Factors Impacting Adoption of Electronic HRM in Public Sector Organizations: Case Study of Hudury Mobile Attendance Application in Ministry of Education in Saudi Arabia

Yousef Alduraywish

Imam Mohammad Ibn Saud Islamic University (IMSIU), College of Computer and Information Sciences, Information Systems department, Riyadh, Saudi Arabia
Corresponding Author: yalduraywish@imamu.edu.sa

Abstract

This study investigates the factors influencing the adoption of the Hudury electronic attendance system among employees of the Ministry of Education (MOE) in Saudi Arabia. Using the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), this research examines the impact of perceived ease of use (PEOU), perceived usefulness (PU), trust, security, attitude, and behavioral intentions on actual system usage. A non-probability sampling technique was employed to collect 225 responses from employees across three MOE departments through an online survey. Statistical analysis revealed that PEOU, PU, security, and attitude significantly and positively influence the adoption of Hudury. However, while trust and behavioral intention also have a positive impact, their effects on system adoption were found to be statistically insignificant. These findings highlight the importance of addressing trust deficits by conducting training sessions on Hudury's efficacy to enhance employees' behavioral intentions toward its use. The study is limited by its non-probability sampling method, which may affect the generalizability of the findings to the broader MOE workforce.

Keywords: Perceived usefulness, electronic attendance system, perceived usefulness, employee trust, behavioural intention.

1. INTRODUCTION

The rapid digital transformation across industries has significantly reshaped human resource management (HRM) [1]. This shift has led to the emergence of electronic human resource management (EHRM), which involves the digitalization of HR services through human resource information systems (HRIS) [2]. By automating HR functions, EHRM enhances efficiency, streamlines administrative processes, and reduces operational costs [3]. Additionally, EHRM offers environmental, social, and economic benefits, such as minimizing paper dependency, improving communication channels, and increasing employee engagement through self-service HR tools [4],[5].

The Hudury application is an Internet of Things (IoT)-based, unimodal electronic attendance system that tracks employee attendance through facial, voice, or fingerprint recognition. Available on both iOS and Android, Hudury simplifies attendance tracking by requiring only an employee's smartphone. Beyond attendance management, it offers additional features, such as vacation planning and real-time employee data access, contributing to a more efficient and transparent HR system [6]. Despite its widespread availability, adoption remains limited among employees at the Ministry of Education (MOE) in Saudi Arabia, suggesting underlying behavioral and organizational barriers that need to be examined.

Previous studies on EHRM adoption have largely focused on developed economies and private sector organizations, with limited research on public sector institutions in emerging economies [7]. Unlike private enterprises, where digital transformation is often driven by competitive market forces, public institutions face unique challenges, including bureaucratic resistance, security concerns, and employees' fear of job displacement due to automation [8],[9]. While theoretical models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have identified key behavioral factors influencing technology adoption, empirical studies on public sector employees' perceptions of EHRM adoption remain scarce, particularly in emerging markets [10].

EHRM tools, such as the Hudury mobile attendance application, play a crucial role in streamlining HR operations, improving efficiency, and ensuring accurate employee attendance tracking in public institutions. Despite its potential, adoption remains low at the MOE, with many employees continuing to rely on traditional manual attendance systems. This raises critical questions about the behavioral and organizational factors affecting the adoption of Hudury in Saudi Arabia's public sector.

Existing research on EHRM implementation in Saudi Arabia has primarily examined HR functions such as recruitment, digital HRM readiness, and financial benefits [11], [12], [13]. For instance, Abdullah et al. [14] explored electronic attendance systems in the Saudi healthcare sector, focusing on financial and operational advantages but neglecting employee behavioral factors. However, financial benefits alone are insufficient if employees do not actively adopt the system. Understanding the behavioral intentions and organizational barriers affecting Hudury's adoption among MOE employees is essential for ensuring the success of digital transformation efforts in Saudi Arabia's public sector HRM landscape.

