



ASSESSMENT OF AUTOMATION IN HUMAN RESOURCE MANAGEMENT IN SELECTED MEDIUM ENTERPRISES: INPUTS FOR DEVELOPING A HUMAN RESOURCE INFORMATION SYSTEM

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Abstract : The rapid digital transformation has reshaped human resource management (HRM), necessitating the adoption of HR automation in medium enterprises. This study assessed the implementation of Human Resource Information System (HRIS) in selected medium enterprises in Quezon City, focusing on its effectiveness, challenges, and employee acceptance. Using the Technology Acceptance Model (TAM) as the theoretical foundation, the study assessed perceived usefulness, impact on HR procedures, and simplicity of use. Data from 300 employees across various medium enterprises provided valuable insights into HR automation adoption. Findings indicate that HR automation significantly improves efficiency, reduces manual errors, and streamlines HR functions such as payroll, recruitment, and performance evaluation. Employees generally recognized the benefits of automation, but challenges such as system reliability issues, technical difficulties, and resistance to change were identified. Statistical analysis revealed that employee perception of HR automation did not significantly vary across different industries, years of operation, or revenue size, suggesting a universal need for structured automation adoption strategies. To address the identified challenges, the study proposes strategic programs, including comprehensive training and development, enhanced feedback mechanisms, and cross-functional evaluation teams to ensure a smooth transition to HR automation. Additionally, customization of automation tools and management collaboration are recommended to optimize the system's effectiveness. In conclusion, while HR automation is a valuable tool for improving HR efficiency in medium enterprises, successful implementation depends on employee readiness, continuous system improvements, and strong organizational support. Future research may investigate the enduring effects of HR automation on employee performance and organizational efficacy.

Keywords: digital transformation, medium enterprises, Human Resource Information System (HRIS), Technology Acceptance Model (TAM), HR automation

INTRODUCTION

In the current competitive company landscape, digital transformation has emerged as a crucial catalyst for organizational efficiency and innovation, significantly affecting Human Resource (HR) departments. The global adoption of HR automation, which involves the use of software and technology to optimize HR processes such as recruitment, payroll, and performance management, is on the rise. This trend is largely driven by the need to reduce operational costs, improve compliance with labor laws, and enhance workforce management (Deloitte, 2021). The traditional HR environment is being transformed by technologies like data analytics, cloud-based HR platforms, and artificial intelligence (AI)-driven recruitment tools, that enable enterprises to swiftly adjust to the evolving demands of a global labor force. The COVID-19 pandemic expedited the implementation of HR automation as organizations shifted to remote labor, fast-tracking their digital initiatives to minimize face-to-face interactions (PwC, 2020). For medium-sized enterprises, this shift is particularly vital, offering a means to stay competitive while operating with lean resources and limited staff.

HR automation enables businesses to optimize their HR operations, ensuring better accuracy, speed, and accessibility of information. Through automated processes, HR departments can reduce the manual workload associated with repetitive tasks like payroll processing, employee onboarding, benefits administration, and time tracking, allowing HR personnel to prioritize strategic initiatives, including employee engagement and talent development (PwC, 2020). This paradigm shift toward automation is essential

for ensuring that businesses remain agile and responsive in an increasingly competitive market. As organizations expand, the complexity of HR management grows, making automation a valuable tool for scaling operations without a corresponding increase in administrative overhead (Deloitte, 2021). In addition, automation can provide HR professionals with data-driven insights, improving decision-making and enabling a more proactive approach to employee management.

In the Philippines, medium enterprises—defined by the Department of Trade and Industry as those with a workforce of 100 to 199 employees—are pivotal in employment and economic development. However, many of these businesses struggle with manual HR processes that are time-consuming and error-prone. Integrating HR automation to streamline their operations, reduce costs, and enhance productivity (Belen et al., 2021). By automating HR functions, medium-sized enterprises can tackle inefficiencies in areas such as recruitment, performance management, and compliance monitoring. Globally, organizations that have implemented HR automation report reductions in operational costs by up to 30%, productivity increases of 25%, and significant improvements in administrative task efficiency (Singh et al., 2022; Deloitte, 2020). Despite these advantages, the implementation of HR automation comes with challenges, including employee resistance, retraining needs, and initial investment costs (Belov & Kravets, 2021). Nevertheless, the long-term benefits of automation—such as enhanced accuracy, streamlined recruitment processes, and valuable data for decision-making—often outweigh these challenges.

