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Electronic Health Record Adoption Towards A Sustainable Health System

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Abstract

Purpose: This research aims to study the determinants impacting the implementation of electronic health records in public hospitals in Malaysia, using the technology-organization-environment (TOE) framework as a conceptual framework for this study.

Methodology: The data for this study were gathered via an online questionnaire. SPSS Statistics 28 and SmartPLS3 were used to analyze the data for the research purpose and hypotheses, with a total of 119 healthcare professional participating.

Findings: The study findings showed that technological, organizational, and environmental factors all play a role in the adoption of electronic health records in Malaysian public hospitals. The outcomes of this study revealed that factors such as complexity, compatibility, financial support, and government laws and regulations all play a role in electronic health record adoption in Malaysian public hospitals. Other elements such as optimism, relative advantage, top management support, training, and government IT policy do not play a substantial role.

Research limitations: Because this is a quantitative study, the findings may be transferable to other developing countries, although more research in diverse cultures is required. Second, the subject segment is limited, as is the language preference for government employees. There were also data collection challenges during the pandemic, and the number of data respondents is enough to meet the minimum sample size required.

Originality/value: Based on the theoretical framework and empirical findings, this study provides insight into the factors impacting the adoption of EHRs. With this knowledge, practical advice for developing plans to ensure the efficiency and accessibility of these important components can be derived.

Keywords: Electronic Health Record, Adoption, Technology-Organization-Environment Framework, Public Hospital, Health System Access

Classification: Research paper

Introduction

The healthcare industry has witnessed a significant transformation over the past few decades with the emergence of digital technologies. Among these advancements, the implementation of Electronic Health Records (EHRs) stands out as a pivotal development. EHRs are electronic representations of patients' physical paper charts. They offer up-to-date, patient-focused records that allow authorised users to access information immediately and securely.

Malaysia's healthcare system faces challenges such as rising costs, increasing demands, and inefficiencies. Although there have been initiatives to digitalize healthcare, including the implementation of EHR systems, the adoption has been slow. This study addresses the gap in understanding the factors that influence EHR adoption in Malaysian public hospitals, focusing on three key factors: technological characteristics, organizational characteristics, and environmental characteristics ss a result of these problems, governments are implementing several measures, including the use of information technology (IT) in healthcare. Various innovations have been implemented in healthcare organizations over the years to better incorporate technology, lower medical mistakes, reduce expenses, improve decision making, and facilitate the search for medical answers (Ahmadi et al., 2017). Consequently, Information technology (IT) is increasingly essential for enhancing the quality of service in the healthcare sector. EHRs is a very significant application in the healthcare field, providing several advantages to the whole healthcare community. EHRs are created using secure computer networks and integrated health information systems. Authorised care providers can access these networks to consult and share information with other healthcare organisations.

EHR is a vital application in the healthcare field, providing several advantages to the whole healthcare community. The objective of our study is to perform an extensive analysis of the existing literature on the adoption of Electronic Health Records (EHR) in different healthcare settings. Our aim is to identify the prevailing adoption theories and the most efficient implementation approaches (Sadoughi et al., 2018). Malaysia uses the EHR (Total Hospital Information System) to construct EHRs to achieve comprehensive hospital automation and coordinated care delivery across multiple providers. However, Malaysian hospitals have developed a non-shareable EHR system that is maintained by a single or several approved care providers within a single facility due to statutory limits (Salleh et al., 2021). This concept of a shareable digital health record is referred to as an EHR. Some studies use the term HIS when talking about EHR in Malaysia (Salleh, Abdullah, & Zakaria, 2020), which leads to a

misunderstanding when defining the country's efforts to implement EHR. Therefore, HIS and EHR are similar concepts with different names.

An HER is a digital record of a patient's health that can be readily shared across healthcare practitioners and utilised to track a patient's advancement throughout the healthcare system. EHRs have become more important in the process of digitising the healthcare business. They provide potential advantages such as maintaining consistent treatment, enhancing clinical decision-making, and reducing costs. The use of Electronic Health Record (EHR) systems has been advantageous for nations like Singapore, Australia, and Norway as it enables them to deliver a more integrated and patient-centric approach to healthcare (Mukhriz Mudaris, 2021). One of the most basic advantages of EHRs is the ability to easily access digital records, as well as the elimination of poorly coordinated patient care (Raja Ikram et al., 2021). The use of an EHR improves the efficiency of health services, as well as the quality of care and customer satisfaction. However, consumers' failure to adopt and use the technologies that are given, however, frequently thwarts the potential benefits of harnessing computer performance (Pavlovic et al., 2021).

