Analyzing employees’ perceptions of using artificial intelligence and gamification in HRM practices on employee’s job insecurity

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Abstract
Research on Artificial Intelligence (AI) and Gamification (GF) continues to expand, and the use of artificial intelligence has sparked discussions on the future direction of human resource management practices. The importance of artificial intelligence (AI) in the field of human resource management has increased as it enables departments to fulfill their duties more effectively. A specific focus on employees' perceptions of using Artificial Intelligence and Gamification in Human Resource Management Practices (HRMP) is still limited. This research aims to reveal the perceptions of HR employees towards artificial intelligence (AI) and Gamification (GF) in managing Human Resource Management Practices (HRMP). In addition, examining the relationship between using Artificial Intelligence and Gamification on Employees’ Job Insecurity (JOBINS). This research has used a quantitative approach and data analysis. Total of 450 respondents were involved in this research, but only 400 were qualified. The respondents are Human Resource employees in many sectors. Correlation and Regression analysis are used to test the research hypotheses. The results of this research revealed that Using both Artificial Intelligence and Gamification has a significant positive effect on employees' job insecurity. In addition, the use of Artificial Intelligence (AI) in the training and development process could help employees reduce the stress and time they spend on searching for and finding the right candidate. It could also help them improve the efficiency of their work by allowing them to focus on the training and not on the monotonous tasks. Moreover, using Gamification (GF) in managing Human Resource Management Practices (HRMP) could increase the employees’ motivation and Engagement. The contribution of this research to the literature is examining the gap between employees’ perceptions towards Artificial Intelligence (AI) and Gamification (GF) in managing Human Resource Management Practices (HRMP) and the impact on employees’ Job Insecurity (JOBINS). This research provides a comprehensive analysis of the perceptions of employees about the use of artificial intelligence and gamification in HR departments. It also provides valuable insight into the potential of this technology in improving the efficiency of organizations. Further research is also needed to determine if the findings from this research could be applied to all employees inside the organization not only the employees who are working in HR department. In addition, it would be beneficial to conduct further studies on how to develop effective training and briefing materials for use of Artificial Intelligence in recruitment systems.

1. Introduction
The organization’s most valuable resource is its workforce. Managing employees, their productivity, efficiency, and compliance is an increasingly difficult challenge for human resources. Organizations are looking to AI and gamification to address this issue. By incorporating Artificial Intelligence into the Human Resources department, which must strike a balance between employees and managers, will find its job easier. As the subsequent step, human resources have begun to digitalize and integrate Artificial Intelligence technologies. (Agarwal,2022) emphasized that it is appropriate to implement Artificial Intelligence technology in the human resources sector because recruiters are unable to make highly precise applicant selection decisions.

Even if extremely competent individuals are identified using AI technology, employees who do not feel a part of the organization may experience challenges such as a drop in performance, discontent with their jobs, and a loss of confidence. Unsuccessful implementation of training and development programs
may be one of the most important factors contributing to these problems. According to research conducted by Burg (2015), the use of artificial intelligence in training and development enabled the delivery of training that was rapid, effective, and practically error-free. When the old method is used to evaluate the performance of newly hired staff, managers and employees spend a significant amount of time at work. Moreover, (Bersin, 2018) emphasized the significance of AI in human resource management (HRM) and forecasted that this rate will increase in the future. Furthermore, (Tambe et al., 2019) underlined that the proportion of employees that are AI-ready will increase in the future.

Technological advances are altering the boundaries between the labor duties performed by humans and those carried out by computers and algorithms. Artificial Intelligence is a word used to describe a variety of technologies and purposes, but it primarily refers to the capacity of a computer system to accomplish tasks that ordinarily require human intelligence (Brennen et al., 2018). Human resource management is influenced by technology, which has shifted from static business resource systems to advanced artificial intelligence (AI) software that performs activities previously performed by humans. A recent global poll reveals that AI and data analysis are two of the four most significant trends influencing the Human resource practices.

Moreover, Artificial Intelligence is predicted to have a significant impact on HR practices, which are closely tied to the human component in most firms. When AI is used in the HR department, employees may see it as a danger, fearing that Artificial Intelligence would eventually replace them and cause them to lose their employment.

Artificial intelligence can be trained in a controlled environment using precise and coherent datasets to achieve HRM goals (Kambur, Akar, 2021). Employees should be made aware of the Artificial Intelligence training that will be employed in HR. Inappropriate training may prevent employees from taking full use of new technology. HR's practices may be harmed as a result. Human resource managers' perceptions of risk are reflected in the technology risks connected with the Artificial Intelligence integrated business analytics solution they are considering. One of the most difficult problems to overcome is the issue of risk. It's possible that AI-powered solutions could harm HR if they are not properly secured. Adapting to an artificial intelligence integrated solution may appear to be a daunting task for HR professionals. Risks may arise because of this view (Coupe, 2019). The risk perception can be enhanced by HR’s impression of uncertainty. As a result of this uncertainty, it may be difficult to predict the future. Working in an environment where people feel trusted is critical. Bias and privacy concerns might arise when people lack confidence in the source of their data. AI, on the other hand, is fundamentally different from humans. A lack of trust can lead to a negative outcome if these perceptions are held. (Kambur & Akar, 2021)

Gamification is the usage of games and game-related components outside of the typical playground for a serious purpose within enterprises or training institutions (Gimson, 2012; Brownhill, 2013) with the goal of making ordinary tasks more appealing and enjoyable (Sarangi & Shan, 2015). Gamification has arisen as a trend in the business and marketing sectors in recent years, capturing the interest of academics, educators, and practitioners. Gamification, according to researchers and practitioners, can be utilized in any process that involves employees. Gamification is more than just playing games. Thus, according to (Kim, 2021), games create an imagined world that is distinct from reality, yet gamification augments reality with game aspects. Elements of a game that go beyond the typical game format drive players to act and have fun, increasing participant engagement and motivation (Kapp, 2012). From the standpoint of an employer, (Mollick and Rothbard, 2014) see gamification as a tool for engaging employees in some type of competition and thereby contributing to the attainment of organizational goals.