NEED OF THE STUDY

The study was conducted due to the increasing necessity for medium enterprises in Quezon City to adapt to HR automation in order to: (1) Improve efficiency and accuracy in HR processes such as payroll, recruitment, and performance evaluation, (2) Reduce manual errors and administrative burdens, allowing HR personnel to focus on strategic functions, (3) Address the challenges of employee resistance, system reliability issues, and technical difficulties that hinder smooth HR automation adoption, (4) Provide insights for business owners, HR practitioners, and policymakers on how HR automation can improve employee engagement, compliance, and operational scalability, (5) Support medium enterprises in staying competitive and adapting to the growing trend of digital transformation, especially in response to market changes and post-pandemic business demands.

In essence, the study is needed to assess the current state of HR automation, identify challenges, and develop strategic recommendations that can serve as inputs for the development of an effective Human Resource Information System (HRIS) for medium enterprises.

Theoretical framework

This study was anchored in the Technology Acceptance Model (TAM), a seminal paradigm published by Davis in 1989 that provided useful insights into the elements driving technology adoption. The model proposed that a person's intention to utilize technology was chiefly influenced by two essential factors: perceived ease of use and perceived usefulness.

Perceived ease of use denotes the degree to which an individual believes that employing a specific system necessitates minimum effort. In the context of HR automation, this meant that if employees found the technology intuitive and straightforward, they were more likely to engage with it effectively. On the other hand, **perceived usefulness** evaluated the extent to which an individual believed that utilizing the technology would improve their job performance. This construct was crucial, as employees were more inclined to adopt technologies that they perceived would help them perform their tasks more efficiently and effectively. In the case of HR automation, when employees saw a direct link between using the system and improvements in their work, they were more likely to embrace it as a valuable tool.

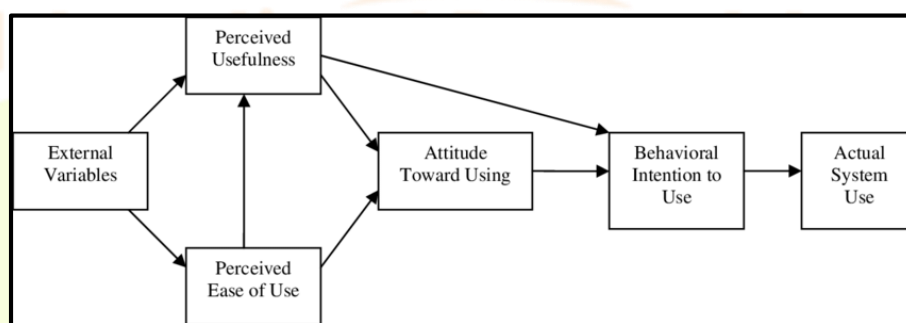


Figure 1.
Technology Acceptance Model

As illustrated in Figure 1. Technology Acceptance Model, the interplay between perceived ease of use and perceived usefulness created a foundation for understanding technology adoption in the context of HR automation. The relationship between these two constructs was cyclical; as employees found the system easier to use, their perception of its usefulness could also improve, creating a positive feedback loop that encouraged further engagement with the technology. This dynamic was particularly pertinent in medium enterprises located in Quezon City, where the successful integration of HR automation could streamline operational processes, enhance productivity, and ultimately contribute to improved organizational outcomes.

Moreover, the model emphasized that management played a crucial role in fostering a supportive technological environment. By providing adequate training, resources, and ongoing support, organizations could enhance employees' perceptions of ease of use and usefulness. Consequently, this study aimed to explore how these constructs influenced employee perceptions and acceptance of HR automation, offering insights that could help medium enterprises strategically implement HR technologies. Understanding these factors allowed management to develop tailored strategies to improve employee acceptance, thus maximizing the benefits of HR automation within their organizations.

METHODOLOGY

This methodology section provides a complete overview of the research design, the subjects and study sites, the research instrument, the processes for data collection, the ethical issues, and the statistical treatment that was utilized for the research study.

Research Design

This study employed a descriptive research design, defined as a type of quantitative research that sought to systematically describe a phenomenon, often through surveys or questionnaires, without manipulating any variables (Creswell, 2014). Descriptive Research was particularly useful for gathering insights into the characteristics and opinions of a specific population, making it a suitable choice for assessing human resource management automation in selected medium enterprises. By utilizing this design, the study aimed to capture a comprehensive profile of the demographic characteristics of the enterprises and the employees' perceptions of HR automation.

