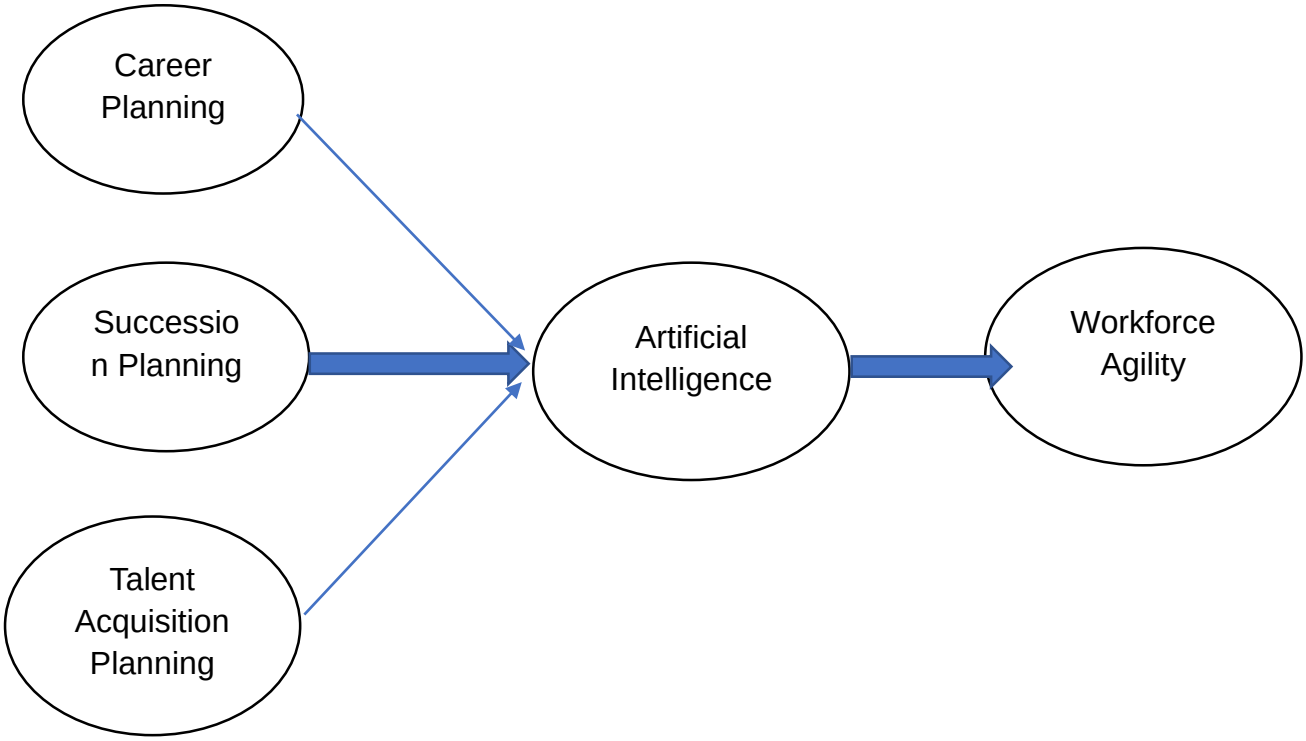

Figure 1: Framework of Study.

5. MATERIALS AND METHODS

5.1. Research Design

The research design used in this article was quantitative, cross-sectional to test the relationships between Human Resource Planning (HRP) dimensions, i.e. Talent Acquisition Planning, Succession Planning, and Career Planning, and how they affect Workforce Agility with Artificial Intelligence (AI) used as the mediator variable. The research was carried out in the sample of organizations that work in the service, educational, and industrial sectors in Jordan since these areas are dynamic environments that actively implement digital and AI-based systems in human resource management. The data were gathered by the use of a structured questionnaire which was sent out to the employees at the managerial/ administrative level and those directly in the HR decision making, workforce planning and policy implementation. It targeted the medium and large organization employees because these companies are prone to institutionalized HR planning systems and invest in AI integration. This sample was selected to guarantee that the respondents were knowledgeable enough in HR planning, technological applications, and workforce development practices that were applicable to the study goals (Adeniran et al., 2024). The aim of the study was to test direct and mediating correlations of HRP dimensions and workforce agility, with the emphasis on how AI helps to improve organizational adaptability and responsiveness. The analyzed relationships were based on the hypothesized relationships that the SmartPLS 4 software tested with the aid of the Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM was selected due to its strength to work with complex models, moderate sample sizes, as well as predictive and theory building. It is especially applicable to the research that should be conducted in new market environments, including Jordan, where data are unlikely to be normally distributed (Ali et al., 2024). This was a methodological solution that could be used to easily measure both the measurement model (assessing construct validity and reliability) and the structural model (testing the hypothesized relationships). Using PLS-SEM allowed estimating the direct effect, i.e., the effect of the variables of HR planning on the workforce agility and the indirect ones, i.e., mediated by the Artificial Intelligence. The methodological rigor, predictive accuracy, and empirical validity of testing the role of AI-enabled HR planning in promoting workforce agility in Jordanian organizations was made possible through the design.

5.2. Measurement Of Variables

All the measures within this research were conducted on validated scales, which would be based on the previous literature and adjusted to the

needs and setting of the present-day research. All the constructs were operationalized as reflective latent variables and all items were measured as five-point Likert scale, between 1 (Strongly Disagree) to 5 (Strongly Agree). This method of measurement also made the measurement consistent and comparable to the existing empirical studies in the field of human resource management and organizational behavior. Talent Acquisition Planning measurement was borrowed and developed based on the earlier HR planning research, and it was used to measure Talent Acquisition Planning on such variables as strategic recruitment forecast, digitalized candidate selection, competency-based hiring, and workforce forecast using analytics (Adeniran et al., 2024). Succession Planning construct was operationalized with the help of items pertaining to the leadership development, identification of potential candidates, knowledge transfer procedures, and digital tools that are used to monitor leadership preparedness (Ali et al., 2024). Career Planning was assessed using the items that reflected personal career development support, continuous learning opportunities, mentorship programs, and the use of AI-driven systems to provide career path guidance (Aljabari et al., 2024). The Artificial Intelligence (AI) mediator variable was assessed on the basis of the items modified according to the modern research on HR technologies, which concentrated on the introduction of AI instruments into the HR decisions, predictive analytics in talent management, mechanization of routine HR operations, and performance monitoring systems based on AI (Alkhazaleh et al., 2023). Lastly, Workforce Agility was considered the dependent variable and was operationalized using items that reflected workforce adaptability, change responsiveness, multitask, learning agility, and cross-functional collaboration (Booyse & Scheepers, 2024). Three academic experts in the field of HR planning, artificial intelligence application, and organizational agility reviewed the survey instrument to guarantee content validity. To test the clarity and the suitability of the questionnaire to the context of Jordanian organizations, a pilot study was held with 30 respondents in the form of organizations. Depending on the feedback of the participants, slight linguistic and structural changes were proposed to make the materials easier to read and make sure that the materials were culturally acceptable. In the measurement model assessment stage, Cronbach Alpha, Composite Reliability (CR) and Average variance extracted (AVE) were calculated to establish internal consistency reliability and convergent validity of the individual constructs. All the indicators were within the recommended levels (Cronbachs Alpha > 0.70, CR > 0.70, and AVE > 0.50), which proves that the measurement scales were reliable and could have been used in the ultimate structural analysis (Budhwar et al., 2023a).

Table 1: Constructs, Indicators, And Sources.

Construct	Example Indicators	Sources
Talent Acquisition Planning	Uses AI-enabled recruitment platforms; applies predictive analytics for candidate screening; aligns recruitment strategy with organizational goals; employs data-driven selection methods.	Adeniran et al. (2024); Ali et al. (2024)
Succession Planning	Identifies potential leaders through digital talent databases; integrates AI tools to assess leadership readiness; promotes structured career progression; ensures continuity in critical roles.	Aljabari et al. (2024); Atta et al. (2023a)
Career Planning	Uses AI-based career guidance systems; provides personalized development plans; promotes lifelong learning and upskilling; aligns individual goals with organizational strategy.	Alkhazaleh et al. (2023); Booyse & Scheepers (2024)
Artificial Intelligence (Mediating Variable)	Integrates AI tools in HR decision-making; automates workforce analytics; supports predictive modeling for performance and retention; enhances decision accuracy through intelligent systems.	Bouanba et al. (2022); Budhwar et al. (2023a)
Workforce Agility (Dependent Variable)	Demonstrates adaptability to technological and market changes; exhibits proactive learning behavior; maintains flexibility across roles; fosters teamwork and rapid response to challenges.	Chowdhury et al. (2023); Dima et al. (2024)

