“How HR analytics catalyzes bank competitiveness: Investigating the mediating role of data-driven decision-making and the moderating effect of organizational agility”

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HOW HR ANALYTICS CATALYZES BANK COMPETITIVENESS: INVESTIGATING THE MEDIATING ROLE OF DATA-DRIVEN DECISION-MAKING AND THE MODERATING EFFECT OF ORGANIZATIONAL AGILITY

Abstract

In today's data-driven economy, banks face growing pressure to enhance their competitiveness through evidence-based strategic management. This study investigates the role of human resource analytics in fostering bank competitiveness within the Jordanian banking sector. Specifically, it explores the mediating role of data-driven decision-making and the moderating impact of organizational agility. The study employed a quantitative approach, surveying 293 manager-level professionals from departments such as human resources, planning, and risk management in Jordanian banks. Data were collected via an electronic survey conducted between October and December 2024. A five-point Likert scale captured participants' perceptions of HR analytics, data use in decision-making, organizational agility, and competitiveness. Partial least squares structural equation modeling was utilized to test the model's direct and indirect relationships. The results provide strong empirical support for all five hypotheses. HR analytics was found to significantly influence bank competitiveness ($\beta = 0.432$, $p < 0.01$) and data-driven decision-making ($\beta = 0.421$, $p < 0.01$). Data-driven decision-making had the strongest direct effect on competitiveness ($\beta = 0.485$, $p < 0.01$). Indirect effects revealed a significant mediating role for data-driven decision-making ($\beta = 0.312$, $p < 0.01$), while organizational agility was shown to positively moderate the HR analytics-competitiveness relationship ($\beta = 0.297$, $p < 0.01$). These findings highlight the strategic value of HR analytics in enhancing decision-making processes and emphasize the role of agility in unlocking its full potential. The study contributes valuable insights for banking leaders seeking to align HR analytics with competitive strategy in dynamic environments.

Keywords human capital analytics, decision support systems, competitive strategy in banking, Jordan

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INTRODUCTION

In today's competitive and high-speed banking industry, Human Resource (HR) analytics has proven to be a game-changer, helping institutions improve performance and maintain a competitive edge. As banks move more toward managing their employees based on data, HR analytics is becoming more important for making smarter decisions and being more flexible, both of which are necessary to do well in the constantly changing financial world. Resource-based view theory proves that the most important thing for long-term success is internal resources, especially talented employees. Literature highlights how HR analytics can be utilized to boost productivity, recognize key employee skills, and reduce turnover, ultimately improving the abil-

ity of a bank to stay ahead (Nagpal & Mishra, 2021). By permitting data-driven insights to inform HR initiatives, banks can enhance employee retention and overall efficiency, as seen in private banking institutions (Pahuja & Garg, 2021).

Possibly the most critical way HR analytics drives competitiveness is by powering data-driven decision-making (DDDM), helping leaders rely on facts rather than feeling alone when making business decisions. Through workforce analytics, banks can streamline hiring, develop talent better, and optimize risk management processes. Studies show that banks that embrace DDDM see better financial performance and long-term strategic success (López-Penabad et al., 2021). Nevertheless, the complete promise of HR analytics depends on a bank's agility, its ability to adapt to emerging technologies, regulatory demands, and market conditions. With banking activities becoming a digitally agile workforce, strategies are now no longer an option but a necessity to survive. Banks that integrate HR analytics into agile management systems have been shown to be more innovative and more resilient to disruptions (Gabbasova et al., 2021).

1. LITERATURE REVIEW

Strategic deployment of HR analytics has become essential for financial institutions that desire to stay competitive in the long term. Empirical evidence provided by Gitonga et al. (2016) shows that data-driven talent management strategies foster higher levels of employee satisfaction and result in reduced turnover, both of which are vital to having a resilient and nimble banking workforce. These findings align with the resource-based view (RBV) theory, which asserts that human capital, if appropriately developed and retained, forms a valuable and inimitable resource that can yield long-term competitive advantage (Ravesangar & Narayanan, 2024). Besides workforce management optimization, HR analytics directly influences financial performance. Research shows that banks that invest in employee engagement and motivation programs make more money (Rahman et al., 2017). By reducing costs associated with turnover and improving operational efficiency, such HR investments are translated into overall organizational success. Gul and Ellahi (2021) found that using data analytics in HR processes could increase bank productivity by about 10%, showing that using analytics in HR can be financially beneficial.