In this context, descriptive research allowed for a detailed exploration of variables such as industry type, number of employees, years in operation, and annual revenue range, as well as employees' views on perceived ease of use, perceived usefulness, user acceptance, and overall satisfaction with human resource management automation systems. The acquired data were statistically analyzed to discern patterns and correlations among these factors. According to Creswell (2014), this design provided a clear framework for understanding the dynamics at play in the subject matter, offering valuable insights that could inform the development of strategic personnel information systems.

The justification for using a descriptive research design lies in its ability to provide a structured and comprehensive understanding of the current state of human resource management automation in medium enterprises in Quezon City. This design was particularly appropriate as it allowed for the collection of both quantitative and qualitative data, facilitating a nuanced understanding of employee perceptions and the context of HR automation. By focusing on the 'what' rather than the 'why,' the study aimed to produce actionable insights that could enhance the adoption and effectiveness of human resource management automation systems in medium enterprises.

Population and Sample

This study focused on medium enterprises located in District IV of Quezon City, with a total of 512 identified establishments based on data provided by the Quezon City Business Permits and Licensing Department. The target population consisted of three hundred (300) randomly selected medium enterprises, classified under the Philippine government's definition of medium enterprises. This includes industries like manufacturing, retail, services, and information technology. The respondents for the survey primarily included employees from different levels within the organizational hierarchy, such as managers, HR personnel, and operational staff.

Data and Sources of Data

Data

The study utilized primary data gathered from:

- 300 randomly selected employees from selected medium enterprises in District IV, Quezon City.
- Data were collected through survey questionnaires (both Google Forms and printed copies).
- The survey focused on four key variables:
 - Perceived Ease of Use
 - Perceived Usefulness
 - User Acceptance
 - Overall Satisfaction
- Demographic profiles of respondents (industry type, number of employees, years of operation, and annual revenue) were also included.

Sources of Data

- Primary source:
Employees of selected medium enterprises in District IV, Quezon City.
- Secondary source:
Quezon City Business Permits and Licensing Department (BPLD) as of Dec2023, which provided the database of 512 identified medium enterprises.

Research Instrument

The instrument used was an adapted and self-made questionnaire designed to assess employee perceptions of human resource management automation within selected medium enterprises in Quezon City. This questionnaire consisted of various sections, including demographic information and dimensions of employee perceptions related to HR automation. It incorporated James Lewis's adaptive questionnaire, complemented by a custom-designed questionnaire specifically tailored to align with its framework. Each section included ten statements reflecting key variables: the demographic profile gathered information on respondents' industry type, number of employees in their organization, years in operation, and annual revenue range. Perceived ease of use measured how easy employees found it to use HR automation tools, while perceived usefulness evaluated their beliefs about the benefits and effectiveness of HR automation in their work processes.

Additionally, the questionnaire assessed user acceptance, which gauged employees' willingness to adopt HR automation in their daily tasks, and overall satisfaction, which captured their general satisfaction level with the HR automation systems in place.

To ensure the validity of the questionnaire, it was reviewed by three experts in human resource management and organizational behavior, incorporating their feedback to refine the instrument. A dry run of the survey was conducted with a small group of employees from a medium enterprise not included in the main study, allowing for adjustments based on their responses.

The data were scored on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree," facilitating quantitative analysis of employee perceptions regarding HR automation. Ethical considerations encompassed the acquisition of informed consent, the assurance of response confidentiality, and the provision for participants to withdraw from the study at any point without facing penalties. This systematic approach enabled meaningful conclusions to be drawn about the impact of human resource management automation in the selected medium enterprises.

Statistical Treatment

The following statistical tools were used in this study:

- Frequency and Percentage. This was used to determine the profile of the selected medium enterprises in terms of industry type, number of employees, years in operation, and annual revenue range.
- Mean. This was used to assess employee perceptions of HR automation with regard to perceived ease of use, perceived usefulness, user acceptance, and overall satisfaction.
- One-way Analysis of Variance (ANOVA): This was used to determine the significant differences in employee perceptions of HR automation when grouped according to the profile of the respondents.
- Chi-Square Test: Employed to evaluate the relationship between demographic profiles (industry type, number of employees, years of operation, and annual revenue range) and employee perceptions of HR automation.

RESULTS AND DISCUSSION

The study gathered data from 300 employees of selected medium enterprises in District IV, Quezon City to assess their perceptions of HR automation in terms of Perceived Ease of Use, Perceived Usefulness, User Acceptance, and Overall Satisfaction.