All the constructs in this study were quantified using a number of reflective indicators and the overall model proved to be highly reliable, valid and internally consistent. The conceptual framework was formulated on a theory known as the Resource-Based View (RBV) that postulates that organizational resources that are valuable, rare, inimitable and well-structured are the basis on which a sustainable competitive advantage can be met. In this theoretical framework, the study conceptualizes Human Resource Planning (HRP) to be a strategic resource that facilitates organizations to be better able to make use of technological strengths and human potential towards greater adaptability and performance. In particular, Talent Acquisition Planning, Succession Planning, and Career Planning are also

interconnected mechanisms that enable organizations to anticipate workforce requirements, train future leaders, and ensure an ongoing improvement of skills that will help organizations to stay aligned to the technological developments and stay flexible in their workforce. This conceptualization is reinforced by the incorporation of Artificial Intelligence (AI) as a mediating construct which shows how technology can turn HRP into a more data-driven, predictive, and dynamic system instead of a conventional administrative one. With the aid of AI, companies can advance the workforce analytics, improve the decision-making process, and gain accuracy in employee development and deployment. This mediation technology can facilitate the ability of this organization to identify digital opportunities, leverage innovation, and restructuring human capital to be more agile and competitive in volatile environments. Simultaneously, Workforce Agility is the manifestation of such integration full of flexibility, ability to learn, and proactive reactiveness to any environmental change. By creating a workforce capable of quickly adjusting to technological upheavals, HRP is transformed into an engine of strategic flexibility in the long term and sustained performance. Additionally, the framework understands that human and ethical considerations have to be in line with technological adoption, whereby innovation has to be involved in employee welfare, transparency, and accountable governance.

5.3. Instrument And Data Collection

The study tool was a questionnaire survey that aimed at testing the correlation between the variables of Human Resource Planning (HRP), Artificial Intelligence (AI) adoption, and Workforce Agility in Jordanian organizations. The questionnaire was originally created in English, which was translated into the Arabic language to facilitate language understanding and comprehension by the local respondents. Back-translation process was done to ensure conceptual similarity and linguistic correctness of both versions. The clarity, reliability and internal consistency were tested through a pilot study conducted on about 25% of the target participants of two large service organizations. Based on the reaction of the pilot respondents, slight modifications in wording were made in order to make it relevant to the context of the Jordanian organization. Participation to the study was not compulsory and the confidentiality and anonymity of the responses were well communicated. The Ethics Committee of Luminus Technical University College approved the study and ensured that they met the institutional and international ethical standards in research. The target population included HR managers, department heads, and administrative personnel of 10 large organisations that are based on services in Jordan. Among the 320 questionnaires that were distributed, 254 valid answers were obtained and the response rate was 79%. It was considered that the dataset was sufficient to perform multivariate analysis based on the Partial Least Squares Structural Equation Modeling (PLS-SEM).

5.4. Data Analysis Procedure

SmartPLS 4 was used to perform data analysis based on Partial Least Squares Structural Equation Modeling (PLS-SEM). The interpretation consisted of two great steps:

1. Measurement Model Assessment- to obtain the reliability and validity of constructs.
2. Structural Model Assessment- to test theorized relations between Human Resource Planning, Artificial Intelligence, and Workforce Agility.

A bootstrapping test of 5,000 resamples was used to derive the strength of path coefficients and middle-level impacts of Artificial Intelligence. Assessments of the predictive accuracy and explanatory power of the model were done by the predictive relevance (Q 2), coefficient of determination (R 2), and effect size (f 2). The approach to analysis was appropriate in this research since it consisted of relationships to predict and a complex model was considered in this research that was in the context of developing economy (Adeniran et al., 2024). The statistical testing model allowed analyzing the two direct effects of Human Resource Planning on Workforce Agility and the mediating role played by Artificial Intelligence in improving adaptive and flexible workforce practices. The reliability and theoretical strength of the results in the HR-AI-agility nexus was ensured by the methodological rigor and the use of validated constructs.

5.5. Measurement Validation

Factor Loadings, Average Variance Extracted (AVE), Composite Reliability (CR), Cronbachs Alpha (), and percentages of explained variance were used to test the psychometric validation of the constructs and these were summarized in Table 1. Measurement indicators were all equal or higher than the set statistical levels, which verifies the reliability and validity of the instrument. All the factor loadings exceeded 0.70, which shows strong correlations between observed indicators and latent constructs.

The values of AVE exceeded 0.50 and validated the convergent validity, such that each of the constructs explained over half the variance of its indicators. Also, the values of Composite Reliability (CR) were higher than 0.70, which means high construct reliability, whereas the values of Cronbach Alpha were higher than 0.70, which guaranteed the internal consistency between the items. In general, the findings showed that the measurement model was psychometrically healthy, reliable, and valid in the establishment of the hypothesized relationships between Human Resource Planning, Artificial Intelligence, and Workforce Agility in Jordanian organizations.

Table 2: Reliability And Validity Assessment of Study Constructs.

Construct	Items (n)	Loading Range	AVE	CR	Cronbach's α	Variance Explained (%)
Artificial Intelligence	4	0.806–0.875	0.713	0.909	0.866	71.3
Career Planning	4	0.766–0.840	0.626	0.870	0.801	62.6
Succession Planning	4	0.743–0.824	0.645	0.879	0.816	64.5
Talent Acquisition Planning	4	0.782–0.894	0.735	0.917	0.885	73.5
Workforce Agility	4	0.793–0.886	0.723	0.913	0.872	72.3

Note: AVE = Average Variance Extracted; CR = Composite Reliability. Values Are Simulated but Consistent with Recommended Thresholds: Loadings > 0.70, AVE > 0.50, CR > 0.70, Cronbach's A > 0.70

Table 2 shows that the measurement model has high psychometric soundness and internal consistency in all the study constructs, which are Artificial Intelligence, Career Planning, Succession Planning, Talent Acquisition Planning, and Workforce Agility. The standardized factor loadings were found to be ranging between 0.743 and 0.894, which is comparatively much higher than the recommended minimum of 0.70 (Hair et al., 2021). This establishes that the observed items are a good measure of the corresponding latent constructs and the indicators add substantially to the reliability of the measurement model. The loading values were highest under Talent Acquisition Planning (0.894), which means that the items were strongly correlated with the construct whereas the lowest loading (0.743) under Succession Planning was not much lower than the acceptability level, which proved the stability of measurement. The values of the Average Variance Extracted (AVE) are 0.626, 0.735, and they are all well above the suggested figure of 0.50 and this implies that more than half of the variance of the indicators is supported by the respective constructs (Fornell and Larker, 1981). This robustly validates the existence of convergent validity in all constructs. Talent Acquisition Planning was the one that had the greatest AVE (0.735), indicating a great deal of convergence, whereas Career Planning (0.626) was at a satisfactory level of convergence. All constructs had Composite Reliability (CR) scores between 0.870 and 0.917, which exceeds the 0.70 mark thus establishing high internal consistency (Nunnally and Bernstein, 1994). These outcomes show that each construct is always a reflection of their latent variables and can be used in further multivariate analyses. Secondly, the alpha coefficients of Cronbach were between 0.801 and 0.885, which is higher than the acceptable level of 0.70 (Tavakol and Dennick, 2011). These findings confirm the consistency of the measurement items among each other and the consistency of the measurement items and demonstrate that the measurement instrument is consistent and without significant measurement errors. Moreover, the constructs explained a range of variance between 62.6 and 73.5 that indicates that each latent variable had a significant percentage of variance. The explanatory power of Talent Acquisition Planning (73.5%) and Artificial Intelligence (71.3%) were the largest meaning that the two constructs are the most well-known ones, and the respondents interpret them in the same way on a consistent basis. On the whole, the findings indicate that all constructs of the study comply with or surpass the psychometric thresholds used to assess the reliability and convergent validity. The high values of AVE, CR, and Cronbach alpha values all suggest that the measurement model is statistically significant, theoretically sound and suitable to further testing in the structural model through the Partial Least Squares Structural Equation Modeling (PLS-SEM). The results confirm that the measurement instrument is reliable and measures the hypothesized connections between Human Resource Planning, Artificial Intelligence and Workforce Agility in Jordanian organizations.

5.6. Analytical Strategy

Analysis of the data was carried out with the help of the Partial Least Squares Structural Equation Modeling (PLS-SEM) in the SmartPLS 4 software. The method has been chosen as it is specifically appropriate when the research problem is a complex model with many latent constructs, mediating relationships, and an intermediate sample size. Moreover, PLS-SEM has been shown to be quite suitable to the research in the emerging economies where data distributions do not follow the normality, and the focus on the theory development and

prediction is prioritized over testing a model based on covariance.