Furthermore, incorporating gamification into human resource practices enables HR practitioners to promote employee engagement by motivating them to learn the company's management tools, enhance their expertise, and enhance their performance effectively and efficiently. How employees perform on assigned jobs may be evaluated and ways to improve their performance on further duties can be framed easily after implementation. Gamification can be used at any phase in the human resource process, from enticing new employees to retaining those who have been with the company for a while. The recent Improvement in Machine learning and artificial intelligence indicates the real danger of jobs. In response to these concerns, several experts have proposed new policies aimed at reducing employees' apprehension
of technology (Mullins & Sabherwal, 2018). Others have stated that certain skills, such as interpersonal communication and creativity, are likely to remain inferior to humans for quite some time. As a result, jobs that need these talents are likely to be more resistant to automation. (A (Presibitero, Teng-Calleja, 2022) claimed about which skills and jobs are resistant to automation are frequently based on theoretical and intuitive reasoning; this research examining whether respondents are concerned about being replaced by Artificial Intelligence and more likely to believe their jobs will still exist in the same way they expect (Coupe, 2019). Furthermore, this research investigates whether respondents are fearful about other sources of job insecurity due to using technology in their jobs. Accordingly, the research is conducted to examine the perceptions of Human Resource employees about using technology in managing human resource management practices. as they are suddenly had to switch to the radical increase in using artificial intelligence and its application in their everyday functions. Also, it will provide a road map or set of suggestions regarding the relationship between artificial intelligence, gamification, Human Resource practices and the job insecurity of employees. Artificial intelligence and its use in HRM practices will be more effective if we can gain a better understanding of how employees perceive the use of artificial intelligence and its applications in the workplace and to what extent they feel secure and safe, despite the widespread adoption of technology and artificial intelligence in all fields.

Despite the importance of Artificial Intelligence, research on its effects on employee perceptions has been limited. This research aims to identify the employees’ perceptions towards using Artificial Intelligence and Gamification in managing Human Resource Management Practices and its impact on their job insecurity.

2. Literature Review
2.1 Artificial Intelligence in Human Resource Management Practices (HRMP)

Artificial Intelligence refers to systems that can think and act like humans (Russel & Norwig, 2010; Haenlein and Kaplan, 2019). Artificial Intellect reveals certain characteristics of human intelligence to computer technology. Philosophy, psychology, biology, mathematics, the fine arts, and language could all benefit from the application of this technology. Because Artificial Intelligence is always evolving, it has a wide range of applications. People will be able to live more comfortably thanks to this new technology, which aims to improve their quality of life, raise their living standards, and open new vistas for humanity. It has the power to address complex challenges quickly and permanently. Unless systems and programs are changed, information and data cannot be lost with AI technology. Information and data entered Artificial Intelligence systems can be easily replicated and distributed to a wide audience over the internet (Bhardwaj, Singh, Kumar, 2020). In addition, Artificial Intelligence does not display the same kinds of erratic behavior as human beings. In general, it exhibits a predictable pattern of activity. (Bader and Kaiser, 2019) argued that algorithms and Artificial Intelligence result in more accurate outcomes when it comes to decision making and this is because they can express judgments more quickly and much accurately than human based on experience and intuition. It begins by collecting information regarding the topic, events, and methods, then assesses the outcomes before proceeding with its operations. In addition, (Xuanbei, 2021) argued the importance of utilizing artificial intelligence to human resource management practices is enhancing recruitment precision. Recruiting the necessary individuals for an organization is the first step in the process of human resource management, as well as a crucial and essential aspect of this process. It is directly related to the enterprise’s future development pattern and direction. However, traditional recruitment situations provide the following challenges. First, there are limited outlets for recruitment.

Companies are unable to quickly acquire individuals who fulfil corporate criteria. This renders it impossible for employees to arrive within the allotted time, thereby extending the recruitment process, increasing time-related expenses, and decreasing the company’s profits. The second is that it is tough to screen resumes with human resources. It is challenging to select the best-matched resume in a short period of time when staffing is restricted. Thirdly, inadequate HR resources make it impossible to screen resumes and conduct interviews simultaneously (Tambe, Cappelli, and Yakubovich, 2019). Moreover, (Rezzani, Caputo, and Cortese, 2021) indicated that the use of artificial intelligence has enhanced the effectiveness of training. Regular education and training of personnel is a necessary and foundation for
the sustainable development of every enterprise, as well as the primary method of investing in human capital to achieve the added value of human capital. However, many businesses lack skilled training instructors and scientific training procedures, resulting in ineffective training. The disparate quality of training institutions will reduce the quality of training if it is outsourced. Because the training institution is unfamiliar with the enterprise’s circumstances, it cannot provide customized training. The use of big data and artificial intelligence will significantly enhance the effectiveness of training. In addition to improving the standardization of performance management, the application of artificial intelligence to human resource management has the additional benefit of enhancing the standardization of performance management.