EHR systems are well known for their capacity to deliver better treatment, reduce medical costs, and expand clinical options. However, unless the system is well-reviewed, its installation may have a negative impact on clinical staff performance. Clinical care information systems in Malaysian tertiary referral hospitals were found to be incompatible with doctors' workflows, task complexity, and working conditions. The doctors displayed reluctance in utilising the systems due to the intricate user interface and functionality, which have led to numerous mistakes in data input and prescription (Salleh et al., 2021).

A sustainable health system is one that can maintain its services and improve public health over time without exhausting resources or causing significant ecological or social damage. EHRs contribute to sustainability by reducing paper use, streamlining operations, and enabling better management of healthcare resources.

As a result, this study looks into the major factors driving EHR adoption in Malaysian public hospitals. Despite the fact that there are numerous elements that can influence EHR adoption in the healthcare industry, this study focused solely on three of them: technology characteristics, organizational characteristics, and environmental characteristics. The objective is to enhance organizational effectiveness and facilitate the widespread implementation of EHR in the healthcare sector in the coming years.

Hypothesis Development

Technology Context

The technological context refers to the characteristics of technology that have an impact on how it is accepted. The technological context is made up including both internal and external factors that influence individual, organizational, and industry acceptance of advances. In reality, the technological dimension refers to the level of innovation that has an impact on the organization's adoption of innovative technologies (Rogers et al., 2019). The voluntary decision of an individual

or organization to accept and use a technology to overcome daily problems is referred to as technology adoption (Awa et al., 2017).

Complexity is defined as "the degree to which an innovation is seen as comparatively difficult to understand and apply," according to Rogers Everett during 1995. Some businesses may see innovation as complex due to a lack of associated expertise and knowledge, whereas others may not perceive it as such since they have the necessary ability and knowledge (Ahmadi et al., 2017). In comparison to other healthcare providers, hospitals, being the primary environment of the public healthcare sector, have more complicated systems and procedures (Ismail et al., 2013). Ahmadi et al., (2015) conducted a survey of experts in Malaysia on the deployment of HIS in public hospitals. They discovered that resistance to HIS innovation stems from a lack of skills and understanding. Health organizations will be less likely to adopt an innovation if they perceive it would not require substantial effort. The following theory is conceivable, according to the researchers.

H1: *Complexity has a negative effect on the adoption of electronic health records among public hospitals.*

The level of compatibility between a new system and the company's existing infrastructure system is determined by compatibility (Awa, Ukoha, et al., 2017). Rogers Everett (1995) defined compatibility as "the degree to which an invention is viewed as consistent with the values, experience, and needs of potential units of adoption." (Ahmadi et al., 2017). Complex systems are being constructed in the present day due to recent advancements in technology. Highly capable software applications and advanced hardware at low rates, as well as dependable networking and standards, open up a whole new world in this industry (Lian et al., 2014). As a result, the level of system compatibility is one of the most essential variables in the technological dimension. As a result, we proposed a hypothesis regarding hospital adoption of EHR.

H2: *Compatibility has a positive effect on the adoption of electronic health records among public hospitals.*

A positive disposition towards technology can result in a strong belief that technology has the potential to enhance individuals' everyday lives in terms of their ability to manage, adapt, and optimize tasks (Chen et al., 2021). Typically, those with a positive outlook tend to favor the use of more recent technologies due to their appreciation for the technological expertise and the excitement of being in control. Previous studies have demonstrated that technology readiness has an impact on the willingness to use a technological product or service. Positive factors such as optimism and innovativeness drive this willingness, while negative factors such as discomfort and insecurity hinder it (Lin & Hsieh, 2007). Shim et al., (2020) found that optimism and inventiveness had an impact on motives to use self-service technology, as well as ease of use, performance, and enjoyment. Based on the findings of earlier research, we hypothesized that optimism would have a favorable impact on perceived EHR adoption in public hospitals, and hence developed the following hypotheses.