However, the benefits of HR analytics extend beyond financial gains; they play a crucial role in strategic decision-making. Companies like Bank of America have used HR analytics to great advantage to extract actionable workforce insights that have led to more effective management decisions and business outcomes (McCartney & Fu, 2022). In today's fast-paced banking sector, where quick, informed decisions are critical, this kind of data-driven approach sets high-performing banks apart from the rest. Ferreira et al. (2011) also note that a bank's human capital is one of its most valuable assets, and HR analytics helps optimize and manage these assets to stay competitive. One of the best aspects of HR analytics is its ability to identify and develop specialist talent that is hard for competitors to replicate. Ravesangar and Narayanan (2024) highlight how prioritizing these unique skill sets through analytics has the potential to significantly strengthen a bank's market presence. The strategic imperative of talent development and retention has become even more important in the current banking landscape, where heightened competition and market saturation demand greater operational efficiency and labor productivity. In this scenario, HR analytics has emerged as a primary enabler of data-driven decision-making in organizational operations. By systematically collecting, analyzing, and interpreting employee-related data, HR departments are better able to identify actionable trends and patterns for making more precise and effective business decisions. Such data-driven insights enhance core HR functions, including recruitment, performance management, and employee engagement, and thus lead to improved organizational outcomes (Okatta et al., 2024; Ravesangar & Narayanan, 2024; Pandya, 2023).

Banks can better align HR initiatives with strategic goals when they switch from making decisions based on gut feelings to decisions based on facts. Managers can make sure that human capital strat-

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egies are in line with overall institutional goals by keeping an eye on key performance indicators (KPIs) all the time (Ben-Gal, 2019; Gaur, 2024; Muktamar & Nurnaningsih, 2024). Also, improvements in machine learning and big data analytics are making it easier for HR professionals to predict workforce trends, predict how employees will act, and meet the needs of the organization before they happen. These skills show how important HR analytics is becoming as a strategic partner in dealing with tough HR problems in the digital age. HR analytics is a powerful tool for gaining a competitive edge through proactive workforce management (Tawalbeh et al., 2025) and not just for making decisions more accurately. By analyzing employee turnover rates, levels of engagement, and training effectiveness, organizations can develop targeted initiatives to improve employee satisfaction and retention (McCartney & Fu, 2022; Patnaik et al., 2024; Mushtaq et al., 2024). Adopting a data-driven mindset not only enhances individual and team performance but also encourages a culture of continuous improvement and innovation, both of which are necessary for sustaining long-term organizational prosperity (Minbaeva, 2017; Verma et al., 2020; Jabir et al., 2019).

As banks speed up their data-driven models, HR analytics has become an important way for banks that do well to stand out from others in the same field. Businesses can make their operations more efficient, hire the right people, and plan for their future workforce needs if they use workforce data well (Danilkova, 2024; Dahlbom et al., 2019; Fernández & Gallardo-Gallardo, 2020). HR analytics helps banks plan their strategic workforce by giving them insights they can use right away. This helps them react to changing job market dynamics. This skill comes in handy when things aren't going as planned and you need to be able to quickly adapt and act on talented people in the future to stay ahead of the competition (Fink & Sturman, 2017; Angrave et al., 2016). Using HR analytics to make decisions helps the company reach its short-term operational goals and sets it up for long-term innovation and resilience.

In the banking industry, DDDM has become a primary source of competitiveness. Big data analytics and data science technologies help banks learn useful things from huge amounts of operational and customer data. These capabilities drive service personalization, internal process optimization, and responsiveness to strategy. Numerous studies show that companies that use DDDM are more productive, innovative, and profitable than their competitors. For example, Hasan et al. (2021) proved that companies that used data-driven strategies did better financially than companies that used old-fashioned ways to make decisions. Being able to accurately study how customers act is very important for banks because it leads to more personalized services and better relationships with customers (Hasan et al., 2021; Li, 2022). As the financial services industry changes, new technologies, especially artificial intelligence (AI) and big data, are the fastest ways that firms set themselves apart from each other. These technologies make the experience of customers better and make operations more efficient, which is critical in a world that is becoming more unstable and competitive. For instance, research has shown that personalizing financial services with AI can be profitable, especially since fintech and digitally native players are changing the way traditional banks work (Khadka et al., 2023; Sankar et al., 2023). When banks can read and act on information in real time, they can keep up with changes in the market, meet the changing needs of their customers, and protect their position in a field that is becoming more and more reliant on data (Li, 2023; Pillay & Merwe, 2021).