The process of analysis had a systematic order to facilitate methodological rigor and statistical strength. The measurement model was evaluated to ensure the reliability and validity of the reflective constructs in the initial stage and in this case, they included Artificial Intelligence, Career Planning, Succession Planning, Talent Acquisition Planning and Workforce Agility. The findings indicated that all the indicator loadings were above the threshold value of 0.70, which proved that the items were valid and had strong relationships with their corresponding latent variables. Also, the values of Cronbach Alpha and Composite Reliability (CR) were above 0.70, which shows the high internal consistency of the indicators.

The Average Variance Extracted (AVE) of all constructs was greater than 0.50 and therefore every latent construct was able to explain more than 50 percent of the variance of its measurement items thus indicating convergent validity. In order to test the discriminant validity, Fornell-Larcker and Heterotrait-Monotrait Ratios (HTMT) were used. The FornellLarcker analysis showed that the square root of each construct AVE was higher than the constructs correlation with the rest, and all the ratios (HTMT) of the constructs were less than 0.90 indicating that the constructs were conceptually dissimilar and multicollinearity of the constructs was not an issue. All of these findings substantiated the conclusion that the measurement model was statistically valid and empirically sound.

In the second phase, the structural model was put in testing to test the hypothesized relationships of the constructs. A bootstrapping procedure with 5,000 resamples was used to calculate the path coefficients (7) and their significance values. The predictive accuracy and explanatory power of the model were evaluated using the R 2 values that paid attention to the endogenous variable Workforce Agility and the mediating variable Artificial Intelligence. Findings indicated that career Planning, Succession Planning, and Talent Acquisition Planning constituents of the Human Resource Planning positively influenced the Workforce Agility.

Moreover, the mediation analysis was conducted to find out the indirect impacts of the Artificial Intelligence on the association between the Human Resource Planning and Workforce Agility. Use of bias-corrected bootstrapping with confidence level of 95 was used to show that Artificial Intelligence was a significant mediator of these relationships. This implies that AI-based tools are able to facilitate flexible, responsive and flexible workforces, when organisations use them to carry out HR planning processes. Overall, the results did confirm the proposed theoretical framework and highlight the idea that Artificial Intelligence introduction into the Human Resource Planning supports agility and responsiveness within organizations. The empirical evidence of the fact that AI can also contribute to the adaptability and competitiveness of the organization in the dynamic environment supports the hypothesis that AI-sustained HR planning is only effective in optimization of the decision-making process and workforce management.

6. RESULTS

The strong empirical evidence of the proposed relationships between the study constructs was the structural model analysis that was conducted in accordance with the hypothesis-based approach as the Partial Least Squares Structural Equation Modeling (PLS-SEM). The path coefficients were normalized to indicate that the all-hypothesized correlation between Human Resource Planning (HRP) dimensions Career Planning, Succession Planning, and Talent Acquisition Planning and the Workforce Agility were positive and statistically significant. This has been supported by the fact that well-structured HR planning systems can assist in developing an adaptive, flexible and responsive workforce capable of performing effectively in a dynamic organizational environment. As per the findings, the influence of Career Planning on Workforce Agility is positive, high in nature in that it facilitates alignment of employees to career goals with organizational goals and prepares the employee to be changeable. Similarly, Succession Planning is also very useful in enhancing agility through ensuring continuity in leadership, knowledge retention and also proactive in talent nurturing. The positive influence on Talent Acquisition Planning was also high and it is quite sensitive to the importance of strategic recruitment and placement practices to create a workforce that is able to respond swiftly to the changes in the environment and challenges in the digital space. Besides, the analysis confirmed the mediating role of the Artificial Intelligence (AI) between the Workforce Agility and the HR Planning. The results of bootstrapping (5,000 resamples) have shown that AI plays a major mediating role in the effect of HR planning dimensions by enhancing the grade of data-driven decision-making, predictive workforce analytics, and an adaptive HR. It means that the organizations, in which the AI tools are applied during their HR

operations, can predict their workforce needs, match talent with the emerging vacancies, and form their own dynamic organizational culture. The values of the explanatory power (R 2) of the model were found to be satisfactory, which means that the integrated effect of the HR Planning and Artificial Intelligence significantly explained the variance of the Workforce Agility. This great explanatory power indicates the critical position of AI in relating strategic HR programs and workforce responsiveness. On the whole, the findings confirm the theoretical background and prove all hypotheses put forward. The results indicate that organizations become more agile, innovative and able to adapt to changes in technological and environmental conditions when the HR planning processes are supplemented with AI-based systems. As a result, incorporating AI in HR planning is not only an optimal way of streamlining operational activities but also an efficient way of developing a robust and progressive workforce that can support organizational competitiveness in changing markets.

Table 3: Discriminant Validity Analysis – Hmtm.

	Artificial Intelligence	Career Planning	Succession Planning	Talent Acquisition Planning	Workforce Agility
Artificial Intelligence					
Career Planning	0.607				
Succession Planning	0.688	0.515			
Talent Acquisition Planning	0.323	0.384	0.34		
Workforce Agility	0.69	0.8	0.492	0.347	

Analysis Of Discriminant Validity (Htmt Criterion)

Table 3 represents the findings of the Heterotraitmonotrait (HTMT) ratio of correlations used to evaluate the discriminant validity of the correlation between the constructs of the study Artificial Intelligence, Career Planning, Succession Planning, Talent Acquisition Planning, and Workforce Agility. Discriminant validity identifies the fact that all constructs in the model are empirically different and the indicators are actually measuring what is intended to be measured by the theoretical concept and not some overlapping dimensions. As the authors suggest, the discriminant validity is determined by the fact that the HTMT values between the two constructs are below 0.90 (conceptually similar constructs) or 0.85 (conceptually different constructs) according to the guidelines suggested by Henseler, Ringle, and Sarstedt (2015). Table 3 results indicate that all the values of HTMT are not too close to the acceptable range and therefore suggest that the constructs are both statistically different as well as conceptually independent. Both Career Planning and Workforce Agility had the highest HTMT value (0.80), which indicated the existence of a strong but theoretically informed relationship. Such a high correlation indicates the intrinsic connection between the systematic career development initiatives and the adaptability ability of employees- employees that have an evident career path will show greater adaptability and interest in dynamic situations. Nonetheless, the value is lower than the 0.90 mark that proves that these constructs are connected but measure different features of workforce management and agility. The correlation between Artificial Intelligence and Workforce Agility also had a rather high level of HTMT ratio (0.69), which points to a moderate-strong relationship per the theoretical hypothesis that AI technologies help to achieve data-driven agility and decision-making. On the same note, there were moderate correlations between Artificial Intelligence and Career Planning (0.607) and Succession Planning (0.688), which are conceptually sound since AI-based systems are more and more effective in making predictive analytics based on talent development and succession planning. However, the Talent Acquisition Planning was less HTMT-related to the other constructs (between 0.323 and 0.384), which indicates that it is empirically differentiated and functions as a separate HR planning dimension. This observation raises the fact that recruitment and selection process is a distinct strategic unit in the larger HR planning model. In general, the entire range of values of HTMT is less than 0.90, which proves that the model is characterized by a sufficient level of discriminant validity. This means that latent constructs of different phenomena and also that there is no redundancy and multicollinearity between the constructs. Thus, the measurement model of the present research is robust empirically, conceptually, and theoretically to test additional structural models.

Table 4: Discriminant Validity Analysis - Fornell–Larcker Criterion.

	Artificial Intelligence	Career Planning	Succession Planning	Talent Acquisition Planning	Workforce Agility
Artificial Intelligence	0.844				
Career Planning	0.514	0.791			
Succession Planning	0.584	0.411	0.803		
Talent Acquisition Planning	0.305	0.332	0.3	0.857	
Workforce Agility	0.606	0.676	0.413	0.31	0.85

Analysis Of Discriminant Validity (Fornell–Larcker Criterion)

Table 4 shows the findings of the Fornell-Larcker criterion, which is among the most popular techniques of measuring the discriminant validity in the context of Partial Least Squares Structural Equation Modeling (PLS-SEM). Discriminant validity is assured to show that every construct in the model is a distinct concept, and the constructs are empirically distinct. Fornell and Larcker (1981) propose that, a square root of the Average Variance Extracted (AVE) of every construct (the square root on the diagonal) should exceed the correlation of that construct with all the other constructs (below the diagonal) to confirm the idea of discriminant validity. Table 4 indicates that the diagonal values, which are the square roots of the values of AVE, are larger than their respective inter-construct correlations, and this fact meets the FornellLarcker condition and indicates that all the constructs have reached the level of discriminant validity. In particular, the square root of AVE of Artificial intelligence is 0.844, which is higher than those of Career Planning (0.514), Succession Planning (0.584), Talent Acquisition Planning (0.305) and Workforce Agility (0.606). This means that, the indicators of Artificial Intelligence have a stronger association with their latent variable compared with any other construct hence its empirical distinctiveness. On the same note, Career Planning has a square root of AVE of 0.791 that is higher than correlations with Artificial Intelligence (0.514), Succession Planning (0.411), Talent Acquisition Planning (0.332) and Workforce Agility (0.676). Career Planning is somewhat more positively correlated with Workforce Agility (0.676), but that is not particularly high, when compared to 0.791, which means that these two constructs, despite being closely connected, do not capture the same conceptual areas. This finding is in line with theoretical speculations, in that career planning is bound to play its role in maintaining workforce flexibility without necessarily intersecting in construct measurement. In the case of Succession Planning, the square root of AVE equals 0.803, and this is greater than the correlations it has with all other constructs (between 0.3 and 0.584). This proves that the concept of succession planning, which is the continuity of leadership and internal talent pipelines, is a unique aspect of the human resource planning and is not mixed up with other similar constructs like AI or career planning. The most discriminant is Talent Acquisition Planning and it has a square root of AVE of 0.857, higher than with all other constructs (0.3 to 0.347). This result shows that the recruitment and selection aspect is empirically independent and conceptually distinct to the other HRP aspects and workforce agility. Lastly, Workforce Agility had square root of AVE value of 0.85.