H3: *Optimism has a positive effect on the adoption of electronic health records among public hospitals.*

The degree to which HIS is thought to be superior to its predecessor is referred to as relative advantage (Ahmadi et al., 2017). Hung et al. (2010) in their HIS study discuss the element of relative advantage and discover a favorable result, emphasizing that the more benefits received from implementing HIS innovation, the more enthusiastic the hospital will be about implementing HIS. Checking that the deployment of HIS can lower hospital operating costs and obtain relative operational efficiencies for a certain hospital is referred to as relative advantage. Ahmadi et al. (2015) discovered that the relative advantage of HIS has a beneficial impact on a hospital's willingness to adopt it in a developing country. In the meantime, the usability of EHR innovation technologies provides a significant advantage for company sustainability, making the deployment process easier. Technology compatibility and relative advantage are the factors that drive and attract EHR innovation.

H4: *Relative Advantage has a positive effect on the adoption of electronic health records among public hospitals*

Organization Context

Previous study has shown that the organizational component is a very influential factor in determining a hospital's inclination to embrace a new technology system. The study revealed that the adoption of EHR in healthcare organisations is influenced by two key factors: managerial support and organizational preparedness. The organizational context refers to how an organization's characteristics and resources influence decisions concerning. The organizational context refers to the company's characteristics and resources, such as employee relationships, cross-communication protocols, the company's business proportion, and the quantity of the budget allocation, all of which influence implementation and adoption decisions (Menta, 2022). In terms of EHR adoption, this context includes top management support, financial support, and training.
Top management support refers to whether top executives are aware of the nature and purposes of HIS technology and, as a result, are enthusiastic about its development (Lian et al., 2014). The term "top management support" relates to how much a new technology system's technological potential is understood and embraced by its managers (Sanders, 2007). Hospitals may require certain resources to adopt and deploy EHR innovation. Additionally, having significant expertise or experience with EHR technology is essential. As a result, hospital organizations that have top-level management support for EHR technology are more likely to implement it. As a result, the following theory is proposed:

H5: *Top management support has a positive effect on the adoption of electronic health records among public hospitals.*

One of the most important criteria of HIS innovation in a hospital context has been recognized as financial resources (Deering et al., 2012). The financial resources available to pay for installation charges, later improvements, and continuous expenses throughout use are referred to as financial resources (Iacovou et al., 1995). Each procedure requires funds to provide the essential human and material resources as well as to mitigate any risks. Obviously, a shortage of funds may prevent a company from adopting big data (L. Wang et al., 2018). Financial support is another important organizational factor for the purchase of technology, payment incentives, infrastructure security,

and equipment procurement, which is also true for the hypothesis. The quantitative analysis results were used to estimate a critical significance level. Therefore, it is endorsed.

H6: *Financial support has a positive effect on the adoption of electronic health records among public hospitals.*

To sustain the company's development, the healthcare organization demands regular training for all employees. Individuals with a passion for continuous learning can passionately share information with colleagues. They discovered that ongoing training allows people to learn new abilities that are required to accomplish their tasks (Vaishnavi et al., 2019). According to Iljashenko et al., (2019), a company with higher-quality human resources, such as better training or education, will have a greater ability to innovate.

H7: *Training has a positive effect on the adoption of electronic health records among public hospitals.*

Environment Context

Environmental context refers to the impact of a company's external and inter-organizational factors that impact the functioning of the company (Malik et al., 2021). Environmental factors are those that an organization may encounter when functioning outside of its own walls. When functioning in an environmental context, businesses are often more exposed to the changing nature of the external ecosystem. External determinants influencing public hospital adoption of EHR include competitive forces, external support, and government rules, according to the TOE model (Ghaleb et al., 2021).
The government authority provides support to encourage the adoption of IT innovation by firms, which is known as the external and inter-organizational environment affecting their operations to as government IT policy and legislation (Oliveira et al., 2014). Yusif et al., (2020) discovered that government laws aid hospitals in implementing new information technology. Furthermore, most research on HIS adoption in hospitals emphasized the two external pressures of mimetic pressure from competitors and coercive pressure from the government as the most common external pressures (Ahmadi et al., 2017). As previously stated, there are two components that make up the environmental dimension: government policy and perceived industry pressure.