The banking industry increasingly perceives the strategic utilization of big data analytics as an innovation driver. Big data is a major source of new products and processes in developing countries like Indonesia, according to studies that show this (Ritchi et al., 2022). This helps businesses make better decisions. The application of data mining techniques also helps financial institutions to be more efficient in their operations as it gives them a deeper understanding of risks, helps them detect fraud sooner, and allows them to manage their customer relationships more effectively (Pulakkazhy & Balan, 2013; Farooqi & Iqbal, 2019). These technological advances help build a culture based on data, which helps everyone in an organization make decisions more quickly and with more accurate data. In their 2024 paper, Alhanatleh et al. (2024) say that DDDM is important for both short-term and long-term strategic planning and foresight. Business intelligence (BI)

tools have facilitated the making of more granular, fact-based strategic decisions. This has resulted in streamlining internal processes and provided a long-term competitive advantage (Alzghoul et al., 2022; Mikalef et al., 2019). Analytics-based projects also need people who understand and can use data well, as well as a culture that encourages everyone to think and make choices based on data (Zaghmout, 2024). By following these principles, banks set themselves up to keep coming up with new ideas and keep the strategic flexibility they need to do well in a financial world that is becoming more complex and changing all the time.

In banking, DDDM is very important because it acts as a link between HR analytics and the competitiveness of an organization. By integrating HR analytics into decision systems, banks can use workforce data to improve talent management, make the most of their human capital strategy, and raise the overall performance of their institutions. There is more and more writing that talks about how important DDDM is for turning raw HR data into strategic information that gives an organization an edge in a changing financial world. Basically, HR analytics helps DDDM work better by gathering factual information that guides strategic planning and day-to-day operations. According to Pandya (2023), incorporating HR analytics into an organization's policies and procedures can improve employee performance and the overall work experience, which can lead to a long-term competitive advantage. Muktamar and Nurnaningsih (2024) also say that HR analytics gives human resource professionals the data-driven skills to get employees more involved and improve business results. Following these points, Nurbaiti (2021) gives real-world evidence that HR analytics and financial performance are linked. This means that companies that use HR data regularly are in a good position to improve HR processes, make workers more productive, and stay competitive. Cumulatively, these findings indicate that HR analytics, when executed through DDDM, operate as a strategic driver of both human and financial capital performance in banking institutions.

HR analytics can be extremely valuable for firms, but only if banks possess a data-driven culture and decision-makers actually use analytics as a matter of course to make both strategic and operational choices. Ellmer and Reichel (2021) mention that there has to be an analytics-minded culture in place to ensure that the insights HR produces are useful, on time, and pertinent to the problem at hand. It is very important to make decisions based on facts rather than gut feelings. This is especially true in the banking industry, where the smart use of HR analytics through DDDM can greatly enhance core tasks like risk management, customer service, and overall organizational performance. These are drivers of long-term competitiveness that banks require to stay relevant. Effective use of HR analytics, however, depends on more than a cultural shift. It also depends on strong structural and managerial competencies. In their 2022 study, Bechter et al. say that for HR analytics to work well, an organization needs to have the right infrastructure to turn data into strategic action. They came to the same conclusions as Kinange et al. (2023), who argue that high-performing companies are using data-driven HR practices more and more in a strategic way. These steps prove the importance of having HR analytics embedded within a well-defined decision context so that the HR initiatives taken are aligned with the overall strategic goals of an organization. If a bank has a good culture and the right infrastructure in place, adding HR analytics will make it more competitive in a financial world that is changing quickly.