2. RELATED WORKS
2.1 Electronic Human Resource Management (EHRM) and Its Categorization
Electronic Human Resource Management (EHRM) refers to the integration of technology into HR processes, facilitating workforce planning,

recruitment, performance evaluation, payroll management, and employee engagement [15]. Amoako et al. [9]classify EHRM into three key dimensions: (1) Relational EHRM: Focuses on aligning organizational and employee goals through real-time communication and data exchange, thereby increasing employee engagement [16], (2) Transformational EHRM: Involves long-term strategic HR functions, such as knowledge management, innovation facilitation, and change management [17], and (3) Operational EHRM: Automates administrative HR tasks, such as payroll and attendance tracking, improving HR efficiency and minimizing errors [17].

The Hudury mobile attendance system falls under operational EHRM, as it streamlines attendance monitoring and employee record-keeping. Rukhiran et al. [18] classify electronic attendance systems into two types: (1) Unimodal: Uses a single authentication method, such as facial recognition, fingerprint scanning, or voice recognition, and (2) Multimodal: Combines multiple authentication techniques for enhanced accuracy.

Hudury employs a unimodal approach, leveraging IoT-based authentication (facial, voice, or fingerprint recognition) to track employee attendance via a mobile application available on iOS and Android [19]. Additionally, the app offers self-service features, such as leave applications, vacation planning, and work schedule tracking, making it a comprehensive workforce management tool.

2.2 Challenges in EHRM Adoption

Despite its benefits, EHRM adoption remains a significant challenge. Research indicates that 70% of digital HRM initiatives fail due to employee resistance and behavioural barriers [20]. Amoako et al. [9] argue that for EHRM to improve HR productivity, employees must accept and utilize it. Several factors hinder adoption, including: (1) Perceived ease of use (PEOU): Employees may find the system complex or difficult to navigate, reducing adoption willingness, (2) Perceived usefulness (PU): If employees do not perceive a tangible improvement in efficiency, they may resist adoption, (3) Job insecurity concerns: Employees may fear that automation will replace their roles, leading to job displacement [21], and (4) Privacy and security risks: Employees may distrust biometric attendance systems due to data security and privacy concerns [22].

Additionally, strict electronic monitoring can contribute to job stress, as employees worry that lateness may lead to penalties or salary deductions [23]. Such concerns highlight the importance of addressing behavioural attitudes toward adopting electronic attendance systems [7].

2.3 Theoretical Perspectives on EHRM Adoption

Several theoretical models have been used to analyse EHRM adoption, including: (1) Resource-Based View (RBV): Assesses how EHRM enhances organizational capabilities [24], (2) Contingency Theory: Examines how organizational conditions influence technology adoption [25], (3) Innovation Diffusion Theory: Explores how HRM innovations spread within

organizations [26], and (4) Technology-Organizational-Environmental (TOE) Model: Evaluates how internal and external factors impact adoption [27].

This study, however, employs the Technology Acceptance Model (TAM)[28], which is widely used in HR technology adoption research [18],[9],[21]. TAM posits that two primary factors influence technology acceptance: (1) Perceived Ease of Use (PEOU): If employees find Hudury user-friendly, they are more likely to adopt it, and (2) Perceived Usefulness (PU): If employees believe Hudury improves efficiency, they are more inclined to use it.

2.4 Extension of TAM: Biometric Technology Acceptance Model (BioTAM)

Since Hudury relies on biometric authentication, this study extends TAM using the Biometric Technology Acceptance Model (BioTAM) [29]. BioTAM introduces two additional factors that influence adoption: (1) Trust: Employees must believe that their biometric data is securely managed to encourage adoption, and (2) Security Perception: If employees perceive a high level of data security, they are more willing to adopt the system.

Research shows that employees often view biometric attendance systems as a privacy risk, fearing unauthorized access or surveillance [29]. BioTAM provides organizations with a structured approach to mitigate these concerns and increase user acceptance.

3. ORIGINALITY

This study addresses a critical research gap by investigating public sector employees' behavioural intentions This study addresses a critical research gap by investigating the behavioral intentions of public sector employees toward EHRM adoption in an emerging economy. While prior studies have predominantly focused on financial and operational impacts or private-sector HR transformation, this research examines user perceptions, organizational barriers, and cultural influences on technology acceptance. This study contributes to the literature in the following ways: (1) Theoretical Advancement: Expanding the TAM and UTAUT frameworks by incorporating context-specific factors influencing EHRM adoption in public institutions, (2) Practical Implications: Providing insights for policymakers to enhance digital transformation efforts in Saudi Arabia's public sector under Vision 2030, (3) Bridging the Literature Gap: Offering empirical evidence on EHRM adoption in government institutions, where digital transformation efforts often face bureaucratic and cultural resistance, and (4) Unique Focus on IoT-Based Attendance Systems: Unlike previous research, this study specifically examines Hudury as an IoT-based attendance system, considering its biometric recognition features (facial, voice, and fingerprint recognition) and the role of mobile-based HR applications in workforce management.