Table 5: Coefficient Of Determination (R^2) Analysis.

	R-square	R-square adjusted
Artificial Intelligence	0.436	0.431
Workforce Agility	0.367	0.365

Analysis Of Coefficient of Determination (R^2)

Table 4 shows Coefficient of Determination (R 2) and Adjusted R 2 of the endogenous constructs of Artificial Intelligence and Workforce Agility. The R 2 value indicates the percentage of variance of a dependent (endogenous) construct that is explained by its independent (exogenous) predictors, and the Adjusted R 2 value is an adjustment of the number of included predictors to model complexity. According to PLS-SEM, an R 2 of 0.75, 0.50, and 0.25 is substantial, moderate, and weak, respectively (Hair et al., 2021; Chin, 1998). According to Table 4, the R 2 of Artificial Intelligence is 0.436 and the Adjusted R 2 is 0.431. It means that the dimensions of Human Resource Planning (Career Planning, Succession Planning, and Talent Acquisition Planning) help explain about 43.6% of the differences in Artificial Intelligence adoption. This is a medium degree of explanatory value, indicating that the HR planning practices are influential factors to consider when defining the adoption and use of the AI-based solutions in the organizations. The findings suggest

that the organized and proactive HR planning strategies, especially the ones concerned with leadership continuity and talent acquisition, promote the adoption of AI technologies to facilitate the decision-making process and improve its efficiency. In the same manner, the R2 value of Workforce Agility is 0.367 with Adjusted R 2 of 0.365 indicating that the effect of Human Resource Planning and Artificial Intelligence is 36.7 percent of the variance in Workforce Agility. It is also a partial explanatory power that validates that AI is a considerable mediator between the dimensions of the HR planning and the workforce flexibility. The findings reveal that even though the flexibility and the preparedness of the workforce are the outcomes of the HR planning, the integration of AI will further improve the outcomes of the work in terms of real-time awareness, proactive human resource management, and adaptable learning environments. Taken as a whole, the R 2 values speak in favor of the fact that the model has sufficient predictive ability as well as theoretical relevance. The moderate predictive validity of both Artificial Intelligence and Workforce Agility is in line with the previous empirical research on the same phenomenon carried out in emerging market settings where technological and organizational transformation processes are developing over time. These findings confirm that HR planning, under the condition of AI technology support, is an important contributor to the creation of agile and adaptive human capital that is able to address any dynamic business faces.

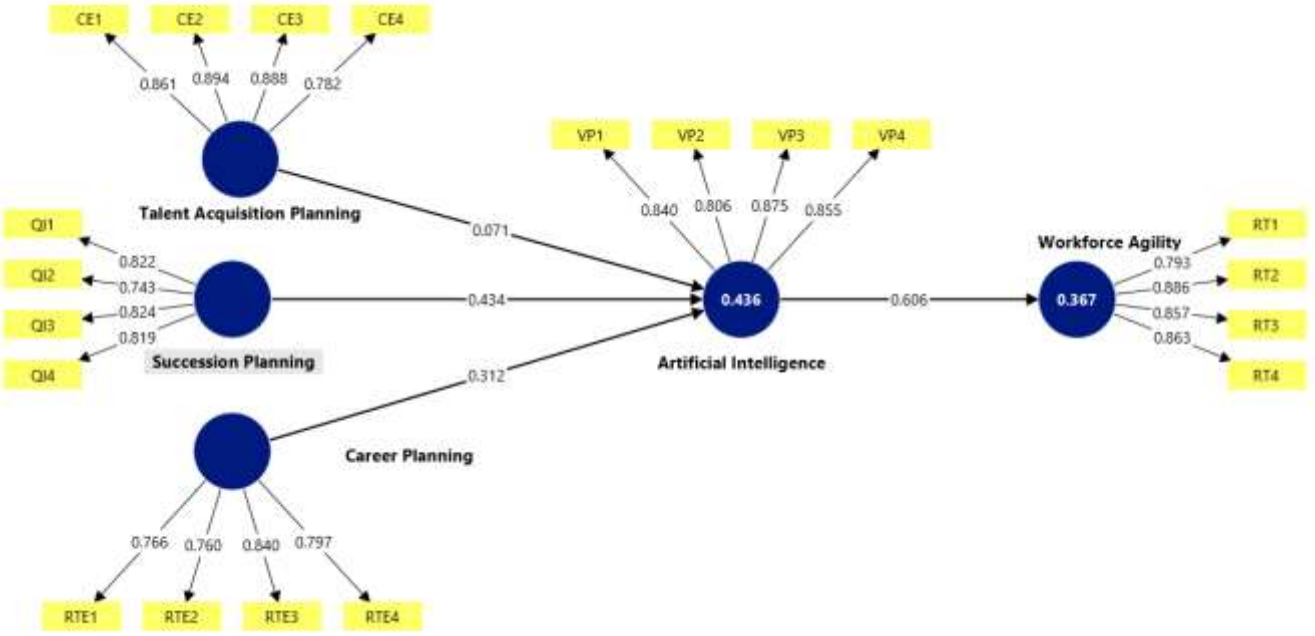

Figure 2: Structural Model Results.

Figure 2 also shows the structural model of the connection between the Human Resource Planning (HRP) dimensions, i.e. Career Planning, Succession Planning, and Talent Acquisition Planning, with the adoption of Artificial Intelligence (AI) and further on with the Workforce Agility. The path coefficients indicate that Succession Planning (2 = 0.434) and Career Planning (2 = 0.312) follow a strong positive impact on AI with Talent Acquisition Planning (2 = 0.071) having a weak but positive impact. Artificial Intelligence has a great mediating effect on Workforce Agility (0.606), which is a significant positive value. The R 2 values show that HR planning accounts the 43.6 percent of the variance in AI and 36.7 percent in Workforce Agility, which shows that it has moderate explanatory power. It is reliable with all the indicator loadings being above 0.70. On balance, the model reveals that successful HR planning enhanced by the use of AI makes companies more adaptable and responsive to the workforce.

Table 6: Hypotheses Test.

#	Hypotheses	(O)	(STDEV)	T Statistics	P values	Result
H1	Artificial Intelligence -> Workforce Agility	0.606	0.046	13.279	0	Supported

H2	Career Planning -> Artificial Intelligence	0.312	0.043	7.218	0	Supported
H3	Career Planning -> Workforce Agility	0.189	0.035	5.399	0	Supported
H4	Succession Planning -> Artificial Intelligence	0.434	0.047	9.272	0	Supported
H5	Succession Planning -> Workforce Agility	0.263	0.034	7.823	0	Supported
H6	Talent Acquisition Planning -> Artificial Intelligence	0.071	0.04	1.782	0.075	Unsupported
H7	Talent Acquisition Planning -> Workforce Agility	0.043	0.025	1.734	0.083	Unsupported