H8: *Government IT policies have a positive effect on the adoption of electronic health records among public hospitals.*

The Ministry of Health's e-health activities for ICT transformation include integrating and enhancing two Electronic Medical Record systems that are currently utilised independently in primary care facilities. These systems include the Tele Primary Care (TPC) system, which is used in health clinics, and the Oral Health Clinical Information System (OHCIS). Utilised within dental clinics (*Bahagian Pembangunan Kesihatan Keluarga - Teleprimary Care*, 2015). MOH has already begun implementing this EMR system using a variety of methods, including Tele Primary Care - Oral Health Clinical Information System (TPC -OHCIS) in dentistry and medical clinics and Hospital Information System (HIS@MOH) in hospital facilities. The Malaysia Health Information Exchange (MyHIX) system, which is a platform for sharing health information, has

also been developed by MOH and enables medical professionals at various health facilities to securely access and share patients' medical information (*My GOV - The Government of Malaysia's Official Portal*, 2021). Government rules and policies, particularly in developing countries, have been highlighted as important forces influencing the implementation of developing technology, such as cloud-based enterprise resource planning (ERP) (Ghaleb et al., 2021). An organization is more inclined to adopt new technologies if the government has a distinct mandate to do so, as per (Li, 2008). There are two types of environmental government legislation: regulatory and competitive. The support of the regulatory environment is essential for innovation adoption (Saeed et al., 2012). As a result, government rules and legislation must encourage the adoption of EHR technology in public hospitals. As a result, hypotheses for this study were proposed.

H9: *Government laws and legislations have a positive effect on the adoption of electronic health records among public hospitals.*

Research Method and Data Collection

The data was collected using a straightforward sampling strategy. In the statistics literature, there are two types of sampling techniques: probability sampling and non-probability sampling. It was difficult to obtain data using probability sampling due to the COVID-19 epidemic (Ghaleb et al., 2021). As a result, we chose convenient sampling. A quantitative technique was used in this investigation, which included a cross-sectional survey. The choice of this method is justified as follows, practical Constraints due to the COVID-19 pandemic, probability sampling methods were difficult to implement. Convenience sampling allowed the researcher to collect data more easily under these challenging conditions. relevant Respondents, the study specifically targeted healthcare professionals who are familiar with EHR systems, ensuring that the sample was relevant to the research objectives. The inclusion criteria ensured that only those with relevant experience and knowledge were surveyed.

This study focused on the population of public hospitals in Malaysia. The sample of respondents was taken from healthcare professionals and representatives for the hospital. This study used a quantitative approach and employed a self-administered questionnaire from Google Forms delivered via electronic communication channels such as direct messages and email to collect data from respondents. Non-probability sampling design was used in this study, specifically the purposive sampling technique. The questionnaire consisted of nine components adapted from Ghaleb et al. (2021) and Zhang et al. (2020). Section 1 is the demographic section, which collects respondents' sociodemographic characteristics and ensures that they are healthcare professionals. Sections 2, 3, and 4 focus on independent factors, while section 5 addresses the EHR adoption stage. The questionnaires used a five-point Likert scale, with 1 indicating "Strongly Disagree," 2 indicating "Disagree," 3 indicating "Neutral," 4 indicating "Agree," and 5 indicating "Strongly Agree." To test the research hypothesis, the factors being tested need to be computed. The The quantitative analysis approach entailed the creation of a survey instrument and gaining authorization from academic experts. The instrument was utilized in this work to gather data, which was later analyzed using partial least squares structural equation modelling (PLS-SEM).

Results

Demographic of the Hospital

Universiti Malaya Medical Centre (UMMC), Hospital Universiti Sains Malaysia (HUSM), Hospital UKM (HUKM), Hospital Pengajar UPM (HPUPM), Hospital UIA (HUIA), and Hospital UiTM are teaching hospitals among the 156 public hospitals run by the Ministry of Health Malaysia. The demographics of hospital culture are nurses and medical informatics officers, followed by doctors. Most hospital employees have 11 to 15 years of experience in the healthcare industry. Most respondents use their computers for 4 to 7 hours every day.