By identifying key behavioral determinants, this study will aid in designing more effective strategies to enhance EHRM adoption in Saudi Arabia's public sector.

4. SYSTEM DESIGN

4.1 Hypothisis Development

To examine the behavioural factors influencing the adoption of the Hudury application at MOE, this study tests the following hypotheses: H1: Perceived Ease of Use (PEOU) positively impacts behavioural intention to adopt Hudury, H2: Perceived Usefulness (PU) positively impacts behavioural intention to adopt Hudury, H3: Trust positively impacts behavioural intention to adopt Hudury, H4: Security perception positively impacts adoption of Hudury, and H5: Behavioural intention positively impacts actual use of Hudury.

By integrating TAM and BioTAM, this study offers a comprehensive framework to assess behavioural challenges and motivators influencing Hudury adoption in Saudi Arabia's public education sector.

4.2 Research Methodology

This study adopts a quantitative research design to investigate factors influencing behavioral intention and actual use of the Hudury application. Quantitative methods are widely used in technology adoption studies due to their ability to provide empirical, generalizable insights [21],[9],[18]. To collect primary data, a survey questionnaire was chosen as the most suitable method [30]. Questionnaires are effective in gathering perceptions and opinions on a specific phenomenon [31], ensuring structured and measurable responses.

4.3 Survey Design and Data Collection

The survey questionnaire was designed in a closed-ended, five-point Likert scale format, allowing participants to express their level of agreement with various statements. To ensure content validity and reliability, the questionnaire was adapted from previous validated research instruments [32]. It was distributed via secure e-Forms to targeted employees at the Ministry of Education (MOE), Saudi Arabia.

The questionnaire consists of eight sections: (1) Demographic Information: Collects participant details such as age, gender, professional designation, years of service, and educational background, (2) Perceived Ease of Use (PEOU): Assesses the user-friendliness of Hudury, (3) Perceived Usefulness (PU): Measures employee perceptions of Hudury's effectiveness, (4) Trust: Evaluates employee confidence in biometric technology, (5) Security Perception: Examines concerns about data privacy and security, (6) Attitude: Captures employee disposition toward adopting Hudury. (7) Behavioural Intention: Measures likelihood of adoption, and (8) Actual Use: Determines the real-world usage of the system.

4.4 Sampling Method and Target Population

This study employs a non-probability purposive sampling technique to select employees from three MOE departments: (1) Human Resources, (2) Finance, and (3) Deputy of General Education.

Approximately 700 employees work in these departments. Given the large population size, achieving a 100% response rate is impractical. To ensure statistical validity, a sample size of 278 participants was determined using a 5% margin of error. To enhance comprehension, the survey was translated into Arabic.

4.5 Reliability, Validity, and Data Analysis

To test the internal reliability of the questionnaire, this study employs Cronbach's Alpha, a widely used metric for measuring scale reliability [33]. Additionally, descriptive statistics will be used to present demographic data, while Pearson correlation analysis will test the research hypotheses. Pearson correlation is a commonly applied method in technology adoption studies to determine relationships between behavioral factors and technology use [21].

4.6 Ethical Considerations

This study adheres to the ethical guidelines of MOE and Imam Mohammed Bin Saud Islamic University, Saudi Arabia. Ethical approval was obtained from the MOE and the university's ethics committee. To protect participants' rights and confidentiality, an informed consent form was provided, outlining the study's purpose, participant rights, and obligations [34].

5. EXPERIMENT AND ANALYSIS
5.1 Research result
5.1.1 Reliability Test

To ensure the reliability of the measurement scale, a Cronbach's Alpha test was conducted. Table 1 presents the case processing summary and reliability statistics for the independent and dependent variables. The results demonstrate a high internal consistency, with a Cronbach's Alpha value of 0.907, indicating excellent reliability [35]. This suggests that all seven items in the scale are closely related and effectively measure a cohesive underlying construct.