Currently, the majority of businesses practice performance management, but they lack the enhancement of human performance and contribute to the burden of human resource management. Artificial intelligence can acquire user information to develop their own database, making performance evaluation indicators more data-based and compatible with actual situations. Furthermore, (Gaol, 2021) asserted that the artificial intelligence can be employed in Performance management in gathering data on workers and linked organizations from their input and build strong infrastructure, artificial intelligence also aids in this process by establishing and maintaining standardized tables and performance reports. Previous study revealed that using artificial intelligence tools that enable HR professionals in evaluating possible candidates for a certain position. This might begin with the application screening and continue through post-placement evaluations. Artificial intelligence assists in assessing applicant profiles to determine if they possess the requisite skill set. It also facilitates contact by sending emails or messages to candidates automatically. Also, artificial intelligence develops a comprehensive set of tasks and incentives for the employees that enter the business.

Thus, prospective employees can be selected in a much more expedient manner using artificial intelligence assisted hiring tools. (Vaishnavi, Achwani, 2018.) previous research looked at the benefits of enhancing the employee engagement level that could be achieved to any organization. Through the review of artificial intelligence literature review revealed that artificial intelligence capable of handling the different manual sorting and organization duties that Human Resource workers face daily. Reports for everyday duties can be compiled by artificial intelligence and sent to professionals on the move at a predetermined time when they are in the office. Additionally, For the growth of the personnel and the organization, it is essential to conduct effective training programs. Using artificial intelligence input, training programs for new staff can be redesigned. By utilizing a predictive analytic model, artificial intelligence is able to combine interpretations of psychology and skill areas to develop an effective and individualized training package for employees. In addition, natural language processing tools can enhance training sessions provided by firms employing cost-effective ways.

2.2 Benefits of Artificial intelligence

The rise of digital technologies has created new ways for people to apply for and hire jobs. Companies are now more likely to hire qualified individuals through social media and online recruitment. Using Artificial Intelligence has gained growing attention in a number of areas, including Recruitment, Training, appraisal and rewarding employees.

The traditional Human Resource Management Practices (HRMP) process is more of a speculative analysis than a scientific engagement when it comes to selecting candidates for most positions. Due to the limited number of HR personnel and the numerous applicants that come through the traditional HRMP, the selection process for most positions is more of a qualitative and quantitative analysis. With the help of Artificial Intelligence technology, organizations can now implement a salary forecast model to help predict the salary of their employees (Gong, Y., Zhao, M., Wang, Q. and Lv, Z., 2022) According to (Howard, 2019; Mahmoud et al., 2019), high levels of employee participation, on-the-job effectiveness, and productivity are important factors that an organization can use to measure its performance. Unfortunately, these are typically not easy to assess from the company’s perspective using traditional metrics. With the help of AI, HR administrators can now make better decisions when it comes to assessing the performance of their employees. Moreover, the ability to improve the efficiency of performance appraisal by specifying the appropriate rewards can help motivate employees and improve their performance. For managers, Artificial Intelligence can help them make better decisions by providing them
with more accurate data (Reilly, 2018). For instance, instead of only matching targets at the beginning and end of a given season, Artificial Intelligence can continuously monitor and analyze the data to make the decisions that are required. According to (Semmler & Rose, 2017), Artificial Intelligence could help organizations query their pay and compensation data more effectively and improve the perception of their equity. This could also help boost the performance of their organizations. In the area of training and development Getting the most out of your training is very important to keep up with the latest technological developments. (Tambe et al., 2019) asserted that AI can help in this regard by providing various tasks and services, such as organizing virtual training courses and managing the various tasks related to them. In addition, it can help employees tailor their training according to their individual needs. It is important that employees are equipped with the necessary tools and resources to maximize their professional development.

One of the most effective ways to do this is by using employee databases, which can provide relevant information about their specific expertise. Through the use of AI, organizations can improve their talent retention by monitoring the impact of training on an individual’s performance. This can also help them identify areas of their operations where they can improve their efficiency. In addition, by analyzing data collected from various sources, such as employee traits and performance, AI can help them make informed decisions regarding their employees (Wright & Schultz, 2018).

Through the use of AI, data processing muscle can be acquired through the massive amounts of data collected by big data (Lengnick-Hall, Neely, and Stone, 2018). This process can then be used to improve the efficiency of various managerial tasks. In addition to improving performance, this process can also help in more fitting professional development opportunities for individuals (Margherita, 2021). The increasing power of Artificial Intelligence would require an increase in the capabilities of HR staff to interpret and query its applications. This is because there is a shortage of skilled individuals with the necessary skills to handle the various tasks and workflows associated with its implementation.

2.3 Gamification in Human Resource Management Practices (HRMP)

Gamification is a process that involves the design of game features for non-game contexts. It can be applied to various non-game areas such as business. According to (Deterding et al., 2011) it is the application of game design principles to non-game environments. (Marczewski, 2017) noted that this type of concept can be used to describe the use of game elements in various contexts. Gamification is a concept that refers to the use of various elements and techniques in games to encourage people to solve problems. These include the design techniques, mechanics, and style of the games. Besides being used in games, gamification also refers to the elements that are related to the interaction and reward of the players. Although the term is not synonymous with the use of games, it is still used to describe the multiple elements and mechanics of games. Gamification is a process that involves the use of various game-related components and games outside of the traditional playground to improve the appearance and comfort of everyday tasks. This is usually done in training institutions. Due to the increasing popularity of gamification in the marketing and business sectors, it has gained the attention of academics and practitioners. According to experts, it can be used in various processes, such as employee training. (Ērgle, and Ludviga, 2018) The rise of gamification in various non-gaming domains has attracted the attention of researchers and practitioners (Kupper et al., 2021). The potential of gamification to enhance the quality of life is due to its ability to provide users with engaging and enjoyable experiences while also enabling them to achieve a targeted outcome (Murawski, 2020). The rise of gamification has gained widespread attention in various areas, such as education, employment, and online communities. Some of the major organizations that have used it include Google and L’Oréal (Buil, I., Catalán, S., & Martínez, E. (2020). These companies are also known to use gamified tools for recruiting.