Measurement Model Result

Given that this study adopted a reflective measurement technique, it will undergo assessment for both reliability and validity to ascertain the accuracy and dependability of the questionnaire. using PLS-SEM. Cronbach's Alpha (CA) and Composite Reliability (CR) were used to assess model reliability, while convergent and discriminant validity were used to assess model validity.

Each indicator's reliability must be considered when testing the reliability, with each indicator's loading above 0.70. Previous research suggested deleting indicators with loading values between 0.4 and 0.7; therefore, items FS1, FS2, FS3, TR2, GITP5, EHRA7, and EHRA8 were to be eliminated because their loading values were less than 0.6. Despite the loading being less than 0.7, the items EHRA2, GLAL1, GLAL3, and TMS3 were not deleted. This is because, in general, indicators with loadings between 0.40 and 0.70 should only be evaluated for removal to attain the desired Cronbach's Alpha (CA) and Composite Reliability scores (CR). The CR and CA are employed to assess the model's coherence. The findings indicate that the CR and CA values fall within the range of 0.80 to 0.90, suggesting that all the variables and indicators included in this model are both essential and adequate for accurately capturing the connection between the latent variables and their measurements. The Financial Support variable is now a single factor variable due to the removal of three measurements.

The convergent validity of the validity test is indicated by the average variance extracted (AVE), which should be above 0.5. The AVE of all constructs was higher than 0.50. As a result, the model fulfils the convergent validity criterion.

Discriminant Validity of Construct

Discriminant validity is utilized to analyze the connections between latent variables. In this work, the Fornell-Larcker and HTMT criterion were used to assess discriminant validity. The results shown in Table 1 indicate that the intercorrelations between each latent construct are higher than the construct's greatest squared correlation with any other latent construct. This suggests that the measuring model has discriminant validity, and all components may be employed to assess the theoretical framework.

Table 1: Fornell-Larcker Results

VARIABLES	CT	CX	EHRA	FS	GITP	GLAL	OP	RA	TMS	TR
COMPATIBILITY	0.851									
COMPLEXITY	-0.114	0.843								
EHR ADOPTION	0.548	0.17	0.823							
FINANCIAL SUPPORT	0.47	0.048	0.641	1						
GOV IT POLICY	0.297	-0.107	0.345	0.321	0.955					
GOV LAWS LEGISLATIONS	0.469	0.024	0.618	0.581	0.567	0.76				
OPTIMISM	0.407	-0.298	0.213	0.305	0.292	0.337	0.884			
RELATIVE ADVANTAGE	0.418	-0.252	0.227	0.192	0.44	0.369	0.638	0.92		
TOP MANAGEMENT SUPPORT	0.531	-0.249	0.415	0.452	0.474	0.469	0.547	0.624	0.807	
TRAINING	0.47	-0.071	0.441	0.517	0.462	0.579	0.34	0.365	0.459	0.861

Henseler et al., (2014) HTMT, or Heterotrait-Monotrait Ratio of Correlations, is a supplementary approach used to assess discriminant validity, a crucial part of model evaluation. Discriminant validity between two reflective ideas is demonstrated when the HTMT score is below 0.85. The HTMT ratio for the data in Table 2 indicates that all of the upper threshold values are below 0.85, suggesting the absence of discriminant validity.

Table 2: Heterotrait-Monotrait Ration (HTMT)

VARIABLES	CT	CX	EHRA	FS	GITP	GLAL	OP	RA	TMS	TR
COMPATIBILITY										
COMPLEXITY	0.161									
EHR ADOPTION	0.622	0.2								
FINANCIAL SUPPORT	0.503	0.061	0.664							
GOV IT POLICY	0.334	0.118	0.371	0.325						
GOV LAWS LEGISLATIONS	0.571	0.087	0.7	0.646	0.645					
OPTIMISM	0.475	0.316	0.224	0.31	0.305	0.39				
RELATIVE ADVANTAGE	0.504	0.27	0.229	0.187	0.481	0.431	0.698			
TOP MANAGEMENT SUPPORT	0.623	0.328	0.398	0.42	0.527	0.546	0.638	0.73		
TRAINING	0.548	0.112	0.467	0.554	0.522	0.704	0.392	0.431	0.502	