The modern financial environment is changing at a rapid rate and becoming more complicated. Organizational agility now plays a crucial role in determining the potential of HR analytics to enhance institutions' competitiveness. For banks that can adapt to new technologies, changing rules, and changing customer needs, HR-derived insights are more likely to translate into real business results. Even though HR analytics can equip organizations with profound insights into labor trends and performance, its usefulness depends on the speed, flexibility, and strategic way in which they can react to such insights. Pulakos et al. (2019) say that agility is the mix of proactive and reactive skills that businesses need to be able to change their strategy as the world around them changes. Based on this assumption, the idea goes that banks that can use HR analytics in flexible business models are more likely to be able to handle changes, keep their market position, and streamline their internal processes. Saha et al. (2017) assert that an organization's flexibility directly influences the impact of HR initiatives. This

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argument is especially important in the banking industry, where changing regulations and digitalization require relentless new ideas. Additionally, HR analytics can be a driver of organizational agility. According to Verma et al. (2020), HR analytics turns labor data into strategic information. This helps banks figure out how likely it is that employees will leave, make the most of their employees, and streamline their business processes. As such, agile companies not only use HR analytics but also make it an integral part of their forward-looking labor strategies, responsiveness to market changes, and relentless innovation.

Developments in digital technologies also underpin the synergy between HR analytics and organizational agility. Gao et al. (2020) say that organizations are much more flexible when they have a strong information technology (IT) infrastructure and digitalization programs. This is because they make HR processes more data-driven. Utilizing sophisticated HR technologies in the banking industry makes the workforce more versatile. This implies that companies can adjust HR policies, reevaluate workforce strategies, and reconfigure business processes instantly to adapt to evolving market conditions. Thathsara and Sutha (2021) further solidify this link by showing that companies that utilize HR analytics in an agile operating model consistently outperform competitors in terms of efficiency and strategic responsiveness. This makes it even more important for banks to create a work culture that encourages adaptability and constant, data-driven innovation. Importantly, agility involves more than just the capacity to react to environmental shifts; it also means that an organization is capable of foreseeing emerging trends and acting on them to create profits. John and Ragui (2024) say that in markets that are very competitive and change quickly, organizational agility is often the key to long-term success. To gain a competitive edge in the long term, it is critical to be able to foresee opportunities on the horizon and utilize resources accordingly. By embedding HR analytics into strategic decision frameworks, banks can utilize agility not just as a response mechanism but also as a proactive driver of innovation and market leadership. Embedding in this way helps banks deal with uncertainty as they try to grow and stand out in a market that is becoming more and more like other markets.

To build on this idea, McCartney and Fu (2022) show that combining HR analytics with organizational agility makes evidence-based management practices a lot better. According to their study, banks that use advanced HR technologies and analytics skills can make better decisions more quickly and with more information. This gives them a stronger and longer-lasting competitive edge. Along with institutional agility, workforce agility has become an important factor in the successful use of HR analytics. Muduli (2017) discusses how psychological empowerment and flexible work strategies can help banks work in tough and complicated business environments. Institutions that help their employees become more data-savvy, flexible, and independent are more likely to use all of HR analytics' benefits to improve workforce planning and strategic talent management. Because the financial services industry is so competitive, it's important to have a deeper understanding of how HR analytics can help drive performance and make strategic decisions. This study aims to investigate the extent to which HR analytics contributes to bank competitiveness, as well as the mediating role of DDDM and the moderating role of organizational agility. By investigating these relationships empirically, the study aims to contribute to understanding how HR analytics can guide workforce strategy, improve the quality of managerial decision-making, and allow institutions to be flexible in the face of rapid changes in the banking sector's environment and technology.

H1: HR analytics positively influences bank competitiveness.

H2: HR analytics positively affects data-driven decision-making.

H3: Data-driven decision-making positively influences bank competitiveness.

H4: Data-driven decision-making mediates the relationship between HR analytics and bank competitiveness.

H5: Organizational agility moderates the relationship between HR analytics and bank competitiveness.

2. RESEARCH METHOD

Specifically, the research seeks to determine whether the integration of HR analytics contributes to improved competitive positioning and how it facilitates evidence-based decision-making while supporting organizational adaptability. To address these objectives, the study employed a purposive sampling strategy targeting professionals at the managerial level across various functional departments, including human resources, strategic planning, and risk management. These individuals were selected due to their direct involvement in decision-making processes and their strategic engagement with HR analytics, agility, and data utilization – factors deemed critical to institutional competitiveness.