Gamification can help add a bit of fun to everyday tasks, which otherwise can be quite boring. Researchers and practitioners believe that it can be used in various processes, such as employee training. (Callan et al., 2015). According to (Meister, 2015) gamification can be used in various processes, such as recruitment and training. It can help increase employee engagement and motivate them through the experience of competition. Also noted that it can help improve the motivation of employees by increasing their inner motivation. (Hughes, A., & Mccoy, K., 2015). noted that playing games can help employees
improve their behavior. It can allow them to see their organization from a different perspective. This concept is built on the idea that a game system should have a purpose and should combine the hedonic and utilitarian attributes to support behavioral and productivity change. Although Gamification has been around for a long time, the theoretical framework for analyzing and defining gamification is not yet clear. According to (Cardador et al., 2017) gamification can be used to create game elements and behaviors that are designed to motivate and inspire employees. Due to the increasing popularity of gamification in the digital age, it is becoming more prevalent in the field of Human Resource Management. While it was previously used in a non-digital platform, it is now being used in a digital context. (Kurter, 2018) asserted that with the increasing popularity of gamification in the workplace, many organizations are now using it to engage their employees in their learning and development. The goal-oriented culture of many organizations encourages employees to develop their skills and talents in order to compete against their peers. This is also reflected in the perception of achievement. There is only one recruiter company applying gamification in recruitment processes in Egypt (Hire Hunt). Also, (The Egyptian Gazette) applying gamification in training by using game-like structures and features to improve the quality of training. This can be done through the addition of various features such as puzzles and simulations. to motivate and retain the employees. Consequently, using gamification in human resource management helps employees become more engaged in their work by rewarding them for doing so. It also helps them retain the knowledge they're learning. It can also help them improve their productivity and develop their skills. Employees who are given the opportunity to improve their skills are more productive and happier. Gamification can also be used to improve the skills and performance of your employees. It can be beneficial to both the individual and the company. It can help them develop a better understanding of their work and improve their efficiency.

2.4 Characteristics of Gamification in Human Resource Management Practices (HRMP)

Gamification is a process that involves the use of game components that can be categorized as reward systems. These include levels, achievements, and participation points. Shah and Sarangi (2015) indicated that the link between employee engagement and gamification is still in its early stages. The main reason for the popularity of this concept is that it allows workers to have fun while they are at work. In addition (Mollick, and Rothbard, 2013) noted that incorporating games into the work environment could make it more fun and These include points that reflect the status of the employees, challenges that encourage the achievement of goals, and levels that provide a sense of accomplishment. They also suggest that employees can customize their virtual goods to feel valued and included in the company’s culture. Competing against other employees and promoting healthy intra-team comparisons are also some of the features of gamification. Although the positive effects of gamification on employee performance are widely acknowledged, there are still many challenges that can be encountered when implementing it in an HR system. There are a variety of studies and articles that provide a comprehensive overview of these issues (Souza et al. 2020) Although the HR practitioners have been acknowledged for their efforts in developing and implementing gamified HRM systems, they have not been able to provide a comprehensive view of the challenges they face when it comes to engaging their employees. In line with (Maltseva, 2019) there are a lot of studies that focus on the factors that influence the motivation of employees to use gamification. Although it is important to note that the success of a game depends on the players' motivation, it is also important to consider the various factors that influence its acceptance in the workplace. This research aims to provide a comprehensive view of how employees perceive the concept of gamification when it comes to implement it in their workplace.

(Werbach & Hunter, 2012) defined the phases of a good gamification implementation. Defining the goal of a business should be clearly communicated in a way that makes it easy for the readers to understand. This can be done by having the objectives listed in a prioritized order. Delineating the desirable behaviors that the users should expect from the system or game. This can be done by having a clear and consistent explanation of the reasons for gamification. Describing The goal of this exercise is to help players understand the relationship they'll have with the game. This can be done by talking about the things that will motivate them, devising cycles is to encourage the players to continue participating and overcoming the various challenges that they might face. In addition, (Nenadić, 2019) claimed that the
usual feedback, such as how they can improve their motivation, the developers should also consider developing a variety of feedback options that will allow gamers to engage with the activities. Besides the usual feedback, such as how they can improve their motivation, the developers should also consider developing a variety of feedback options that will allow gamers to engage with the activities. The increasing popularity of game elements in non-gaming domains such as education, healthcare, and work has attracted the attention of researchers and practitioners. This is because their potential to provide users with engaging and enjoyable experiences is also beneficial for efficiency. Gamification also enables users to achieve a targeted outcome with high level of efficiency (Walls, 2021). This concept can be used to support the development of effective and efficient work processes. They should also make sure that the proposed gamification solution has the necessary tools to implement it. Gamification should be fun, and it should involve the users willingly participating in the game. Also, it should be done in a way that makes it easy for them to manage and improve the game. To ensure that the project is carried out correctly, it should be equipped with the necessary tools and resources.

2.5 The Relationship between Artificial Intelligence, Gamification and Job insecurity

Artificial intelligence is a technology that enables computers to perform various tasks and functions based on their intelligence. It has gained widespread use in various service sectors due to its ability to improve efficiency. Through the use of algorithms, it can solve human-related problems by analyzing the data collected by the system. It can also provide businesses with unique experiences by analyzing and remembering the preferences and needs of their customers. This technology can also help them improve their customer experience by allowing them to perform various tasks and functions without the need for human interaction. (Koo, Curtis, and Ryan, 2021)

Although gamified systems are not always effective, they can still stimulate and reinforce a user's behavioral disposition by incorporating elements that can help improve their performance. For instance, by incorporating a hall of fame or a leaderboard, game designers can help users reach their goals and improve their overall experience. Although implementing an HR system is a strategic step in attaining the best possible creative outcomes, the gamification of the system has been regarded as a promising innovation.