Path Coefficient and Hypotheses Summary

The study research utilizes Smart-PLS 3 to analyze and evaluate the hypotheses. Hypothesis testing employs a bootstrapping approach with a resample of 5000 to determine acceptance or rejection criteria based on path coefficients, confidence intervals, and matching t-value (Henseler et al., 2014). The route coefficient is utilized to evaluate the significance and pertinence of connections within a structural model, so determining if the conceptual model or theoretical hypotheses have been experimentally confirmed. The arrows or paths represent the proposed connections between the structures (Hair et. al, 2016). According to F. Hair Jr et al., (2014), a hypothesis should be accepted if the p values range from 0.001 to 0.005, the t values are more than 1.645, and the confidence interval values are all within the same range. The criteria we utilised to

assess the hypotheses produced are summarised in Table 3. In conclusion, H1, H2, H6, and H9 have supported theories. Five theories are unsupported: H3, H4, H5, H7, and H8.

Table 3: Summary of Hypotheses Statements Results

Relationship	Path Coefficients	T-values	P-values	Decision
H1-Complexity -> EHR Adoption	0.171	2.264	0.012	Supported
H2-Compatibility -> EHR Adoption	0.279	3.448	0	Supported
H3-Optimism -> EHR Adoption	-0.079	0.69	0.245	Not Supported
H4-Relative Advantage -> EHR Adoption	-0.013	0.127	0.449	Not Supported
H5-Top Management Support -> EHR Adoption	0.081	0.796	0.213	Not Supported
H6-Financial Support -> EHR Adoption	0.334	3.35	0	Supported
H7-Training -> EHR Adoption	-0.032	0.434	0.332	Not Supported
H8-Gov IT Policy -> EHR Adoption	0.012	0.103	0.459	Not Supported
H9-Gov Laws Legislations -> EHR Adoption	0.293	3.033	0.001	Supported

Discussion

The first area of hypotheses belongs to the technological part, according to the findings section of the table above. On the technology side, there are four areas to consider: complexity, compatibility, optimism, and relative advantage. H1 reveals that complexity has a substantial positive link with EHR adoption. H1 presented empirical evidence for a correlation between complexity and EHR adoption, as shown by a beta value of 0.171, a t-value of 2.264, and a p-value of 0.012. Indeed, the data suggest that adopters are helped in dealing with the intricacies of adopting a new system that relies on EHR technology. Ismail et al. (2011) and Ismail et al. (2013) provided support for these relationship investigations (Ahmadi et al., 2015). According to Rogers Everett in 1995, complexity is the degree to which an innovation is perceived as being comparatively difficult to grasp and apply.

H2 demonstrates a favorable and significant association between compatibility and EHR adoption. H2 suggests that compatibility is relevant to the EHR system. This idea is also supported by the findings of Awa, Ukoha, et al. (2017). Second, the findings of this study back up the notion that an innovative technology that is more compatible with existing systems, practices, and work experiences will be more readily accepted by potential users. Increased interoperability would allow for the implementation of cutting-edge technology (C. H. Lin et al., 2010). The positive link between H2 compatibility and EHR adoption has a beta value of 0.279, a t-value of 3.448, and a p-value of 0. The hypothesis is supported by H2 and is accepted.

H3, optimism has a weak and insignificant negative connection with EHR adoption. This association is unsupported, implying that optimism has a detrimental impact on EHR adoption in public hospitals. From one point of view, the relationship between optimism and EHR adoption seemed contradictory (Chen et al., 2021). The relationship between optimism and EHR adoption shows a beta of -0.079, a t-value of 0.69, and a p-value of 0.245. The final technology element is relative advantage. H4, relative advantage has a negative connection with EHR adoption, according to the findings. This link between relative advantage and EHR adoption was not proven, and it was challenged by the study's findings (Ahmadi et al., 2015). As a result, public hospital

adopters believe that EHR technology is on par with other innovative technologies or that they are still unsure about using new technology. H4 reveals a beta of -0.013, a t-value of 0.127, and a p-value of 0.449 for relative advantage with EHR adoption. The hypothesis about the link between the deployment of EHR in public hospitals in Malaysia was confirmed based on the complexity and compatibility indicators derived from the technological aspect.