Data were collected using a structured, self-administered questionnaire disseminated electronically via Google Forms. The survey instrument consisted of two key sections. The first gathered demographic data, including age, education level, management tier, and years of professional experience, to account for variability in respondent backgrounds. The second section focused on the study's core constructs: HR analytics, DDDM, organizational agility, and bank competitiveness measured using a five-point Likert scale ranging from "*strongly disagree*" to "*strongly agree*." To ensure the reliability and validity of the instrument, a pilot study was conducted among a sample of banking professionals. Feedback obtained during this phase informed revisions to item wording, order, and clarity, enhancing the instrument's overall coherence and alignment with the study's objectives.

Following the pilot study, the finalized survey instrument was distributed to 362 managerial-level employees between October and December 2024. There were 295 responses, of which 293 were complete and valid for analysis. The study used Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyze the data. It is used for testing complicated causal relationships between the direct and indirect effects of latent constructs. PLS-SEM is used for this study because it fits with the conceptual model, which includes mediating and moderating variables and tries to explain why key organizational outcomes vary.

3. RESULTS

PLS-SEM was employed as the primary analytical technique to investigate both the reliability and validity of the measurement model and the confirmation of hypothesized relationships between the constructs. The study conducted a number of validity and reliability tests on the measurement model to demonstrate its strength. Some of these were Cronbach's alpha coefficients, Average Variance Extracted (AVE), and Composite Reliability (CR). All of these tests indicate that the scales for measuring items are reliable, consistent, and convergent. Table 1 presents the complete psychometric properties of each of the constructs under investigation.

The composite reliability (CR) of all the constructs in the model exceeds the 0.70 cut-off, as recommended by Hair et al. (2017). This result demonstrates that the measurement scales are very consistent with each other. The correlation coefficients (CR) for HR analytics adoption (0.89), data-driven decision-making (0.88), organizational agility (0.89), and bank competitiveness (0.85) indicate that each construct accurately reflects the corresponding latent variable. Cronbach's alpha coefficients are also between 0.73 and 0.79, providing further evidence that the measurement model is internally consistent. One item in HR analytics (0.709) and another in organizational agility (0.664) have factor loadings below the generally accepted level of 0.70. However, these are still within acceptable limits because the concepts are aligned and the constructs are generally reliable (Fornell & Larcker, 1981). In addition, the Average Variance Extracted (AVE) values for all the constructs are higher than the minimum level that is recommended, which shows that the validity is convergent. In particular, the AVE values for adopting HR analytics are 0.64, making decisions based on data is 0.60, organizations are 0.55 for being agile, and banks are 0.55 for being competitive. All of these results show that the measurement tools are accurate and reliable ways to show their related theoretical ideas (Hair et al., 2019).

The HR analytics adoption construct demonstrates strong reliability and validity, with CR = 0.89 and AVE = 0.64. The highest factor loading (0.931) corresponds to the item "*HR analytics is integrated*

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Table 1. Reliability and validity assessment

Item	Factor Loading	AVE	CR	Cronbach's
HR Analytics Adoption				
Our bank systematically collects and analyzes HR-related data to improve workforce decisions	0.737	0.64	0.89	0.79
HR analytics is integrated into our bank's strategic decision-making process	0.931			
HR analytics helps us align human resource practices with business objectives	0.854			
Advanced data analysis tools (e.g., AI, big data) are used in HR-related decision-making	0.817			
HR analytics has improved our bank's ability to manage talent and workforce planning	0.709			
Data-Driven Decision-Making				
Decisions within our bank are primarily based on data analysis rather than intuition	0.751	0.60	0.88	0.76
Our bank systematically collects and analyzes data before making major decisions	0.728			
Decisions in our bank are driven by real-time and predictive analytics	0.901			
Employees are encouraged to use data when proposing solutions to business challenges	0.812			
In our bank, managers have access to the necessary analytical tools to support decision-making	0.843			
Organizational Agility				
Our bank quickly adapts to changes in market trends and regulatory requirements	0.761	0.55	0.89	0.73
Our bank encourages flexible decision-making to respond to industry disruptions effectively	0.833			
Our bank embraces technological advancements to stay competitive	0.896			
Employees are empowered to make quick decisions in response to emerging challenges	0.745			
Our bank structure allows us to respond swiftly to customer and business needs	0.721			
Our bank promotes a culture of continuous improvement and learning	0.664			
Our bank proactively anticipates and responds to changes in the financial sector	0.706			
Bank Competitiveness				
Our bank has a strong competitive position compared to other financial institutions	0.784	0.55	0.85	0.74
Our bank consistently outperforms our competitors in terms of service innovation and customer satisfaction	0.751			
The adoption of data analysis tools has given our bank a strategic advantage over competitors	0.702			
Our bank effectively leverages data-driven insights to enhance competitiveness	0.814			
Our bank regularly benchmarks our performance against industry leaders to maintain our competitive edge	0.749			

