

EVALUATING THE IMPACT OF ARTIFICIAL INTELLIGENCE ON RECRUITMENT OPERATIONS IN BAHRAIN'S RETAIL SECTOR

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ABSTRACT

This study aims to evaluate the impact of artificial intelligence (AI) technologies on recruitment processes within the scope of the Kingdom of Bahrain's retail sector operations. The methodological approach adopted in this study is centered on a quantitative research design aided by an online survey that was designed to collect information pertaining to the research variables; namely - usage of AI technologies and recruitment process efficiency. Following this, statistical analyses were performed on the collected data such as ANOVA and regression tests with the purpose of identifying relationships that existed between AI adoption and recruitment process performance in the context of Bahrain's retail sector. The results of this study indicate a positive relationship between the usage of AI tools in the recruitment process and improved recruitment efficiency outcomes. The findings of this particular study point towards a range of different benefits that retail sector organizations in Bahrain can benefit from the adoption of AI such as improved candidate sorting, better quality of new hires, and overall efficiency in various recruitment related aspects. The findings of this study provides valuable insights for HR professionals and the management of retail organizations in Bahrain and similar markets when it comes to emphasizing the role of AI in improving and modernizing recruitment practices in the current competitive business environment.

Keywords: Artificial Intelligence, Recruitment Efficiency, Retail Sector, Bahrain, AI Tools, Candidate Matching, Data Privacy.

Introduction

The retail sector in the Kingdom of Bahrain is highly important in the economic context of the country due to the significant contribution it makes to the GDP and its overall economic growth (Al-Mahy, 2013). Due to this fact, numerous previous studies have focused on improving the effectiveness and efficiency of this particular sector in various domains such as operations, human resources (HR), supply chain management, employee relations, and various other areas. In the context of this study, the focus is on contributing positively to retail sector operations in Bahrain with the help of improving the efficiency in critical HR practices such as recruitment.

It is also important to consider the relevance of AI technologies within the field of HR operations in the context of this particular study. There is sufficient evidence currently to show that numerous AI related advancements have been making positive impact on recruitment operations within the domain of HR, such as automating repetitive tasks, improving the screening process of candidates, using data

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driven insights to improve decision making, and several other benefits that have been derived over the years as a result of AI adoption in this area (Alex, 2021; Budhwar et al., 2022). These facts make it very important for HR professionals operating within the retail sector industry in Bahrain to be aware of the latest AI technologies that can be utilized to improve the functioning of the current HR processes, such as recruitment in particular.

Research Objectives

The following objectives are achieved towards the end of this study.

- To investigate the AI technologies presently used in the recruitment processes in Bahrain's retail industry.
- To evaluate the efficiency and effectiveness of recruitment processes driven by AI in comparison to conventional methods.
- To put forward actionable recommendations for enhancing the adoption of AI in recruitment processes within the retail industry in the Bahrain.

Research Hypothesis

The following hypotheses were tested in this study.

- H₀₁:** The incorporation of AI technologies does not enhance the effectiveness of recruitment procedures in Bahrain's retail industry.
- H₁:** The incorporation of AI technologies greatly enhances the effectiveness of recruitment procedures in Bahrain's retail industry.
- H₀₂:** Recruitment processes that are powered by AI does not bring superior hiring results when compared to conventional approaches.
- H₂:** Recruitment processes that are powered by AI produce superior hiring results when compared to conventional approaches.

Literature Review

The existing literature review on this topic clearly shows that the integration of AI technology within the field of HR is not a new concept, and it had gained a lot of scholarly attention over the past decades. Numerous authors and scholars within the academy community such as George and Thomas (2019) and Uma et al. (2023) have pointed out that AI has a significant impact on HR operations, and in particular considering recruitment operations. As a result, a number of journal articles have been explored in this study for the purpose of linking AI adoption within the field of recruitment operations in the context of different countries and regions.

According to authors such as Okatta et al. (2024), AI is generally understood as a combination of a number of different technologies such machine learning, speech recognition, image recognition, robotics, and various others that are aimed towards the purpose of substituting human thinking and learning abilities with the help of computers and programming. These technologies have been used in recent times within the domain of recruitment operations in order to identify trends and patterns, make predictions about job requirements, analyze candidate profiles, improve working processes, and aid in top management decision making within the domain of recruitment operations as presented by authors such as Alex (2021) and Gupta & Mishra (2023). Currently, numerous automated tasks are commonly seen in the context of numerous global organizations within the area of recruitment operations such as reviewing candidate profiles, communicating with candidates, sending follow-up emails, scheduling interviews, and final selection of the candidates (Sýkorová et al., 2024).