Furthermore, all 225 responses were valid and complete, with no missing data. This is reflected in the case processing summary, which reports 0 excluded cases. The absence of missing data is attributed to the structured nature of the online survey, which required participants to answer all items before submission. This approach ensured data completeness and validity, thereby enhancing the robustness of the reliability analysis.

Table 1. Reliability test results

	N	%
Valid	225	100.0
Excluded	0	.0
Total	225	100.0

Listwise deletion based on all variables in the procedure is listed on Table 2.

Table 2. Reliability test results

Cronbach's Alpha	N of Items
.907	7

The Cronbach's Alpha value of 0.907 falls within the "excellent" range (above 0.9), suggesting that the survey items exhibit high reliability and internal consistency [36]. This strong reliability ensures that the measured constructs are stable and dependable for further analysis.

5.1.2 Descriptive statistics

This research collected 225 valid responses from employees across three departments in the Ministry of Education (MOE): Human Resources, Finance, and the Deputy of General Education. The data collection period lasted three weeks, and one incomplete response was removed to ensure data integrity. The demographic statistics include gender, age, professional designation, years of service, and educational background, which are analysed in relation to the study's objective aimed at identifying factors influencing employees' behavioral intentions to adopt Hudury.

Table 3 demonstrate gender distribution in the sample which shows that respondents almost evenly split, with 50.7% male and 49.3% female participants among 225 respondents. This balance enhances the study's representativeness and minimizes gender-related biases in analysing factors influencing Hudury adoption.

Table 3. Gender descriptive statistics

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	114	50.7	50.7	50.7
Female	111	49.3	49.3	100.0
Total	225	100.0	100.0	

Table 4 indicates that 67.6% of respondents are above 40 years old, while only 8.0% are between 25-30 years old. Given that older employees may have different technology adoption behaviours compared to younger counterparts, this age-related perspective is crucial in understanding Hudury's adoption barriers and facilitators.

Table 4. Descriptive statistics of age

	Frequency	Percent	Valid Percent	Cumulative Percent
25- less than 30 Years	18	8.0	8.0	8.0
35- less than 40 Years	55	24.4	24.4	32.4
More than 40 Years	152	67.6	67.6	100.0
Total	225	100.0	100.0	

Table 5 shows that 69.3% of respondents are employees, followed by 24.9% supervisors and 5.8% managers. This workforce hierarchy suggests that insights are primarily drawn from employees and supervisors, whose attitudes may significantly impact overall adoption rates.

Table 5. Descriptive statistics of professional designation

	Frequency	Percent	Valid Percent	Cumulative Percent
Employee	156	69.3	69.3	69.3
Supervisor	56	24.9	24.9	94.2
Manager	13	5.8	5.8	100.0
Total	225	100.0	100.0	

Table 6 highlights that 96% of respondents have over five years of service, indicating that the majority of participants are experienced employees. Longer tenure might influence Hudury adoption, as more experienced employees may be accustomed to traditional attendance systems and hesitant to switch.

Table 6. Descriptive statistics of years of service

	Frequency	Percent	Valid Percent	Cumulative Percent
0-2 years	0	0	0	0.0
3-4 years	0	0	0	0.0
5-6 years	9	4.0	4.0	4.0
7-8 years	216	96.0	96.0	100.0
9+ years	0	0	0	0.0
Total	225	100.0	100.0	

Table 7 demonstrates a diverse educational background, with 34.2% having higher education levels (category 5) and 29.8% in the moderate category (category 3). Education level could impact technology adoption, with higher-educated employees potentially being more receptive to using Hudury.

Table 7. Descriptive statistics of educational background

	Frequency	Percent	Valid Percent	Cumulative Percent
1	18	8.0	8.0	8.0
2	36	16.0	16.0	24.0
3	67	29.8	29.8	53.8
4	9	4.0	4.0	57.8
5	77	34.2	34.2	92.0
6	18	8.0	8.0	100.0
Total	225	100.0	100.0	