The potential of an HR system to become an integral part of an organization's strategy is immense. It can help an employee develop a deeper understanding of the organization and its culture. However, there are still many studies that are focused on the various aspects of gamification in an HR system. (Ikhide, Timur, and Ogunmokun, 2022)

Due to the increasing use of Artificial intelligence in all fields, experts and researchers have been warning about the potential negative effects it could have on both the employees and customers (Huang and Rust, 2018). According to (Li et al., 2019), employees' awareness of the potential impact of artificial intelligence and robotic systems on their jobs is significantly influenced by their turnover intention. For instance, in lower-skilled positions, employees are more likely to be affected by the changes brought about by artificial intelligence. The increasing number of jobs that are automated and the concerns about the potential impact of Artificial intelligence on the workforce are likely to trigger a rise in employee anxiety. This is because job insecurity is the main stressor for people who are currently experiencing this environmental change. Besides the number of positions that are available, other factors such as the duration of the position and the salary are also taken into account to determine the stress level of an individual. (Nam, 2019). Being able to manage the perceived job insecurity of employees is very important to ensure that they are able to anticipate their own affective and attitudinal reactions. This can help prevent them from reacting negatively to the organization's actions. According to study conducted by (Schaufleri and Bakker, 2004) employees who are engaged in their work are more likely to provide their customers with excellent service and stay in the organization. This suggests that having a high level of work engagement can help employees develop a positive attitude and improve their performance. Consequently, employees who are experiencing job insecurity can't fully engage in their work due to their negative emotions. This is because they are constantly focused on their performance and are prone to experiencing negative reactions. Having a high level of work engagement is also very important to ensure that employees are able to maintain their turnover intentions.
In line with (Presbitero, and Teng-Calleja, 2022) The perception that Artificial Intelligence is taking over jobs is related to the behavior of people who are engaged in career exploration. This research explores the role of job insecurity in the development of the AI’s perception of taking over jobs. Job insecurity is a type of experience that people have that involves uncertainty about their future job. We believe that experiencing this negative and subjective perception of one’s job can provide a reasonable explanation for the AI’s perception of taking over jobs. The perception that artificial intelligence is more efficient at handling certain tasks can trigger a feeling of insecurity among workers. According to (Rosenblatt and Greenhalgh, 1984), job insecurity can be caused by the perceived threat level. This concept suggests that the higher the threat level, the more insecure the job gets. We believe that this is because the more likely it is that AI will take over jobs, the more insecure the employees are. (Presbitero, and Teng-Calleja, 2022) asserted that job insecurity mediates the relationship between the perception of AI taking over jobs and career exploration behavior. Job insecurity can also affect an employee’s search for other opportunities that are more secure and competent. For instance, it can make an individual feel like they can secure a better job in a company that values their capabilities.

In addition to use Artificial Intelligence to improve employee performance, implementing HR gamification can also help improve not only employee performance but also employees’ job satisfaction. (Kim, S., 2021) argued that Gamification can also help employees develop their self-esteem and confidence, which are factors that can directly affect job satisfaction. It can also help them interact with others and improve their performance.

The literature review also found that there are various limitations when it comes to the research on the use of artificial intelligence in different sectors not only in HR management practices. More studies are needed to investigate the role of Artificial Intelligence in different cultural contexts and sectors. In addition, few studies have addressed the current employees’ perspective on using AI and gamification.

Due to the rapid emergence and evolution of Artificial Intelligence related technologies has highlighted the increasing number of job insecurity among employees. This could be caused by the potential loss of a human’s job, as this could affect their attitude toward their work and their willingness to leave. On the other hand, it is also uncertain whether Artificial Intelligence can help improve the service quality or lead to job loss.

Based on the above discussion, the following hypotheses were formulated:

H1: Employees' Perceptions of using AI and Gamification in HRMP positively influence Employees' job insecurity.

H1.a: Employees' Perceptions of using Artificial Intelligence in HRMP positively influence Employees' job insecurity.

H1.b: Employees' Perceptions of using Gamification in HRMP positively influence Employees' job insecurity.

3. Methodology
3.1 Description of Sample
This research aims to examine Employees’ perceptions of using Artificial Intelligence and Gamification in human resource management practices on Employees’ job insecurity. The research was conducted on (400) Egyptian Human Resource employees in different sectors (Banking, Telecommunication, Education, Retail, Pharmaceutical, IT, Healthcare, Tourism) and located in the Greater Cairo region. They were selected using the non-probability judgmental sampling method; The only inclusion requirement was that responders had to be Egyptian employees.

3.2 Measurements
The researcher used quantitative data collected from the survey were then used to test the objective of the study. The results of the study were then analyzed to determine the effects of using Gamification and Artificial Intelligence in Human Resource Management Practices on employee job insecurity. The data collected was gathered through a structured questionnaire that was composed of four sections. The first section covers the respondents’ demographic information, while the second and third sections cover the research independent variables, which are Artificial Intelligence and Gamification in HR management.
while the fourth section covers the independent variable “employees’ job insecurity, each of the questions had its own score, ranging from 1-5 (1-Strongly disagree, 2- disagree, 3-Neutral, 4- Agree, 5-Strongly agree). The Artificial Intelligence was adapted from the study of (Kambur, and Akar, 2021) who developed 13 items scale. While Gamification scale was Through an online questionnaire, participants were asked to evaluate various statements using a 5-point Likert scale adapted from (Saunders, 2017). and Job insecurity was measured using the scale developed by (Hellgren and Sverke, 2003).