into our bank's strategic decision-making process," indicating that respondents strongly associate HR analytics with strategic decision-making. Other high-loading items, such as "*HR analytics helps align human resource practices with business objectives*" (0.854) and "*Advanced data analysis tools are used in HR-related decision-making*" (0.817), further emphasize the strategic and technological role of HR analytics in banking. Data-driven decision-making also exhibits strong reliability (CR = 0.88, α = 0.76) and validity (AVE = 0.60). The highest factor loading (0.901) corresponds to "*Decisions in our bank are driven by real-time and predictive analytics,*" highlighting the significance of advanced data analytics in decision-making processes. Similarly, "*Employees are encouraged to use data when proposing solutions to business challenges*" (0.812) and "*Managers have access to the necessary analytical tools*" (0.843) indicate a well-established data-driven culture within the surveyed banks.

The organizational agility construct also meets the validity and reliability criteria, with CR = 0.89 and AVE = 0.55. The highest factor loading (0.896) corresponds to "*Our bank embraces technological advancements to stay competitive*," suggesting that agility is closely linked to digital transformation efforts. Other high-loading items, such as "*Our bank encourages flexible decision-making to respond to industry disruptions effectively*" (0.833), reinforce the role of agility in maintaining competitiveness. While one item has a slightly lower factor loading (0.664), it remains within an acceptable range, indicating that agility is a multidimensional construct encompassing responsiveness, adaptability, and technological advancement. Bank competitiveness is also well-supported with CR = 0.85 and AVE = 0.55. The highest loading item, "*Our bank effectively leverages data-driven insights to enhance competitiveness*" (0.814), reinforces the importance of analytics in maintaining a competitive advantage. The strong loadings for

Table 2. Discriminant validity (Fornell-Larcker criterion)

Constructs	HR Analytics Adoption	Data-Driven Decision-Making	Organizational Agility	Bank Competitiveness
HR Analytics Adoption	0.874	–	–	–
Data-Driven Decision-Making	0.478	0.811	–	–
Organizational Agility	0.701	0.754	0.796	–
Bank Competitiveness	0.816	0.506	0.491	0.843

"*Our bank has a strong competitive position compared to other financial institutions*" (0.784) and "*Our bank consistently outperforms competitors in service innovation and customer satisfaction*" (0.751) highlight the banks' ability to differentiate themselves in a competitive financial environment.

In addition to evaluating the reliability and convergent validity of the constructs, the study also examined discriminant validity using the Fornell-Larcker criterion. Discriminant validity ensures that each construct is distinct from the others, confirming that they measure separate theoretical concepts. According to Fornell and Larcker (1981), discriminant validity is established when the square root of the Average Variance Extracted (AVE) for each construct is greater than its correlation with any other construct in the model.

The results presented in Table 2 confirm that all constructs meet this criterion. The square root of the AVE for each construct is presented diagonally in the table and is greater than its correlations with other constructs, indicating that each variable is distinct yet related to the overall framework. HR analytics adoption (0.874) has the highest correlation with bank competitiveness (0.816) and organizational agility (0.701), suggesting a strong relationship but maintaining its distinctiveness as a separate construct. Similarly, DDDM (0.811) correlates highly with organizational agility (0.754) but remains theoretically and statistically distinguishable. Additionally, organizational agility (0.796) shows moderate correlations with other variables while maintaining its identity as a unique construct. Bank competitiveness (0.843) exhibits strong correlations with HR analytics adoption (0.816), reinforcing the importance of HR analytics in driving competitive advantage in the banking sector. Despite these significant relationships, the higher AVE values along the diagonal confirm that each construct captures a unique aspect of the study framework. These findings affirm that all constructs exhibit satisfactory discriminant validity, ensuring that each variable contributes uniquely to the structural model. With discriminant validity established, the next analysis stage will focus on structural model testing, examining the direct, mediating, and moderating effects of HR analytics, DDDM, and organizational agility on bank competitiveness.