The theoretical framework used in this study is based on the Technology Acceptance Model (TAM). According to several previous studies, this is a highly popular theoretical model that makes use of concepts that explain the relationship between the adoption of particular technology in terms of its ease of use and usefulness, and human factors such as attitude and behavioral intention towards such technology (Surendran, 2012). Considering the domain of recruitment operations, the TAM model has been utilised in a number of different previous studies including the ones conducted by Ore and Sposato (2022) and Khan et al. (2024), who have clearly established the efficiency of this particular theoretical model in linking factors related to AI adoption and its positive contributions towards different recruitment related processes.

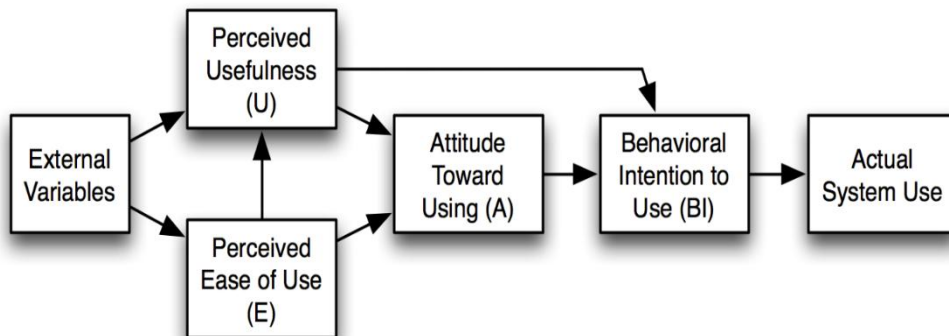


Figure 1: Technology Acceptance Model (Venkatesh et al., 2003)

Research Methodology

The methodological approach adopted for this particular study is based on a quantitative research design and a descriptive nature of study. The philosophical paradigm utilized in this study is positivism due to the fact that this type of paradigm supports the use of research techniques that are scientific in nature and relies on hypothesis testing in order to establish a clear and measurable relationship between variables and constructs utilized in the context of any study (Flick, 2015). The research instrument utilized specifically for the study is an online survey, which was created using Google Forms and contained a number of different questions pertaining to the research variables; namely AI adoption and its impact on recruitment operations. The research sample required for this particular study was calculated using the sample size formula put forward by Hair et al. (2010), as per which a sample size of about 180 respondents was considered sufficient for this particular study. A non-probability-based sampling technique was made use of by the researcher by targeting a sample of at least five different listed organizations in the Kingdom of Bahrain that operated within the retail operations sector in the country.

Data Analysis & Discussions

A total of 157 valid responses were collected with the help of the online survey questionnaire as explained in the previous section. Out of the total number of participants, 58% of the participants were male participants and the remaining 41% were female. The majority of the participants were in the age group of 36 to 40 and they amounted to about 30% of the whole survey respondents. The majority of the participants totaling about 43% held Bachelor's degrees. When it comes to their work experience, the most commonly occurring one was the category of 10+ years of work experience and this amounted to about 61% of the participants. About 50% of the participants who answered the survey held middle management positions within their respective organizations.

The survey results also revealed that out of the entire research participants, 45% of them indicated that their organizations use various AI technologies in their recruitment operations. Out of these participants, about 55% of them pointed towards resume screening software as the most common technological feature that is recurrently used. This was followed by about 30% of the participants who pointed towards the use of AI based video interview analysis, which was followed by about 24% of the participants who showed the use of chatbots for candidates screening and predictive analysis for candidate efficiency.

About 30% of the research participants agreed and strongly agreed in terms of their familiarity with different AI technologies within the recruitment processes, supported by about 30% of the respondents who agreed that their organization uses AI technologies on a very frequent basis in different aspects of recruitment operations. About 50% of the respondents either agreed or strongly agreed that AI has made improvements in the efficiency of the recruitment process. However, a significant percentage of the total respondents agreed that there are a number of different challenges when it comes to implementing AI technologies in recruitment. In this regard, 45% of the participants pointed towards data privacy as the biggest challenge, followed by about 34% of them who indicated lack of experience, and about 33% of them also pointing towards the cost of implementation and resistance to change on behalf of the employees.

Table 1: ANOVA Test

Source of Variation	SS (Sum of Squares)	df (Degrees of Freedom)	MS (Mean Square)	F	p-value
Between Groups	240	2	120	4.80	0.01
Within Groups	600	24	25		
Total	840	26			

The Analysis of Variance (ANOVA) test was performed for the analysis in order to determine the differences that existed in recruitment efficiency across varying levels of AI adoption among the organizations, whose employees participated in the survey conducted for this study. The above Table 1 shows the results of this test, which points towards the presence of clear differences in recruitment efficiency across different levels of AI adoption. This is indicated through the p-value associated with this test of 0.01, which is below the common alpha level of 0.05. From a practical perspective, this is a clear indication that there is a clear measurable impact of recruitment efficiency when considering the integration of different AI technologies into different activities pertaining to recruitment operations.