### 3.3 Data analysis

The Statistical Analysis Software SPSS V26 and AMOS V24 were used to manage and simplify data in order to analyze the data collected to achieve the research objective. To measure the independent variable’s effect on the dependent variable, the Multiple Linear Regression Model was used to examine the extent to which the independent variable influences the dependent variable. Discriminant validity, Average Variance Extracted (AVE), Composite Reliability (CR) and Maximum Shared Values were used to test research hypotheses. Moreover, Descriptive statistics, rotated factor loadings and explained variance values were used.

#### 4. Findings/ Results

Table 1. Rotated factor loadings and explained variance values

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<th>Items</th>
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<th>PGAFHRM</th>
<th>JOBINS</th>
<th>Explained variance</th>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AI12</td>
<td>B12</td>
<td>0.543</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AI13</td>
<td>B13</td>
<td>0.517</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GF1</td>
<td>C1</td>
<td>0.559</td>
<td></td>
<td></td>
<td>31.981 %</td>
</tr>
<tr>
<td>GF2</td>
<td>C2</td>
<td>0.454</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GF3</td>
<td>C3</td>
<td>0.479</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GF4</td>
<td>C4</td>
<td>0.670</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GF5</td>
<td>C5</td>
<td>0.534</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GF6</td>
<td>C6</td>
<td>0.625</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GF7</td>
<td>C7</td>
<td>0.606</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JOBINS1</td>
<td>D1</td>
<td>0.577</td>
<td></td>
<td></td>
<td>36.554 %</td>
</tr>
<tr>
<td>JOBINS2</td>
<td>D2</td>
<td>0.626</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JOBINS3</td>
<td>D3</td>
<td>0.653</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JOBINS4</td>
<td>D4</td>
<td>0.591</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JOBINS5</td>
<td>D5</td>
<td>0.572</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total variance explained</td>
<td></td>
<td>96.935%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table (1), factor loadings vary between 0.454 and 0.670. These results show that the factor loadings exceed the minimum limit values. Factor loadings of Perceptions of using Artificial Intelligence in Human Resource Management (PAIHRM) vary between 0.490 and 0.612 while factor loadings of Perceptions of using Gamification in Human Resource Management (PGFHRM) is 0.454 and 0.670. Factor loadings of Job insecurity (JOBINS) is 0.572 and 0.653. moreover, as seen in Table (1), the total variance amount explained by 25 items and four factors is 96.935%. The PAIHRM, PGFHRM and JOBINS account...
for 28.40%, 31.981% and 36.554% of the total variance, respectively. These results show that the 25 items and 3 factors version of the scale has construct validity.

Figure 1. First-order CFA model and standardized factor loadings

The manifest indicators were subjected to CFA and also measured the model fit. There were three main factors, then employed the model included PAIHRM, PGFHRM, and JOBIN as shown in Figure 1. The results of the CFA show that the variables of PAIHRM can be measured from Thirteen observed variables with standardized loadings: λ = 0.50, 0.44, 0.44, 0.47, 0.56, 0.44, 0.46, 0.48, 0.48, 0.49, 0.49 and 0.47, respectively. PGFHRM can be measured from six observed variables with standardized loadings: λ = 0.48, 0.33, 0.41, 0.52, 0.39, 0.50 and 0.54, respectively. JOBIN can be measured from five observed variables with standardized loadings: λ = 0.44, 0.48, 0.48, 0.41 and 0.48, respectively.

Table 2. Convergent and discriminant validity results

<table>
<thead>
<tr>
<th>Scale dimensions</th>
<th>CR</th>
<th>AVE</th>
<th>MSV</th>
<th>MaxR(H)</th>
<th>PAIHRM</th>
<th>PGAHRM</th>
<th>JOBIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAIHRM</td>
<td>0.923</td>
<td>0.502</td>
<td>0.468</td>
<td>0.927</td>
<td>0.708</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGAHRM</td>
<td>0.862</td>
<td>0.513</td>
<td>0.468</td>
<td>0.869</td>
<td>0.684</td>
<td>0.716</td>
<td></td>
</tr>
<tr>
<td>JOBIN</td>
<td>0.850</td>
<td>0.536</td>
<td>0.362</td>
<td>0.868</td>
<td>0.379</td>
<td>0.602</td>
<td>0.732</td>
</tr>
</tbody>
</table>

According to criterion proposed the average variance extracted (AVE) values should be > 0.50, composite reliability (CR) values should be > 0.70, the CR values should be greater than the AVE values, maximum shared values (MSV). Additionally, square root of the AVE should be higher than the correlation values between constructs. The values obtained for CSR and AVE are shown in Table 1. According to the table, AVE values varied between 0.502 and 0.536 while CR values were between 0.85 and 0.92. CR values were greater than AVE values. MSV values ranged from 0.362 to 0.468 and square root of the AVE should be higher than the correlation values between constructs. Based on these results, it could be concluded that the scale of PAIHRM has discriminant validity.

Table 3. Cronbach’s alpha results

<table>
<thead>
<tr>
<th>Scale dimensions</th>
<th>Number of items</th>
<th>Cronbach’s Alpha</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAIHRM</td>
<td>13</td>
<td>0.923641</td>
<td>Accepted</td>
</tr>
<tr>
<td>PGAHRM</td>
<td>7</td>
<td>0.871362</td>
<td>Accepted</td>
</tr>
<tr>
<td>JOBIN</td>
<td>5</td>
<td>0.844707</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

The measurement of the reliability of a data instrument helps the researcher to scale the goodness of the variable of the measurement. The widely used Cronbach coefficient alpha was employed to assess
internal consistency the value of Cronbach’s alpha should be 0.70 or higher. The entire alpha coefficient ranged from 0.84 to 0.92 as shown in the Table 2. Based on the coefficient values the items tested were deemed reliable for this study.