The correlation analysis reveals key relationships between various factors influencing the adoption of the Hudury application at the Ministry of Education (MOE). The strongest predictor of actual system use (ASU) is perceived ease of use (PEOU) ($r = 0.95$, $p < 0.001$), suggesting that employees are significantly more likely to adopt the system if they find it simple and intuitive to operate. Security ($r = 0.81$, $p < 0.001$) and attitude ($r = 0.83$, $p < 0.001$) also exhibit strong correlations with ASU, emphasizing that employees' concerns about data security and their overall perception of the system play crucial roles in adoption. Perceived usefulness (PU) ($r = 0.67$, $p < 0.001$), while

still positively correlated, has a comparatively lower influence, implying that ease of use and security are stronger determinants of adoption than perceived benefits. Trust (r = 0.56, p < 0.001) also plays a role, though its impact is not as pronounced as security and ease of use. Notably, behavioral intention (BI) (r = 0.20, p = 0.00) has the weakest correlation with ASU, indicating that while employees may express intent to use the system, their actual adoption behaviour is influenced more by practical factors such as usability, security, and attitude rather than intention alone. These findings highlight the importance of addressing usability concerns, reinforcing security measures, and fostering positive attitudes through training and awareness campaigns to enhance system adoption

5.2 DISCUSSION

The correlation results presented in Table 8 provide key insights into the adoption of the Hudury application at the Ministry of Education (MOE), with perceived ease of use (PEOU) emerging as the most significant predictor of actual system use (ASU) (r = 0.95, p < 0.001). This finding underscores the critical role of system usability in driving employee adoption. Employees who find the system intuitive and user-friendly are significantly more likely to incorporate it into their daily work routines. Security (r = 0.81, p < 0.001) and attitude (r = 0.83, p < 0.001) also strongly influence actual usage, suggesting that both perceived safety and a positive outlook toward Hudury contribute to its acceptance.

While perceived usefulness (PU) (r = 0.67, p < 0.001) shows a moderate impact on ASU, its influence is less pronounced than that of PEOU, security, and attitude. This suggests that while employees recognize Hudury's functional benefits, their willingness to adopt it depends more on its ease of use and security. These findings align with previous research on technology adoption, such as Said et al. [21], which demonstrated that employees were more likely to use electronic HRM systems when they perceived them as easy to use and beneficial. Similarly, Rukhiran et al. [18] found that security and trust significantly influenced biometric attendance system adoption, reinforcing the importance of addressing privacy and data protection concerns.

Interestingly, trust (r = 0.56, p < 0.001) and behavioral intention (BI) (r = 0.20, p = 0.00) show weaker correlations with ASU. While trust in the system contributes to adoption, its impact is less significant than other factors, indicating that employees may prioritize usability and security over trust alone. This is consistent with previous research by Nathan [37], who found that trust plays a significant role in e-commerce adoption in Arab countries, but additional factors such as system transparency and data security influence actual adoption. Similarly, the weak relationship between BI and ASU suggests that while employees may express intent to use Hudury, external barriers such as organizational culture, resistance to change, and concerns about biometric data privacy may hinder actual usage [38].

Table 8. Correlation analysis

		PEOU	PU	Trust	Security	Attitude	BI	ASU
PEOU	Pearson Correlation	1.00	.74**	.50**	.77**	.84**	.13*	.95**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001	.05	<.001
	N	225	225	225	225	225	225	225
PU	Pearson Correlation	.74**	1.00	.59**	.62**	.75**	.38**	.67**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001	<.001	<.001
	N	225	225	225	225	225	225	225
Trust	Pearson Correlation	.50**	.59**	1.00	.85**	.55**	.74**	.56**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001	<.001	<.001
	N	225	225	225	225	225	225	225
Security	Pearson Correlation	.77**	.62**	.85**	1.00	.76**	.51**	.81**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001	<.001	<.001
	N	225	225	225	225	225	225	225
Attitude	Pearson Correlation	.84**	.75**	.55**	.76**	1.00	.12	.83**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001		.07	<.001
	N	225	225	225	225	225	225	225
BI	Pearson Correlation	.13*	.38**	.74**	.51**	.12	1.00	.20**
	Sig. (2-tailed)	.05	<.001	<.001	<.001	.07		.00
	N	225	225	225	225	225	225	225
ASU	Pearson Correlation	.95**	.67**	.56**	.81**	.83**	.20**	1.00
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	.00	
	N	225	225	225	225	225	225	225

The study also highlights a potential cultural dimension influencing adoption. Drawing from Hofstede's uncertainty avoidance framework,

employees in high uncertainty-avoidance cultures tend to be more cautious when adopting new technologies [39],[40]. In the context of the MOE, employees may hesitate to fully embrace Hudury due to concerns over data misuse, privacy violations, or system errors in attendance tracking. This further reinforces the need for transparent communication, clear data protection policies, and training sessions that build employee confidence in the system's reliability.