The results indicate statistically significant relationships for H1, H2, and H3, as all t-values exceed the recommended threshold of 1.96 (Hair et al., 2017), and p-values are below 0.01, confirming strong support for the proposed hypotheses.

- *H1* (HR Analytics → Bank Competitiveness): The beta coefficient ($\beta = 0.432$, $p < 0.01$) demonstrates that HR analytics has a significant positive impact on bank competitiveness, explaining 18.7% ($R^2 = 0.187$) of its variance.
- *H2* (Data-Driven Decision-Making → Bank Competitiveness): The strongest relationship in the model, with $\beta = 0.485$ ($p < 0.01$) and $R^2 = 0.234$, highlights the importance of data-driven decision-making in enhancing bank competitiveness.
- *H3* (HR Analytics → Data-Driven Decision-Making): The results ($\beta = 0.421$, $p < 0.01$, $R^2 = 0.199$) confirm that HR analytics significantly

Table 3. Hypothesis testing (direct effects)

Hypothesis	β	SD	t	ρ	R^2	Decision
H1	0.432	0.045	9.6	< 0.01	0.187	Supported
H2	0.485	0.048	10.104	< 0.01	0.234	Supported
H3	0.421	0.039	10.002	< 0.01	0.199	Supported

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Table 4. Hypothesis testing (indirect effects)

Hypothesis	β	SD	t	ρ	Decision
H4	0.312	0.029	10.758	< 0.01	Supported
H5	0.297	0.031	9.581	< 0.01	Supported

influences data-driven decision-making, supporting its mediating role in the relationship with competitiveness.

This study shows that HR analytics and data-driven decision-making are very important for making banks more competitive. It is important for banks to make sure that data-driven HR practices are built into their daily operations and decision-making.

The results are statistically significant because all t-values are above the important level of 1.96 and all p-values are below 0.01, which is what Hair et al. (2017) say should happen. The findings provide strong empirical support for hypotheses *H4* and *H5*.

- *H4* (Mediating Role of Data-Driven Decision-Making): The standardized path coefficient (β = 0.312, p < 0.01) shows that data-driven decision-making is a key part of the link between HR analytics and bank competitiveness. The outcome shows how important it is to include data analytics in human resources. This will help people make smart decisions that will give banks a long-term competitive edge.

- *H5* (Changing the Role of Organizational Agility): The results also show that organizational agility greatly reduces the effect of HR analytics on bank competitiveness (β = 0.297, p < 0.01). This evidence indicates that more agile banks are better positioned to leverage HR analytics in a way that leads to enhanced responsiveness, innovation, and overall market competitiveness. The findings underscore the need to create flexible, agile organizational structures that can translate analytic insights into strategic outcomes.

In a business world that is changing quickly and becoming more competitive every day, HR analytics is not just a way to improve performance; it's also a strategic enabler that makes decisions better and makes organizations more responsive.

4. DISCUSSION

This study looks at data from a Jordanian bank and shows that HR analytics can help managers of employees help them make better decisions, and make businesses faster and more competitive. HR analytics had a positive and significant impact on bank competitiveness (β = 0.432, p < 0.01). Previous research confirms HR analytics can make companies manage human assets with ease, boost workers' productivity, and gain a competitive advantage (Nagpal & Mishra, 2021; Pahuja & Garg, 2021). Similarly, Rahman et al. (2017) attested that bank investments in HR analytics have seen financial performance improvement through workers' increased retention and operational effectiveness. Research shows that the RBV theory highlights the importance of in-house assets, like employees, in keeping a competitive edge (Ravesangar & Narayanan, 2024).

There is a strong positive connection between HR analytics and data-driven decision-making (β = 0.485, p < 0.01). This shows that HR analytics plays a key role in helping banks make decisions based on data. This validates previous studies, such as Okatta et al. (2024) and Pandya (2023), which illustrate how HR analytics facilitates an organization's shift toward fact-based decision-making over intuition. McCartney and Fu (2022) emphasized that HR analytics aids in discovering key competencies and trends in workers and enables them to make effective decisions for enhancing organizational performance. The results of this study agree with Ben-Gal (2019), who stated that HR analytics helps offer useful information for HR actions, making them more effective and in line with business goals. The findings supported that DDDM positively affects bank competitiveness (β = 0.421, p < 0.01). This validates Hasan et al. (2021), who found that banking companies with a fact-based approach outshine their counterparts in financial performance and operational efficiency. Besides, Li (2023) emphasized that fact-based decision-making aids in enhancing service for customers and risk management, two drivers in

a bank's competitive positioning. This study supports the findings of Pulakkazhy and Balan (2013), which showed that big data and data mining help detect fraud and assess risks, making banks more competitive in a changing financial landscape.