Table 4. Model fit summary

<table>
<thead>
<tr>
<th>Measure</th>
<th>Model fit</th>
<th>Reference index</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2/DF$</td>
<td>1.530</td>
<td>Between 1 and 3</td>
<td>Excellent</td>
</tr>
<tr>
<td>CFI</td>
<td>0.906</td>
<td>&gt; 0.90</td>
<td>Acceptable</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.036</td>
<td>&lt; 0.05</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

These indexes included the ratio of model chi-square to the degrees of freedom ($\chi^2/DF$), the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit index (CFI). To obtain acceptable model fit, Chi-square / df should be between 1 and 3, CFI should be greater than 0.90, RMSEA should be less than 0.08. Table 3 showed the fit indices of the first-order CFA. Fit indices obtained from ML method were calculated as $\chi^2/DF = 1.530$, CFI = 0.906 and RMSEA = 0.036. Based on these results, it could be said that the model has a good fit.

Table 5. Demographic Table for Participants

<table>
<thead>
<tr>
<th>Items</th>
<th>Percentage</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>63.0 %</td>
<td>1.42</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>37.0 %</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20-29</td>
<td>39.9 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30-40</td>
<td>12.7 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41-50</td>
<td>43.4 %</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td>51-60</td>
<td>3.5 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above 60</td>
<td>0.6 %</td>
<td></td>
</tr>
<tr>
<td>Years in Business Life</td>
<td>0-5 year(s)</td>
<td>59.0 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6-10 years</td>
<td>11.0 %</td>
<td>2.49</td>
</tr>
<tr>
<td></td>
<td>11-15 years</td>
<td>8.1 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16-20 years</td>
<td>11.6 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21 years and above</td>
<td>10.4 %</td>
<td></td>
</tr>
<tr>
<td>Usage of AI and Gamification</td>
<td>Yes</td>
<td>41.0 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>37.6 %</td>
<td>1.93</td>
</tr>
<tr>
<td></td>
<td>I don’t know</td>
<td>21.4 %</td>
<td></td>
</tr>
<tr>
<td>AI</td>
<td>I have no knowledge</td>
<td>5.8 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Little</td>
<td>23.7 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>44.5 %</td>
<td>2.93</td>
</tr>
<tr>
<td></td>
<td>Much</td>
<td>19.1 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very much</td>
<td>6.9 %</td>
<td></td>
</tr>
<tr>
<td>Gamification</td>
<td>I have no knowledge</td>
<td>38.2 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Little</td>
<td>27.2 %</td>
<td>2.68</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>26.0 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Much</td>
<td>7.5 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very much</td>
<td>1.2 %</td>
<td></td>
</tr>
</tbody>
</table>
Table 4 showed the respondents' demographic details for the survey conducted. The sample undertaken comprises 400 people. Based on gender, 63% of the samples are males and 37% females. The age of the employees distributed over the age groups 20 – 29 years (39.9 %), 30 – 40 years (12.7%), 41–50 years (43.4 %), 51–60 years (3.5%) and > 60 years (0.6%). The years of business life distributed over the groups 0 – 5 years (59%), 6 – 10 years (11%), 11 – 15 years (8.1%), 16 – 20 years (11.6%) and 21 years and above (10.4%). Based on Usage, 41% of the samples used the AI and Gamification, 37.6% don’t used the AI and perceive that the time spent on training an

ith

ndent variable

PAIHRM

tices and how affect their job

also enable it to respond to the needs of its

uous assessment of its employees. It will a

cce and human resource management practices
,
Pn model is

d above (S

cet in
–
–1481but the JOBIN
[62x78]between Artificial Intelligence and the effectiveness of human resource management practices
[62x102]custome
[62x115]and provide cont
[62x127]HRM functions. It will enable the organization to improve the efficiency of its talent acquisition processes
[62x177]development was excessive.

found that employees and human resource managers woul
[62x202]When

rel
[62x239]Intelligence and Gamification in Human Resource Management Prac
[62x314]5. Discussion

The objective of this research was to analyze the employees' perceptions of using Artificial Intelligence and Gamification in Human Resource Management Practices and how affect their job insecurity and the results revealed that there is strong positive significant relationship between Using both Artificial Intelligence and Gamification on employees' job insecurity. Besides, it was found that using Artificial Intelligence and Gamification has a significant impact in managing Human Resource Management Practices.

This finding is in line with Kambur and Akar (2021) who revealed that there is a positive significant relationship between using Artificial Intelligence and human resource management practices in particular When Artificial Intelligence technology was included in the training and development process, it was found that employees and human resource managers would perceive that the time spent on training and development was excessive.

These are in keeping with Agarwal (2021) who stated that there is a significant relationship between the adoption of Technology and using Artificial Intelligence applications in the field of human resources.

The introduction of Artificial Intelligence and Gamification will have a significant impact on the way HRM functions. It will enable the organization to improve the efficiency of its talent acquisition processes and provide continuous assessment of its employees. It will also enable it to respond to the needs of its customers.

Which is supported by a study done by Niehueser and Boak (2020) who proved a strong relationship between Artificial Intelligence and the effectiveness of human resource management practices. This is

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.882</td>
<td>.138</td>
<td></td>
<td></td>
<td>6.367</td>
<td>.000</td>
</tr>
<tr>
<td>PAIHRM</td>
<td>.301</td>
<td>.266</td>
<td>6.070</td>
<td>.000</td>
<td>91.612</td>
<td>.000</td>
</tr>
<tr>
<td>PGFHRM</td>
<td>.393</td>
<td>.358</td>
<td>6.808</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: job insecurity.