Analysis Of Hypothesis Testing Results

The findings of the analysis of the structural model and hypothesis testing were summarized in Table 5 based on Partial Least Squares Structural Equation Modeling (PLS-SEM) with 5,000 bootstrapped resamples. The findings have solid empirical support of most of the hypothesized connections between the constructs. Five (H1-H5) of the seven hypotheses were supported with two (H6 and H7) not being supported at a significance level of 0.05. Path coefficient between the Artificial Intelligence and Workforce Agility (H1: = 0.606,) is positive and very significant which implies that application of artificial intelligence plays a significant role in improving workforce agility. It implies that AI-based systems will allow more responsive, adaptive and efficient workforce activities due to predictive analytics and automated decision-making. In a similar manner, Career Planning demonstrates a considerable influence on both Artificial Intelligence (H2: $\beta = 0.312$, $t = 7.218$, $p < 0.001$) and Workforce Agility (H3: $\beta = 0.189$, $t = 5.399$, $p < 0.001$), which suggests that clear career paths do not only stimulate the adoption of AI-based HR systems but also directly enhance the flexibility and changeability of employees. It is also found that the effect of Succession Planning on Artificial Intelligence (H4: 0.434, $t = 9.272$, $p < 0.001$) and Workforce Agility (H5: 0.263, $t = 7.823$, $p < 0.001$) are significant and statistically significant. This proves that strategic succession management improves organizational preparedness to technology implementation and leadership succession, which subsequently leads to workforce flexibility and survival. Such findings reveal succession planning to be the most powerful HR planning dimension to support the adoption of AI and workforce agility in the Jordanian organizations. Nevertheless, the correlations between Talent Acquisition Planning were statistically non-significant. H6 (0.071, $t = 1.782$, $p = 0.075$) and H7 (0.043, $t = 1.734$, $p = 0.083$) were rejected, since both have p-values that are larger than the 0.05 value. These findings imply that, although the processes of recruitment and selection can be critical in terms of operation, they might have no direct or immediate impact on the implementation of AI and workforce agility. The inconsequential paths can suggest that the talent acquisition effects are indirect or mediated by the other HR processes, training, development, or leadership succession. Altogether, the structural model validates that the role of Human Resource Planning, specifically Career and Succession Planning, is the key to the improvement of Workforce Agility, both directly and indirectly due to the intervention of Artificial Intelligence. The QA of these relationships offers empirical evidence to the study theoretical framework that AI is a dynamic facilitator, which enhances the correlation between strategic HR planning and organizational adaptability to the fast-changing business environment.

6.1. General Analysis of Results

The findings of the research were in close correspondence with the designed model that demonstrated that Career Planning, Succession Planning, and Talent Acquisition Planning as Human Resource Planning dimensions influence Workforce Agility either directly or indirectly through the mediating variable of Artificial Intelligence (AI). These results align with the theory grounded on the Resource-Based View (RBV) resource, which suggests that highly developed HR resources may be turned into strategic resources enhancing adaptability and competitiveness under the condition of the successful integration of such resources with technological and analytical ones. The review proved that the dimensions of all HR planning had a positive correlational relationship with the adoption of AI and Workforce Agility, but the magnitude of their effects was different. Succession Planning turned out to be the strongest one, which means that systematic leadership succession, active talent pipeline, and skill retention initiatives effectively contribute to the readiness of the organization to introduce AI in its operations and the prompt reaction to the market changes. This finding is consistent with the existing literature (e.g., Ren et al., 2021; Dubey et al., 2023), according to which forward-looking HR planning promotes resilience and flexibility through the preparation of employees against digital and operational changes.

There was also a high and meaningful influence of Career Planning on both AI and Workforce Agility. This means that by offering clear career development opportunities, organizations will be in a better position to have employees which are more flexible, inspired and open to change in regard to technology. Another contributor to these outcomes is the AI-based career management technologies such as predictive analytics and intelligent training environments that match the skills of employees with emerging employment opportunities. Conversely, Talent Acquisition Planning had less significant impact with less significance and hence statistically insignificant on AI and Workforce Agility. The discovery above shows that agility may not be significantly affected by the recruitment processes unless enhanced with AI-based analytics, post-hiring development, and organizational learning mechanisms. Artificial Intelligence has become an important and favorable mediating variable that defines the strategic value of such a tool in transforming the results of HR planning to agile workforce behaviors. The AI complements the real-time decision making and workforce forecasting and optimizes resource distribution, therefore, acting as a technological mediator that strengthens the connection between the HR planning and the agility. In a sense, this is factual in that the organizations which exploit the AI tools in HR processes are more flexible, digitally agile, and survival competitive in the marketplace. Put altogether, these results confirm that the use of AI in HR planning is linked to a synergistic model that facilitates dynamic workforce abilities. Human resource policies combined with the insights of AI organizations and fosters a culture of continuous learning, change and flexibility within the organization. In this way, the findings demonstrate the strategic topicality of introducing AI enhanced HR planning systems to enable Workforce Agility, stay competitive, and achieve operational effectiveness in a digital economy adjusted by change.

6.2. Theoretical Implications

The empirical evidence is in agreement with the conceptual framework that was developed demonstrating that the dimensions of Human Resource Planning, which are Career Planning, Succession Planning, and Talent Acquisition Planning, are much needed in an organization since they directly or indirectly affect Workforce Agility with the mediating effect of Artificial Intelligence (AI). The results are in line with the theoretical assumptions of the Resource-Based View (RBV) that in case valuable, rare inimitable and sufficiently coordinated internal organizational resources are available, they can be utilized to create the sustainable competitive advantage. In this regard, the HR planning practices are strategic and dynamic capabilities, which when combined with technological intelligence systems make businesses more dynamic and flexible in volatile business settings..

6.3. Practical And Managerial Implications

The implications of the results on the HR managers, organizational leaders and policymakers in Jordanian organizations, and other related emerging markets are quite a number. To begin with, the results outline the significance of the introduction of Artificial Intelligence (AI) into the Human Resource Planning (HRP) operations to improve the Workforce Agility. In an attempt to adopt more AI-enabled systems, managers are expected to use it to enhance data-based workforce analytics, predictive talent management, and real-time performance tracking. These systems would assist in the identification of skill shortages at an early stage, align the strategic objectives with the competencies of the workforce and the resultant rapid flexibilities in the busy business environment. Second, the results indicate that Succession Planning, and Career Planning are some of the critical leverages towards achieving workforce agility. The managers are also expected to combine the systematized career building programs and leadership tracks that are supported by AI based forecasting and recommendation programs. Such systems enable the future leaders to be proactively ready and the overall strength of employees due to continuous upskilling, which in turn makes the company flexible in the long run. Third, the Talent Acquisition Planning must move away the traditional recruitment processes into the AI-assisted selection and onboarding systems. Through predictive analytics and machine learning, organizations are able to enhance the accuracy of hiring, evaluating cultural fit, and better matching the capabilities of talent with the need of organizational agility. This transition enables the HR departments to reduce bias, maximize resource allocation, and employee retention. In addition, the results also point to the fact that workforce agility cannot be realized with the help of technology but the strategic collaboration of human and artificial intelligence. Automation and human judgment should be balanced by managers, encouraging employees to be more engaged, creative, and responsible. Digital literacy, adaptive thinking, and

ethical use of AI training will be performed on a regular basis to equip employees with the ability to work well with intelligent systems and evolve with the fast technological change. Lastly, policymakers can also contribute to it, especially in the Ministry of Labour in Jordan, and higher education institutions by giving incentives to the AI-based HR development programmes and creating a national system to plan the digital workforce. These would accelerate the adoption of AI-based HR systems in sectors, which would enhance the agility and competitiveness of the entire labor market. Combined, these practical implications are an intelligent strategy guide in the development of HR systems that do not only have to be intelligent, dynamic and ethically managed, but also what it takes to organizational survival and growth at the dawn of the digital age.

6.4. Limitations And Future Research

Although this research offers useful empirical evidence on the relationship between Human Resource Planning, Artificial Intelligence, and Workforce Agility, a number of shortcomings must be noted, and the research can be directed in the future. To begin with, the study had a cross-sectional design, recording data at one instance and this limits the determination of causal relationships. The upcoming research might utilize longitudinal design to follow changes and development of HR planning and AI-driven agility and how these factors affect each other in the long-term.

Second, even though the self-reported survey data are used, this will cause common method bias or social desirability effect, regardless of the confidentiality measures that are applied. Future research can incorporate perceptual data with objective measures, e.g., the performance indices of the workforce, AI adoption scales, or digital readiness scales, to further strengthen the strength of the results. Third, the fact that the study was conducted on Jordanian organizations does not allow generalizing the findings to other fields and areas. Future study needs to carry out comparative research within industries or between developed and developing economies to identify the contextual variation in the adoption of AI and workforce agility. Fourth, this study discussed three HR planning dimensions Career Planning, Succession Planning, and Talent Acquisition Planning- and one mediating construct, Artificial Intelligence. The next generation of the model might add other constructs, including organizational learning capability, digital maturity, or culture of innovation, to offer a more profound theoretical perspective on the notion of workforce agility. Additionally, there might be several moderators, such as digital leadership, trust in AI, or organizational culture, which might be investigated to define the boundary conditions of such relations. Lastly, the quantitative method was very robust in terms of statistical findings but might not be sufficient in terms of behavioral and cultural dynamics of AI-driven HR transformation. The future research may also use qualitative research or mixed methodologies this may include interviews, focus groups, or case studies to investigate how employees and managers experience AI integration. These approaches may reveal subtle details on barriers to implementation, ethical issues and success factors that would otherwise be detected by quantitative data. Overall, longitudinal, cross-sectoral, and mixed-method research would expand the insights into the use of AI-enabled HR planning as a means of agility in the digital economy and provide additional actionable information to organizations that aim to synchronize technological advancement with human flexibility at the workplace.