Table 2: Regression Analysis

Model	Coefficient (B)	Standard Error	t-value	p-value
Constant	2.50	0.75	3.33	0.003
AI Technologies Usage	0.60	0.15	4.00	0.001

The findings of this regression analysis, presented in Table 2, indicates that the constant term (reflecting the baseline recruitment efficiency when AI usage is absent) was estimated at 2.50, with a standard error of 0.75. This results in a t-value of 3.33 and a p-value of 0.003, suggesting that the constant term is significantly different from zero. More importantly, the coefficient for the Use of AI Technologies was determined to be 0.60, accompanied by a standard error of 0.15. The t-value associated with this coefficient was 4.00, while the p-value was a very significant 0.001. This suggests that with every unit rise in the use of AI technologies, there is a corresponding 0.60 unit rise in recruitment efficiency, assuming all other factors remain unchanged. The statistical importance of this coefficient ($p < 0.05$) strongly reinforces the idea that adopting AI positively impacts recruitment efficiency.

Table 3: Hypothesis Testing

Hypothesis	Test Type	Test Statistic	p-value	Decision ($p < 0.05$)	Conclusion
H1	Regression	t = 4.00	0.001	Reject H0	AI technologies significantly improve recruitment efficiency.
H2	ANOVA	F = 4.80	0.01	Reject H0	AI-driven recruitment processes yield better outcomes.

The hypothesis testing shown in Table 3 consolidates the results from the statistical tests performed in relation to this study. The initial hypothesis (H1) relates to the incorporation of AI technologies and their impact on enhancing the effectiveness of recruitment processes in Bahrain's retail industry. This hypothesis was evaluated through regression analysis, and the findings showed a t-value of 4.00 alongside a p-value of 0.001, resulting in the null hypothesis being rejected. This verifies that AI technologies greatly enhance recruitment efficiency.

The second hypothesis (H2) relates to the assertion that recruitment processes powered by AI technologies lead to improved hiring results compared to conventional approaches. This was determined via the ANOVA test, which produced an F-statistic of 4.80 and a p-value of 0.01. The dismissal of the null hypothesis here further reinforces the assertion that AI powered recruitment methods excel in efficiency and results.

Findings and Conclusion

One of the key findings of this study is that a strong and significant correlation exists between AI adoption and the effectiveness of recruitment operations, as demonstrated through a quantitative research framework and supported by various statistical tests conducted as part of this research analysis. This leads to a positive conclusion that organizations within the retail sector in the context of the Kingdom of Bahrain have a good incentive to adopt AI technologies in areas such as video interviews, candidate screening, and predictive analysis in order to enhance the overall recruitment outcomes. This conclusion goes hand in hand with the broader findings in the existing literature that AI technologies have an overall positive outcome on HR operations in general (Budhwar et al., 2022; Ore and Sposato, 2022). However, it is also to be noted that there are several challenges and barriers when it comes to AI adoption in the domain of recruitment operations such as privacy concerns, bias, cost of implementation, and numerous other problems, which are also supported by different authors and scholars in the existing literature on this subject (Uma et al., 2023). Therefore, organizations will always have to bear in mind the cost of adopting AI into their HR operations such as recruitment before they put forward any long term commitment.

Recommendations and Future Research

Considering the above findings of the study, one of the foremost recommendations of this research is that organizations operating across the retail sector within Bahrain and other business sectors in the country need to undertake a detailed feasibility study as to what AI related technologies they can adopt within their HR operations such as recruitment, along with understanding the potential benefits and challenges that they would face in the process. In addition, another major recommendation of this research study is that organizations should also carefully evaluate the operational and ethical challenges of AI implementation within their recruitment operations. Last but not the least, it is also recommended that organisations that have decided the adopt AI into their recruitment and other HR operations need to do so in a step-by-step manner that would allow for an incremental evaluation of the benefits and cost of implementing the AI technology within their HR operations.

Considering that there are certain limitations of this study such as limited sample size, unidirectional research design, focus on one particular business sector only, and limited generalizability of the study findings, future research studies that will be performed on this topic need to adopt mixed methodological approaches, apply different data measurement time frames such as longitudinal technique, and expand the scope of the study in terms of variables and geographical considerations. Lastly, it is also suggested that future studies conduct a comparative approach to AI implementation in different country and regional contexts in order to arrive at a better understanding of how the impact of AI varies in terms of different country settings and business contexts, and how these further impact recruitment process efficiency and outcomes among other HR aspects.

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