An important factor influencing Hudury adoption is Saudi Arabia's Vision 2030, which emphasizes digital transformation and modernization of government services. The Saudi Vision 2030 initiative seeks to enhance efficiency, transparency, and accountability in the public sector by integrating advanced digital technologies, including biometric and AI-driven attendance systems [41] . The push for a paperless and automated government aligns with the adoption of Hudury, reinforcing the government's commitment to leveraging technology for operational improvements.

The findings of this study align with broader trends in public sector digitalization, where governments worldwide are implementing EHRM systems to enhance employee productivity and service efficiency. However, resistance to such technologies often stems from privacy concerns and cultural factors. Previous studies suggest that organizations implementing clear data protection policies, employee awareness programs, and change management strategies can overcome these barriers more effectively.

In the case of MOE, the Saudi government's strong emphasis on digital transformation through Vision 2030 can act as a catalyst for adoption, helping alleviate concerns about Hudury by reinforcing its alignment with national strategic objectives. This suggests that policy-driven mandates and top-down government support could play a critical role in enhancing employee confidence and trust in the system.

Thus, the integration of Hudury into MOE's operational framework is not just an isolated technological shift but a reflection of a broader national transformation strategy. By leveraging government digital policies, organizations can drive employee engagement, streamline adoption processes, and mitigate resistance through strategic communication and structured training programs.

Overall, the discussion of findings emphasizes that PEOU, security, and attitude are the most influential factors in driving Hudury's adoption at MOE. While trust and BI have a positive influence, they are not as decisive as initially expected, indicating that psychological barriers and organizational resistance may be limiting factors. These insights highlight the practical need for enhanced security measures, user training programs, and clear communication strategies to increase employee confidence and drive successful EHRM adoption in Saudi Arabia's public sector.

5.2.1 Comparison with Other Public Sector EHRM Implementations

To strengthen the study's relevance in the field of technology adoption in government organizations, it is essential to compare these findings with EHRM

adoption in other public sector institutions. Previous studies have demonstrated varied adoption patterns depending on factors such as organizational structure, employee attitudes, and regulatory frameworks.

For example, research on EHRM in public healthcare institutions e.g., Thomas and Zacharias [22] found that while perceived usefulness was a strong determinant of adoption, concerns over data security and compliance with government regulations created adoption barriers. Similarly, a study on digital attendance systems in municipal offices Ali et al. [23] reported that strict electronic monitoring increased employee stress, reducing behavioural intention to adopt the system.

Interestingly, trust ($r = 0.56$, $p < 0.001$) and behavioural intention (BI) ($r = 0.20$, $p = 0.00$) show weaker correlations with ASU in this study. This aligns with findings from local government agencies [7], where trust in technology played a secondary role compared to usability and policy mandates. The weak relationship between BI and ASU further suggests that while employees may express intent to use Hudury, external factors such as organizational culture, resistance to change, and concerns about biometric data privacy may hinder actual usage [38]. The table 9 below summarizes these comparisons

Table 9. Correlation analysis

Study	Sector	Key Factors Influencing EHRM Adoption	Comparison with Hudury Findings
Thomas and Zacharias [22]	Public Healthcare	Perceived usefulness was the strongest factor; security concerns hindered adoption	Similar to MOE, security concerns were a major barrier, but MOE employees prioritized ease of use more
Ali et al [23]	Municipal Offices	Strict monitoring increased stress, reducing adoption	Aligns with findings on job stress from electronic tracking at MOE
Bondarouk et al [7]	Local Government Agencies	Trust had limited impact; usability and policy compliance were stronger drivers	Similar to MOE, trust was a weaker determinant than PEOU and security
Ayanwale and Ndlovu [38]	Government HR Systems	Resistance to change and privacy concerns affected adoption	Consistent with MOE findings, where behavioural intention was not a strong predictor of actual use

This comparative analysis highlights that EHRM adoption in public sector organizations often encounters similar barriers, such as privacy concerns and resistance to change. However, the relative importance of different factors varies across sectors. For example, in healthcare and municipal offices, regulatory compliance and stress factors are more

prominent, whereas in government agencies like MOE, ease of use and security are the strongest determinants.