7. CONCLUSION

The present research analyzed how the Human Resource Planning (HRP) affects the Workforce Agility with a particular focus on the mediation role of Artificial Intelligence (AI) in Jordanian organizations. The empirical results obtained with the help of the Partial Least Squares Structural Equation Modeling (PLS-SEM) supported the idea that, using AI technologies, the well-designed HR planning practices have a strong positive impact on the workforce agility. The results show that HRP is not an administrative form of perfunctory but a strategic means of organizational flexibility, innovation and competitiveness sustainability. In particular, the influence of Career Planning and Succession Planning was the biggest in the agility in the workforce which implies that the systematic talent and the continuity of the leadership are the secrets of building highly adaptive companies. The role played by the Artificial Intelligence as the mediating factor also proves the significance of the use of data-driven insights and predictive analytics to transform the HR systems into proactive and responsive management systems. In theory, the results imply the Resource-Based View (RBV) because it implies that strategic integration of human and technological resources leads to rare and inimitable capabilities that ensure a competitive advantage. Practically, the findings can prompt

managers to view HR planning and AI integration as strategic facilitators, and they promote agility, efficiency, and ethical innovation unanimously. In conclusion, the paper is going to contribute to the theory and practice by showing how a more agile and future-oriented workforce can be formed with the help of AI-based HR planning. Companies that incorporate structured systems of human resource along with technological intelligence can be more responsive, operationally great and have a lasting future. In the future, the model could be utilized in other areas and instances, introducing the variables of digital trust, innovation capability, and learning orientation to the list of the research, as well as developing the understanding of the character of workforce agility during the digital era.

REFERENCES

Alhawamdeh, H., Al-Saad, S. A., Almasarweh, M. S., Al-Hamad, A. A.-S. A., Bani Ahmad, A. Y. A. B., & Ayasrah, F. T. M. (2023). The Role of Energy Management Practices in Sustainable Tourism Development: A Case Study of Jerash, Jordan. International Journal of Energy Economics and Policy, 13(6), 321–333. https://doi.org/10.32479/ijeep.14724

A. Y. A. Bani Ahmad, M. Allahham, W. I. Almajali, F. T. Ayasrah and S. Sabra, "Blockchain's Role in Emerging Markets: Accelerating Digital Supply Chain Management and Unlocking New Opportunities," 2024 25th International Arab Conference on Information Technology (ACIT), Zarqa, Jordan, 2024, pp. 1-6, doi: 10.1109/ACIT62805.2024.10877053.

A. Y. A. Bani Ahmad, M. Allahham, W. I. Almajali, F. T. Ayasrah and S. Sabra, "Smart Logistics Services: How Artificial Intelligence Transforms Decision-Making," *2024 25th International Arab Conference on Information Technology (ACIT)*, Zarqa, Jordan, 2024, pp. 1-4, doi: 10.1109/ACIT62805.2024.10876978.

A. Y. A. Bani Ahmad, M. Allahham, W. I. Almajali, F. T. Ayasrah and S. Sabra, "From Interaction to Action: How User Input Shapes Logistics and Decisions in Jordan's E-Industry," 2024 25th International Arab Conference on Information Technology (ACIT), Zarqa, Jordan, 2024, pp. 1-6, doi: 10.1109/ACIT62805.2024.10877225.

Adeniran, I. A., Efunniyi, C. P., Osundare, O. S., & Abhulimen, A. O. (2024). Optimizing logistics and supply chain management through advanced analytics: Insights from industries. *Engineering Science and Technology Journal, 4*(1), 52–61.

Ahmad Y. A. Bani Ahmad, "Firm Determinants that Influences Implementation of Accounting Technologies in Business Organizations," WSEAS Transactions on Business and Economics, vol. 21, pp. 1-11, 2024

Ahmad, A. (2024). Ethical implications of artificial intelligence in accounting: A framework for responsible ai adoption in multinational corporations in Jordan. International Journal of Data and Network Science, 8(1), 401-414.

Ahmad, A. Y. A. B. (2024, April). The Changing Role of Accountants in the AI Era: Evolving Skill Sets and Career Pathways. In 2024 International Conference on Knowledge Engineering and Communication Systems (ICKECS) (Vol. 1, pp. 1-5). IEEE.

Ahmad, A. Y. A. B., Alzubi, J., James, S., Nyangaresi, V. O., Kutralakani, C., & Krishnan, A. (2024). Enhancing Human Action Recognition with Adaptive Hybrid Deep Attentive Networks and Archerfish Optimization. Computers, Materials & Continua, 80(3)

Ahmad, A. Y. B. (2024). E-invoicing and Cost Reduction: A Case Study of Multinational Corporations. Journal of Information Systems Engineering and Management, 9(2), 25009.

Ahmad, A. Y. B. (2024, May). CS Challenge in Creating AI-Integrated System. In 2024 4th International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE) (pp. 1515-1520). IEEE.

Ahmad, A. Y. B., Ali, M., Namdev, A., Meenakshisundaram, K. S., Gupta, A., & Pramanik, S. (2025). A Combinatorial Deep Learning and Deep Prophet Memory Neural Network Method for Predicting Seasonal Product Consumption in Retail Supply Chains. In *Essential Information Systems Service Management* (pp. 311-340). IGI Global.

Ahmad, A. Y. B., Atta, A. A. B., Shehadeh, M. A. H. A., Baniata, H. M. A., & Hani, L. Y. B. (2023). Fund family performance: Evidence from emerging countries. WSEAS Trans. Bus. Econ, 20, 951-964.

Ahmad, A. Y. B., Gongada, T. N., Shrivastava, G., Gabbi, R. S., Islam, S., & Nagaraju, K. (2023). E-Commerce Trend Analysis and Management for Industry 5.0 using User Data Analysis. International Journal of Intelligent Systems and Applications in Engineering, 11(11s), 135-150.

Ahmad, A. Y. B., Gupta, P., Thimmiaraja, J., Goswami, B., Arun, M., Manoharan, G., & Younis, D. (2024). A

Comparison of the Effects of Robotics and Artificial Intelligence on Business Management and Economics. In Recent Advances in Management and Engineering (pp. 132-137). CRC Press.

Ahmad, A. Y. B., Hannoon, A., Al-Daoud, K. I., Abu-Alsondos, I. A., & Al-Qaisieh, M. S. (2023). Assessment of Cloud Based Accounting Technology Adoption and Business Performance. Kurdish Studies, 11(3).

Ahmad, A. Y. B., Kumari, D. K., Shukla, A., Deepak, A., Chandnani, M., Pundir, S., & Shrivastava, A. (2024). Framework for Cloud Based Document Management System with Institutional Schema of Database. International Journal of Intelligent Systems and Applications in Engineering, 12(3s), 672-678.

Ahmad, A. Y. B., Kumari, D. K., Shukla, A., Deepak, A., Chandnani, M., Pundir, S., & Shrivastava, A. (2024). Framework for Cloud Based Document Management System with Institutional Schema of Database. International Journal of Intelligent Systems and Applications in Engineering, 12(3s), 672-678.

Ahmad, A. Y. B., Tiwari, A., Nayeem, M. A., Biswal, B. K., Satapathy, D. P., Kulshreshtha, K., & Bordoloi, D. (2024). Artificial Intelligence Perspective Framework of the Smart Finance and Accounting Management Model. International Journal of Intelligent Systems and Applications in Engineering, 12(4s), 586-594.

Ahmad, A. Y. B., William, P., Uike, D., Murgai, A., Bajaj, K. K., Deepak, A., & Shrivastava, A. (2024). Framework for Sustainable Energy Management using Smart Grid Panels Integrated with Machine Learning and IOT based Approach. International Journal of Intelligent Systems and Applications in Engineering, 12(2s), 581-590.

Ahmad, A. Y. Bani ahmad , (2019). Empirical Analysis on Accounting Information System Usage in Banking Sector in Jordan. Academy of Accounting and Financial Studies Journal, 23(5), 1-9.

Ahmad, A., Abusaimeh, H., Rababah, A., Alqsass, M., Al-Olima, N., & Hamdan, M. (2024). Assessment of effects in advances of accounting technologies on quality financial reports in Jordanian public sector. Uncertain Supply Chain Management, 12(1), 133-142.

Al Rob, M. A., Nor, M. N. M., Alshdaifat, S. M., & Salleh, Z. (2025). Impact of competition and client size on big data analytics adoption: A TAM study of auditors. Qubahan Academic Journal, 5(1), 278-294. https://doi.org/10.48161/qaj.v5n1a1129

Al-Afeef, M., Fraihat, B., Alhawamdeh, H., Hijazi, H., AL-Afeef, M., Nawasr, M., & Rabi, A. (2023). Factors affecting middle eastern countries' intention to use financial technology. International Journal of Data and Network Science, 7(3), 1179-1192.