The organizational aspect is the subject of the second set of hypotheses. There are three organizational indicators to measure: top management support, financial support, and training. According to the data, top management support has a positive link with EHR adoption in Malaysian public hospitals, but the relationship is unsupported. According to the table above, the H5 top management support has a beta of 0.081, a t-value of 0.796, and a p-value of 0.213. From the point of view of EHR adoption, the relationship between top management support and adoption was challenged (Lian et al., 2014). To put it another way, the public hospital system in this area is not yet ready to begin incorporating EHR technology into their working culture.

Next is financial support. Based on the findings in the table above, H6 financial support is statistically significant for EHR adoption. Furthermore, the relationship between them is supported. The H6 relationship between financial support and EHR adoption shows a beta value of 0.334, t-value of 3.35, and p-value of 0. This relationship shows that financial support played a big role in EHR adoption among public hospitals in Malaysia. Besides, the financial support relationship with EHR adoption was approved by studies (Deering et al., 2012). Another key organizational aspect for the adoption of technology, financial assistance, critical infrastructure, and equipment purchases is financial support, which is also valid for the hypothesis. In the dimension of organizational context, financial support is a critical aspect. This relationship between financial support and EHR adoption is also supported by studies from (Ghaleb et al., 2021), which mentioned that each procedure necessitates cash to provide the necessary people and material resources, as well as to mitigate any hazards. The failure of a business's adoption of big data could clearly be due to a lack of resources.

Based on the findings, it appears that H7-training and EHR adoption have a negative association. The H7 relationship has a beta of -0.032, a t-value of 0.434, and a p-value of 0.332. The hypothesis is insignificant and unsupported. That is, the training component has little effect on EHR adoption in Malaysian public hospitals. These data reveal that there is a discrepancy between the findings of other investigations (Iljashenko et al., 2019). As a result, financial support is one of the elements that influence the adoption of EHR in Malaysian public hospitals. The organizational element, on the other hand, has an impact on the factor of EHR adoption in Malaysian public hospitals.

Environmental influences make up the third section of the hypothesis. Based on the preceding findings, the association between H8-government IT policy and EHR adoption is statistically insignificant and unsupported. The association has a beta of 0.012, a t-value of 0.103, and a p-value of 0.459. In other words, the government's IT strategy has little effect on EHR adoption in Malaysia's public hospitals. The viewpoints of Yusif et al., (2020) and Oliveira et al., (2014) contradict each other on the relationship between government IT policy and EHR adoption.

Government laws and regulations have a statistically significant impact on the adoption of EHR technology. The H9 link between government laws and legislation is supported and important. The

beta is 0.293, the t-value is 3.033, and the p-value is 0.001 for the association between government laws and legislation and EHR adoption. From this relationship, it can be concluded that government policies and regulations play an important role in the adoption of EHR technology in Malaysian public hospitals. These findings support the research by Ghaleb et al., (2021), which found that government support is critical for the implementation of EHR technology in Malaysian public hospitals.

Conclusion

The adoption of EHRs is increasingly recognized as a critical component in achieving a sustainable health system. By understanding the factors that influence successful EHR adoption and addressing the challenges involved, healthcare providers can significantly enhance the quality and sustainability of healthcare delivery. This research adopted the TOE framework from previous studies and implemented the adoption of EHR among public hospitals in Malaysia. The TOE factors were measured with nine indicators included. Future studies may make improvements on the choice of independent variables selected for the TOE framework. Additionally, the subjects for the research may include perspectives from private hospitals or private clinics. The sample size of respondents for the current research may increase in terms of data collection for future studies. Methods such as self-evaluation, peer review, diary observation, and actual internet use sampling may be utilized in future studies to improve precision and increase the explanatory value of research findings (Ghaleb et al., 2021). Furthermore, this research contributed to the understanding of the factors that influence EHR adoption in Malaysian public hospitals.

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