6. CONCLUSION

This study sought to investigate the factors influencing the adoption of electronic attendance system known as Hudury among employees at the Ministry of Education (MOE) in Saudi Arabia. To this end, study identifies four independent variables such as PEOU, PU, trust, security, attitude, ad BI to test their relationship with the dependent variable that is actual use of system (ASU). Data gathered through using online survey targeting three departments at the MOE such as human resources, finance, and deputy of general education. Statistical analysis of the findings reveals that PEOU, PU, Security, and attitude significantly and positively impacts adoption of Hudury at the MOE. However, trust and behavioural intention while have positive impact on the adoption of ASU, however their impact on the adoption of the ASU is insignificant. This could be due to the cultural reasons such as Qatar scores low on the uncertainty avoidance of the Hofstede's cultural dimension model which means that individuals in the country are naturally going to suspect adoption of new technology vis-à-vis impacting their behavioural intention to adopt new technology. The comparison with other public sector organizations suggests that EHRM adoption challenges are consistent across government agencies, but the weight of influencing factors differs based on organizational policies and cultural considerations. Future studies should explore how policy adjustments and organizational culture shifts can facilitate smoother EHRM integration across public sector institutions.

This study contributes practically by providing insights for policymakers and administrators at the Ministry of Education (MOE) in Saudi Arabia, highlighting factors like perceived ease of use (PEOU), perceived usefulness (PU), security, and user attitude that are pivotal for successful adoption of the Hudury electronic attendance system. Understanding these factors can guide strategic efforts to enhance employee engagement and optimize system design for greater usability. Theoretically, it extends technology acceptance research in a Middle Eastern context, particularly within a low uncertainty avoidance culture, offering a nuanced understanding of how trust and behavioural intention interact with technology adoption despite their insignificant effect in this context.

This study employs a non-probability sampling technique due to the difficulty in reaching out to every department of the MOE. Therefore, data were collected only from three departments of the organization, which may limit the generalizability of the findings to the entire MOE population [37]. Moreover, while the study aimed to collect 278 responses, only 225 valid responses were obtained, resulting in a response rate of approximately 81%. This shortfall raises concerns about non-response bias, as employees who did not participate may have different perspectives on Hudury's adoption. To mitigate this, demographic data were analysed to ensure representation across various

employee groups, and response trends were examined for consistency. Future studies should explore strategies such as follow-up reminders or mixed method approaches to enhance response rates and reduce potential bias.

Additionally, while this study tested five key hypotheses related to technology adoption—Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Trust, Security, and Attitude—other potential influencing factors, such as organizational support, training availability, managerial encouragement, and external regulatory requirements, were not examined. These factors have been highlighted in previous studies on EHRM adoption in government settings [7],[22]. Future research should consider including these additional variables to provide a more comprehensive analysis of technology adoption in the public sector.

The findings of this study have important implications for policymakers and administrators at the Ministry of Education (MOE) in Saudi Arabia. Given that perceived ease of use (PEOU), perceived usefulness (PU), security, and user attitude significantly influence Hudury's adoption, management should focus on enhancing these factors to drive employee acceptance. One key implication is the necessity of designing a user-friendly system that minimizes complexity while maximizing efficiency. Providing employees with clear instructions and support mechanisms can improve usability and reduce resistance.

The study also highlights that trust and behavioural intention, although positively linked to actual system use, do not have a significant impact. This suggests that cultural factors, such as Qatar's relatively low uncertainty avoidance, may contribute to employees' hesitation in trusting new technology. To address this, management should implement transparent data security policies and actively communicate how Hudury protects employee privacy. Building trust requires ensuring that employees perceive the system as secure and non-intrusive.

To encourage adoption, management should offer regular training sessions focusing on the benefits of Hudury, addressing employees' concerns, and demonstrating how the system can improve efficiency without compromising job security. Additionally, providing incentives for early adopters or incorporating feedback mechanisms can further ease the transition. Future research should explore more in-depth strategies for mitigating trust issues and examine how organizational culture influences technology acceptance in government institutions

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