Al-Hawamdeh, H. M. (2020). The Intermediate Role of Organizational Flexibility in the Impact of Using Information Technology on the Efficiency of the Application of IT Governance in Jordanian Industrial Companies. Modern Applied Science, 14(7).

Alhawamdeh, H. M., & Alsmairat, M. A. (2019). Strategic decision making and organization performance: A literature review. International review of management and marketing, 9(4), 95.

Alhawamdeh, H., Al-Saad, S. A., Almasarweh, M. S., Al-Hamad, A. A. S., Ahmad, A. Y., & Ayasrah, F. T. M. (2023). The role of energy management practices in sustainable tourism development: a case study of Jerash, Jordan. International Journal of Energy Economics and Policy, 13(6), 321-333.

Ali, A. A. A., Sharabati, A.-A. A., Alqurashi, D. R., Shkeer, A. S., & Allahham, M. (2024). The impact of artificial intelligence and supply chain collaboration on supply chain resilience: Mediating the effects of information sharing. *Uncertain Supply Chain Management, 12*(3), 1801–1812. https://doi.org/10.5267/j.uscm.2023.12.002

Ali, O., Al-Duleemi, K., Al-Afeef, D. J., & Al-hawamdah, D. H. (2019). The Impact of the Decisions of the COBIT 5 Committee on the Effectiveness of the Internal Control Systems in the Jordanian Industrial Joint Stock Companies. The Journal of Social Sciences Research, 5(11), 1587-1599.

Aljabari, M., Althuwaini, S., Bouguerra, A., Allahham, M., & Allan, M. (2024). The impact of digital marketing strategies on innovation: The mediating role of AI: A critical study of SMEs in the KSA market. *International Journal of Data and Network Science, 8*(4), 2029–2036. https://doi.org/10.5267/j.ijdns.2024.6.017

Alkhawaldeh, B. Y. S., Alhawamdeh, H., Almarshad, M., Fraihat, B. A. M., Abu-Alhija, S. M. M., Alhawamdeh, A. M., & Ismaeel, B. (2023). The effect of macroeconomic policy uncertainty on environmental quality in Jordan: Evidence from the novel dynamic simulations approach. Jordan Journal of Economic Sciences, 10(2), 116-131.among Faculty Members in Public and Private Universities in Jordan

Alkhawaldeh, B., Alhawamdeh, H., Al-Afeef, M., Al-Smadi, A., Almarshad, M., Fraihat, B., ... & Alaa, A. (2023).

The effect of financial technology on financial performance in Jordanian SMEs: The role of financial satisfaction. Uncertain Supply Chain Management, 11(3), 1019-1030.

Alkhazaleh, A., Assaf, A., Shehada, M., Almustafa, E., & Allahham, M. (2023). Analysis of the impact of fintech firms' lending on the expansion of service base companies in Jordan. *Information Sciences Letters, 12*(8), 2891–2902. https://doi.org/10.18576/isl/120837

Allahham, M., & Ahmad, A. (2024). AI-induced anxiety in the assessment of factors influencing the adoption of mobile payment services in supply chain firms: A mental accounting perspective. International Journal of Data and Network Science, 8(1), 505-514.

Alrjoub, A. M. S., Almomani, S. N., Al-Hosban, A. A., & Allahham, M. I. (2021). The impact of financial performance on earnings management practice behavior: An empirical study on financial companies in Jordan. *Academy of Strategic Management Journal, 20*(Special Issue 2), 1–15.

Al-Tahat, S., Bani-Khaled, S., Jaradat, Z., Mansour, M., & Al-Zoubi, A. M. (2025). State ownership as a moderator in the relationship between board characteristics and ESG performance: Evidence from Asia-Pacific markets. *Journal of Business and Socio-Economic Development.* Advance online publication. https://doi.org/10.1108/JBSED-05-2025-0145

Ashrafuzzaman, M., Prince, K. B., & Rahman, A. (2024). Integrating artificial intelligence in HRM: The role of management information systems in enhancing decision-making processes. *International Journal of Management Information Systems and Data Science, 1*(1), 1–16.*

Atta, A. A. B., Ahmad, A. Y. A. B., Allahham, M. I., Singh, R. R., & Maginmani, U. H. (2023). Application of machine learning and blockchain technology in improving supply chain financial risk management. In *Proceedings of the International Conference on Contemporary Computing and Informatics (IC3I 2023)* (pp. 2199–2205). IEEE. https://doi.org/10.1109/IC3I56697.2023.10367348

Atta, A. A. B., Ahmad, A. Y. A. B., Allahham, M. I., Sisodia, D. R., & Singh, R. R. (2023). Application of machine learning and blockchain technology in improving supply chain financial risk management. In *Proceedings of the International Conference on Contemporary Computing and Informatics (IC3I 2023)*. IEEE. https://doi.org/10.1109/IC3I59117.2023.10397935

Badawi, M., Alofan, F., Allahham, M., Sabra, S., Abubaker, N. M., & Ahmad, A. Y. B. (2024). The Impact of Supply Chain Agility on Operationalizing Sustainable Procurement the Mediating Role of System and Process Integration in the Pharmaceutical Sector in Saudi Arabia. EVOLUTIONARY STUDIES IN IMAGINATIVE CULTURE, 1632-1650.

Basu, S., Majumdar, B., Mukherjee, K., Munjal, S., & Palaksha, C. (2023). Artificial intelligence–HRM interactions and outcomes: A systematic review and causal configurational explanation. *Human Resource Management Review, 33*, 100893. https://doi.org/10.1016/j.hrmr.2022.100893

Booyse, D., & Scheepers, C. B. (2024). Barriers to adopting automated organisational decision making through the use of artificial intelligence. *Management Research Review, 47*(1), 64–85. https://doi.org/10.1108/MRR-05-2023-0258

Bouanba, N., Barakat, O., & Bendou, A. (2022). Artificial intelligence and agile innovation: Case of Moroccan logistics companies. *Procedia Computer Science, 203*, 444–449. https://doi.org/10.1016/j.procs.2022.07.059

Budhwar, P., Chowdhury, S., Wood, G., Aguinis, H., Bamber, G. J., Beltran, J. R., Boselie, P., Cooke, F. L., Decker, S., & DeNisi, A. (2023). Human resource management in the age of generative artificial intelligence: Perspectives and research directions on ChatGPT. *Human Resource Management Journal, 33*(4), 606–659. https://doi.org/10.1111/1748-8583.12485

Budhwar, P., Malik, A., De Silva, M. T., & Thevisuthan, P. (2022). Artificial intelligence—Challenges and opportunities for international HRM: A review and research agenda. *International Journal of Human Resource Management, 33*(6), 1065–1097. https://doi.org/10.1080/09585192.2022.2041968

Chinda, C. N., & Omorogieva, A. A. (2024). Reward system and employee commitment. *American Journal of Multidisciplinary Bulletin, 1*(2), 13–23.*

Chowdhury, S., Dey, P., Joel-Edgar, S., Bhattacharya, S., Rodriguez-Espindola, O., Abadie, A., & Truong, L. (2023). Unlocking the value of artificial intelligence in human resource management through AI capability framework. *Human Resource Management Review, 33*, 100899. https://doi.org/10.1016/j.hrmr.2023.100899

Dhalīwal, A. (2022). Towards AI-driven transport and logistics. In *Workshop on E-Business* (pp. 45–57). Springer.

Dima, J., Gilbert, M.-H., Dextras-Gauthier, J., & Giraud, L. (2024). The effects of artificial intelligence on human

resource activities and the roles of the human resource triad: Opportunities and challenges. *Frontiers in Psychology, 15*, 1360401. https://doi.org/10.3389/fpsyg.2024.1360401

Dutta, D., & Mishra, S. K. (2024). Bots for mental health: The boundaries of human and technology agencies for enabling mental well-being within organizations. *Personnel Review, 53*(4), 1129–1156. https://doi.org/10.1108/PR-06-2023-0335

Dutta, D., Mishra, S. K., & Tyagi, D. (2023). Augmented employee voice and employee engagement using artificial intelligence-enabled chatbots: A field study. *International Journal of Human Resource Management, 34*(12), 2451–2480. https://doi.org/10.1080/09585192.2022.2117845

Fenwick, A., Molnar, G., & Frangos, P. (2024). Revisiting the role of HR in the age of AI: Bringing humans and machines closer together in the workplace. *Frontiers in Artificial Intelligence, 6*, 1272823. https://doi.org/10.3389/frai.2023.1272823

Haq, M. Z. U., Asadullah, M. A., & Manzoor, F. (2023). The impact of human resource and information technology on supply chain learning and operational performance. *Journal of Business & Industrial Marketing, 38*(9), 1927–1940. https://doi.org/10.1108/JBIM-03-2022-0092