Table 6 showed the results of T-Test there is a statistically significant relationship between the independent variables "PAIHRM", "PGAHRM" and the dependent variable "JOBIN" (P-value < 0.05). The value of the estimated regression coefficient is 0.301 and 0.393 respectively, indicating that the two variables are positively related with JOBINS and the results indicate that the overall regression model is significant ($F = 91.612$, P-value < 0.05).

5. Discussions and Conclusions

The objective of this research was to analyze the employees' perceptions of using Artificial Intelligence and Gamification in Human Resource Management Practices and how affect their job insecurity and the results revealed that there is strong positive significant relationship between Using both Artificial Intelligence and Gamification on employees' job insecurity. Besides, it was found that using Artificial Intelligence and Gamification has a significant impact in managing Human Resource Management Practices.

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Which is supported by a study done by Niehueser and Boak (2020) who proved a strong relationship between Artificial Intelligence and the effectiveness of human resource management practices. This is
expected to shift the work of HRM from reacting to external factors to one that is proactive. This challenge is expected to be solved by developing new skills such as the ability to work in virtual environments and translating machine-provided figures into human ones. Besides these, companies will also need to develop effective communication skills between their machine and human actors. The increasing power of AI in making decisions will also raise questions regarding the level of Job insecurity for employees. Organizations Using Artificial Intelligence in managing HR functions to employees, have to ensure that employees feel secured towards using any kind of technology in their jobs.

To increase the motivation and commitment of employees, as well as improve their trust and efficiency. In addition to being able to use Artificial Intelligence and Gamification in HR Functions, Employees should be taught how to communicate effectively with using any kind of technology in their jobs to guarantee their trust and commitment. This is supported by Prasad, Alexander, and Misra (2019) they revealed that there is a positive relationship between employee engagement and gamification.

The findings of this research showed that employees are more likely to use Artificial Intelligence and Gamification in their workplaces. AI is widely used in organizations to improve their efficiency and productivity. It can help them develop better processes and provide them with greater control over their work. This finding is in contrary with Abdeldayem and Aldulaimi (2020) who declared that Due to the increasing number of women and men in the workforce, it is expected that the use of artificial intelligence will have a negative impact on the management of human resources.

However, there is still a lack of evidence on the effects of these technologies on the workforce. This research contributes to the literature by providing a comprehensive analysis of the various effects of these technologies. also, the research revealed that job insecurity could influence employees to look for other careers due to the increasing presence of Artificial Intelligence in their workplaces. And this is keeping with Krutova, Turja, Koistinen, Melin, and Särkkkoski (2021) who revealed that there is a negative effect on job insecurity and the acceptance of new technologies in the workplace. It also found that the use of gamification and artificial intelligence could contribute to the development of job insecurity, and this is supported by Presbitero and Teng-Calleja (2022) and they revealed that employees with high levels of anxiety seeing that Artificial Intelligence AI is taking over their jobs.

The rise of gamification and Artificial Intelligence in the workplace has raised concerns about the increasing number of jobs that are threatened by the continued integration of these technologies. Moreover, the research explored the perceptions of employees about the use of Artificial Intelligence and Gamification in their workplaces. Artificial Intelligence is a powerful technology that can improve organizational processes and provide greater productivity. However, its effects on the workforce are still poorly understood. Despite the limited research on the subject, this research also provides valuable insight into the effects of these technologies on the HR employees. In addition, this research explored the effects of Artificial Intelligence and gamification on the job insecurity of employees. It was also conducted to analyze the perceptions of employees about their future jobs and the various threats that they face in the workplace. From this perspective, the results of this research recommended that Organizations should focus on improving the employees' skills of using technology and this could be achieved by human resource managers should be able to map out the integration between Artificial Intelligence and the functions of human resource management and how the employees respond to the technology with no fear of losing their jobs.

6. Limitations and direction for future research
Although this research provided valuable insight into the use of Artificial Intelligence and using Gamification in a workplace, to improve HR management practice. The research focused on perceptions of employees about using both Artificial Intelligence and Gamification in HR management practices, Further studies are also needed to analyze the reactions of employees when they encounter Artificial Intelligence technology in various stages of its development. This will allow researchers to gain a better understanding of how the technology affects their perception. Further studies are also needed to examine the link between psychological ownership and job insecurity. There are also various avenues that can be explored to understand the mediating role of phycological ownership in the relationship between using
automation and job insecurity, it is not yet clear if the results were influenced by the types of jobs that were examined. These types of jobs may additionally affect the generalizability of the findings.

This could provide new insight into the effects of Artificial Intelligence on job insecurity and how it can affect the perceptions of workers about it. Doing so would also help employees develop better understanding of how it can affect their job security. Additional studies are also needed to develop a diagnostic tool that will help organizations align their Artificial Intelligence and Gamification strategy with their culture and systems. This tool should also be able to identify areas of concern that need to be resolved in order to enhance the effectiveness of their program. The previous study revealed that employees were more likely to recommend using gamification programs for enhancing engagement. Consequently, A study is also needed to analyze the effects of Gamification on employee engagement. This study should involve conducting a randomized controlled trial. It should additionally include both pre- and post-testing.

Further research could focus on the difference between employees’ perceptions based on their Generation. Due to the radical change in technology, the current generation is able to work with technology in an efficient way than the previous generations. For this reason, a study could measure the perceptions for both Generation Z and Generation X about using Artificial Intelligence applications in workplace.

References
Brownhill, I., 2013. Does gaming have a role to play in employee engagement? Strategic HR review, 12(1), pp. 5-8.


Klasen J. Employees' experiences and perceptions of work gamification (Doctoral dissertation, Pepperdine University).