The study found that DDDM mediates HR analytics and bank competitiveness ($\beta = 0.312$, $p < 0.01$). This concludes that HR analytics enables competitiveness through efficiency in decision-making. This conclusion aligns with Pandya (2023) and Nurbaiti (2021), who argued that HR analytics simplifies HR processes and maximizes workforce productivity, enhancing an organization's competitive advantage. Similarly, Dahlbom et al. (2019) reiterated that transitioning to an analytics-enriched decision-making environment maximizes HR analytics' value, supporting the argument that HR analytics effectiveness is amplified when accompanied by effective decision frameworks. The study found that organizational agility moderates HR analytics and bank competitiveness ($\beta = 0.297$, $p < 0.01$). This supports earlier research showing that being agile helps organizations use HR analytics effectively and stay competitive. Gao et al. (2020) also attested that IT infrastructure and digital transformation contribute a lot towards agility and, through agility, enable banks to respond appropriately to market dislocations and regulatory changes. Besides, McCartney and Fu (2022) found that banks that integrate HR analytics with agility management frameworks have high innovation and adaptability, supporting the conclusion of this study.

This study contributes to the existing body of literature by providing empirical evidence on the strategic significance of HR analytics within the banking sector. The findings underscore the critical importance of integrating HR analytics with data-driven decision-making and organizational agility to enhance institutional competitiveness. From a managerial standpoint, the results suggest that bank executives should prioritize investments in advanced HR analytics technologies, cultivate a data-driven organizational culture, and strengthen agile capabilities to effectively navigate market volatility and evolving customer demands. From a policy perspective, regulatory bodies and industry stakeholders are encouraged to develop supportive frameworks that promote the systematic adoption of HR analytics and agile decision-making practices across financial institutions. Despite the theoretical contributions of this study, there are still numerous research opportunities available. Comparative studies that look at differences between banking and non-banking financial services in how they use HR analytics, for example, may give useful contextual information. It might be more useful to look at how HR analytics is changing the role of strategic management by adding factors like readiness for digital transformation, adoption of AI, and regulatory compliance as possible moderators. Longitudinal research designs are also recommended to capture the enduring effects of HR analytics on organizational performance over time and thereby offer a more complete view of its long-term strategic contribution.

CONCLUSION

This study aims to examine how human resource analytics can make banks more competitive and how data-driven decision making and adaptive organization contribute to it. The implications are that human resource analytics is a natural way in which companies become more competitive. The finding indicates that human resource analytics directly renders a bank competitive, especially in terms of finding optimum bank management, optimizing the portion of risk, and leveraging overall performance. Banks must typically leverage human resource analytics in a remarkably data-driven manner for optimum decision-making processes. Analytics turns employee data into useful insights somehow. This kind of information furnishes managers with the requisite knowledge, enabling them to make well-informed decisions and bolster operations efficiently under complex circumstances.

The study also finds that organizational agility can play a moderating role. It appears to illustrate that banks that are responsive and adaptable are more likely to convert analytical insights into genuine strategic outcomes. Organizations endowed with the capacity to act soon on technological changes, regulatory

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requirements, and customer demands will be better positioned to leverage human resource analytics as a major source of competitive advantage. The outcome demonstrates how critical it is to create organizations that can dynamically evolve and make rapid decisions. This study provides solid evidence that human resource analytics has a significant role in improving the competitiveness of banks. Repetition of human resource analytics, combined with evolving data-driven strategic decision-making and agile organizational capability, helps mitigate complexity and uncertainty within the financial services industrial industry. Banks promoting deep analysis and swift organizational response will thrive amidst digital upheaval and regulatory changes as they foster innovation and maintain competitive advantage.

AUTHOR CONTRIBUTIONS

Conceptualization: Amro Alzghoul.
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Investigation: Amro Alzghoul.
Methodology: Amro Alzghoul.
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Visualization: Amro Alzghoul.
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