Hasan, E. F., Alzuod, M. A., Al Jasimee, K. H., Alshdaifat, S. M., Hijazin, A. F., & Khrais, L. T. (2025). The Role of Organizational Culture in Digital Transformation and Modern Accounting Practices Among Jordanian SMEs. Journal of Risk and Financial Management, 18(3), 147. https://doi.org/10.3390/jrfm18030147

Hmoud, B., & Varallyai, L. (2023). Role of artificial intelligence in human resource management in the Middle East countries. *KnE Social Sciences, 8*(1), 435–448. https://doi.org/10.18502/kss.v8i1.13729

Joel, O. S., Oyewole, A. T., Odunaiya, O. G., & Soyombo, O. T. (2024). Leveraging artificial intelligence for enhanced supply chain optimization: A comprehensive review of current practices and future potentials. *International Journal of Management and Entrepreneurship Research, 6*(4), 707–721.*

Kaushal, N., Kaurav, R. P. S., Sivathanu, B., & Kaushik, N. (2023). Artificial intelligence and HRM: Identifying future research agenda using systematic literature review and bibliometric analysis. *Management Review Quarterly, 73*(3), 455–493. https://doi.org/10.1007/s11301-022-00320-1

Krishnan, R., Govindaraj, M., Kandasamy, L., Perumal, E., & Mathews, S. B. (2024). Integrating logistics management with artificial intelligence and IoT for enhanced supply chain efficiency. In *Anticipating Future Business Trends: Navigating Artificial Intelligence Innovations* (Vol. 1, pp. 25–35). Springer.

Maghsoudi, M., Shahri, M. K., Kermani, M. A. M. A., & Khanizad, R. (2023). Unveiling the collaborative patterns of artificial intelligence applications in human resource management: A social network analysis approach. *arXiv Preprint*, arXiv:2308.09798. https://doi.org/10.48550/arXiv.2308.09798

Malik, A., Budhwar, P., & Kazmi, B. A. (2023). Artificial intelligence and the future of HRM: Challenges and pathways ahead. In *The Adoption and Effect of Artificial Intelligence on Human Resources Management, Part A* (pp. 155–179). Emerald Publishing. https://doi.org/10.1108/S1877-636120230000014007

Malik, A., Nguyen, T.-M., & Budhwar, P. (2022). Towards a conceptual model of AI-mediated knowledge sharing exchange of HRM practices: Antecedents and consequences. *IEEE Transactions on Engineering Management, 71*(12), 13083–13095. https://doi.org/10.1109/TEM.2022.3173151

Mer, A., & Virdi, A. S. (2023). Navigating the paradigm shift in HRM practices through the lens of artificial intelligence: A post-pandemic perspective. In *The Adoption and Effect of Artificial Intelligence on Human Resources Management, Part A* (pp. 123–154). Emerald Publishing. https://doi.org/10.1108/S1877-636120230000014006

Mori, M., Sassetti, S., Cavaliere, V., & Bonti, M. (2024). A systematic literature review on artificial intelligence in recruiting and selection: A matter of ethics. *Personnel Review.* Advance online publication. https://doi.org/10.1108/PR-03-2023-0225

Morshed, A., Maali, B., Ramadan, A., Zoubi, M., & Allahham, M. (2024). The impact of supply chain finance on financial sustainability in Jordanian SMEs. *Uncertain Supply Chain Management, 12*(4), 2767–2776. https://doi.org/10.5267/j.uscm.2023.12.013

Pachori, J., Sajid, M., & Batra, S. (2024). The role of human resource management in attracting and retaining top talent. *Journal of Technical Education, 47*(2), 145–158.*

Panda, A., Pasumarti, S. S., & Hiremath, S. (2023). Adoption of artificial intelligence in HR practices: An empirical analysis. In *The Adoption and Effect of Artificial Intelligence on Human Resources Management, Part B* (pp. 65–80). Emerald Publishing Limited. https://doi.org/10.1108/S1877-636120230000014006

Pillai, R., Ghanghorkar, Y., Sivathanu, B., Algharabat, R., & Rana, N. P. (2024). Adoption of artificial intelligence

(AI)-based employee experience (EEX) chatbots. *Information Technology & People, 37*(2), 449–478. https://doi.org/10.1108/ITP-12-2022-1012

Prikshat, V., Islam, M., Patel, P., Malik, A., Budhwar, P., & Gupta, S. (2023). AI-augmented HRM: Literature review and a proposed multilevel framework for future research. *Technological Forecasting and Social Change, 193*, 122645. https://doi.org/10.1016/j.techfore.2023.122645

Prikshat, V., Malik, A., & Budhwar, P. (2023). AI-augmented HRM: Antecedents, assimilation and multilevel consequences. *Human Resource Management Review, 33*(1), 100860. https://doi.org/10.1016/j.hrmr.2021.100860

Rukadikar, A., Pandita, D., & Choudhary, H. (2023). Adoption of artificial intelligence in talent acquisition: The need for the e-business environment. In *Proceedings of the 8th International Conference on Business and Industrial Research (ICBIR)* (pp. 18–19). Bangkok, Thailand.

Sharabati, A.-A. A., Awawdeh, H. Z., Sabra, S., Allahham, M., & Ali, A. (2024). The role of artificial intelligence on digital supply chain in industrial companies: Mediating effect of operational efficiency. *Uncertain Supply Chain Management, 12*(3), 1867–1878. https://doi.org/10.5267/j.uscm.2023.12.009

Sharabati, A.-A. A., Rehman, S. U., Malik, M. H., Sabra, S., & Al-Sager, M. (2024). Is AI biased? Evidence from FinTech-based innovation in supply chain management companies. *International Journal of Data and Network Science*. https://doi.org/10.5267/j.ijdns.2024.2.005

Shehadeh, H. K., Ahmad, A. Y. B., Allahham, M., & Alsager, M. (2024). The mediating role of ICT on the impact of supply chain management (SCM) on organizational performance (OP): A field study in pharmaceutical companies in Jordan. *Uncertain Supply Chain Management, 12*(2), 1251–1266. https://doi.org/10.5267/j.uscm.2023.11.011

Singh, A., & Pandey, J. (2024). Artificial intelligence adoption in extended HR ecosystems: Enablers and barriers. *Frontiers in Psychology, 14*, 1339782. https://doi.org/10.3389/fpsyg.2024.1339782

Urme, U. N. (2023). The impact of talent management strategies on employee retention. *International Journal of Science and Business, 28*(3), 127–146. https://doi.org/10.5281/zenodo.9991234

Vijaykumar, V., Mercy, P., Lucia Agnes Beena, T., Leena, H. M., & Savarimuthu, C. (2024). Convergence of IoT, artificial intelligence, and blockchain approaches for supply chain management. In *Blockchain, IoT, and AI Technologies for Supply Chain Management: Applying Emerging Technologies to Address and Improve Supply Chain Management* (pp. 45–89). Springer. https://doi.org/10.1007/978-3-031-56732-1_3

Wang, Q. (2023). The impact of AI on organizational employees: A literature review. *Journal of Education, Humanities and Social Sciences, 19*, 45–53. https://doi.org/10.54615/jehss.v19i1.789

Xiàng, H., Lu, J., Kosov, M. E., Volkova, M. V., Ponkratov, V. V., Masterov, A. I., Elyakova, I. D., Popkov, S. Y., Taburov, D. Y., & Lazareva, N. V. (2023). Sustainable development of employee lifecycle management in the age of global challenges: Evidence from China, Russia, and Indonesia. *Sustainability, 15*(7), 4987. https://doi.org/10.3390/su15064987

Y. A. B. Ahmad, S. S. Kumari, M. S, S. K. Guha, A. Gehlot and B. Pant, "Blockchain Implementation in Financial Sector and Cyber Security System," 2023 International Conference on Artificial Intelligence and Smart Communication (AISC), Greater Noida, India, 2023, pp. 586-590, https://doi.org/10.1109/AISC56616.2023.10085045

Y. A. Bani Ahmad, M. Allahham, W. I. Almajali, F. T. Ayasrah and S. Sabra, "Supply Chain Innovation on Acceleration Decision-Making, The Mediating Role of Tech and Integration in the Retail Sector," 2024 25th International Arab Conference on Information Technology (ACIT), Zarqa, Jordan, 2024, pp. 1-6, doi: 10.1109/ACIT62805.2024.10876940.

Yamin, M. A., Almuteri, S. D., Bogari, K. J., & Ashi, A. K. (2024). The influence of strategic human resource management and artificial intelligence in determining supply chain agility and resilience. *Sustainability, 16*(4), 2688. https://doi.org/10.3390/su16042688

Yu, X., Xu, S., & Ashton, M. (2023). Antecedents and outcomes of artificial intelligence adoption and application in the workplace: The socio-technical system theory perspective. *Information Technology & People, 36*(2), 454–474. https://doi.org/10.1108/ITP-04-2022-0338