Profile of the Respondents:

The majority of respondents were from enterprises with 101–250 employees (37.3%) and 251–500 employees (33.7%), highlighting the study's focus on larger medium enterprises. The most represented industries were Information Technology (29.7%) and Retail (25.3%), reflecting sectors that are rapidly adapting to digital systems. Most companies had been operating for more than 10 years (38%), and 34.3% of them reported annual revenues between Php 10M and Php 50M, showing that well-established and financially capable businesses are adopting HR automation.

Perceive Ease of Use:

The respondents agreed (weighted mean of 4.09) that HR automation systems are easy to use and help enhance productivity. The highest-rated item was *"I believe that HR automation will benefit my organization in the long run"* (4.56), indicating strong confidence in the system's long-term contribution to organizational growth. Additionally, employees acknowledged that HR automation reduces time spent on administrative tasks and provides useful reports for decision-making.

Perceived Usefulness:

Respondents agreed (weighted mean of 3.75) that HR automation systems are useful in carrying out tasks more efficiently. The statement *"I can quickly access the features I need in the HR automation system"* (4.00) scored the highest, showing that employees appreciate user-friendly and accessible systems. Employees also expressed confidence in their ability to troubleshoot and navigate the system.

User Acceptance:

The respondents showed high acceptance of HR automation (weighted mean of 4.03). The highest-rated item, *"I am willing to continue using HR automation systems in the future"* (4.29), reflects their readiness for sustained use. Employees also indicated that they are confident in using the system and are likely to encourage others to adopt it as well.

Overall Satisfaction:

The respondents expressed overall satisfaction with the HR automation systems (weighted mean of 4.11). The highest mean score, *"I am satisfied with how HR automation improves HR services in the company"* (4.32), highlights that employees recognize its positive impact on HR operations.

ANOVA Results:

The ANOVA tests revealed that there are no significant differences in employee perceptions of HR automation when grouped according to industry type, number of employees, years in operation, or annual revenue. This suggests that employees across different industries and organizational profiles perceive HR automation similarly, regardless of the size or financial capacity of their organizations.

Chi-square Results:

The Chi-square test confirmed that there is no significant relationship between the demographic profiles of enterprises (industry type, company size, years in operation, and revenue) and employees' perceptions of HR automation. This means that

employee perceptions are not dependent on these demographic factors, further supporting the idea that the benefits and experiences of HR automation are consistent across different business types.

The findings show that employees across medium enterprises in Quezon City generally support and are satisfied with HR automation. The technology is perceived as useful, easy to use, and beneficial in improving HR processes such as payroll, recruitment, and performance management. The absence of significant differences and relationships across demographics emphasizes that HR automation is universally recognized as an essential tool, regardless of the company's size, industry, or financial standing. The results suggest that companies should continue to invest in HR automation and address minor challenges like system reliability and technical support. Training programs, employee involvement, and continuous system improvements will further strengthen the adoption and success of HRIS across medium enterprises.

CONCLUSIONS

This study highlights the significant potential of human resource management (HRM) automation in enhancing operational efficiency and employee engagement within medium enterprises in the Philippines. The findings indicate that employees perceive HR automation as beneficial and user-friendly, with high levels of user acceptance and overall satisfaction. While demographic factors such as industry type and employee count did not significantly influence perceptions of HR automation, certain dimensions like Perceived Ease of Use and User Acceptance exhibited notable variations, suggesting that tailored approaches may be necessary to address diverse organizational contexts.

The implications of this study are profound. By demonstrating the positive impact of HR automation, the research encourages medium enterprises to invest in and adopt these technologies as a means of fostering a more effective HR function. Organizations can expect improved operational efficiency, better employee engagement, and enhanced satisfaction as a result of integrating HR automation into their processes. Moreover, the findings promise that with the right support mechanisms in place, such as comprehensive training and regular feedback, medium enterprises can effectively overcome challenges related to system reliability and user training.

To maximize the effectiveness of HR automation, it is essential to develop robust action plans that include these strategies, alongside clear Key Performance Indicators (KPIs) to measure success. By fostering a culture of innovation and technological adaptability, medium enterprises can create a sustainable competitive advantage in an increasingly digital landscape.

As organizations continue to navigate this shift, this research contributes valuable insights into the role of HR automation in improving human resource practices. Future studies could explore the long-term impacts of these systems on employee performance and organizational outcomes, providing further evidence to guide HR professionals and policymakers in optimizing the use of digital technologies in HR management.

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