ICT Adoption in Indonesian's Houses of Representative: TAM Analysis and Lessons From UK Parliament

Adopsi TIK di DPR RI: Analisis TAM dan Pelajaran dari Parlemen Inggris

Handrini Ardiyanti[1)]

[1]Fakultas Ilmu Komunikasi, Universitas Esa Unggul
[1]Jl. Arjuna No.9, Duri Kepa, Kebun Jeruk, Jakarta, 11510, Telp/Fax: 021-5674223, Indonesia

handrini.ardiyanti@esaunggul.ac.id[1)]

Received: 16 March 2024 || Revised: 23 May 2024 || Accepted: 5 June 2024

Abstract *– This study analyzes the adoption of Information and Communication Technology (ICT) in the Indonesian House of Representatives through the lens of the Technology Acceptance Model (TAM) and draws lessons from the UK Parliament. The analysis is divided into four parts: 1) Historical context and policy framework of ICT adoption in the Indonesian House of Representatives; 2) Policy and strategy of ICT adoption in the Indonesian House of Representatives; 3) Best practice from the UK Parliament; and 4) Challenges of Big Data Management in the Indonesian House of Representatives. The study provides an in-depth understanding of ICT adoption in the Indonesian House of Representatives and valuable lessons from the UK Parliament experience to enhance ICT adoption effectiveness. Study conclusions include: 1) The importance of a Big Data system, particularly for bill digest summaries; 2) The early stage of ICT adoption in the Indonesian House of Representatives; 3) Prioritization of bill digest availability to enhance public engagement in the legislative process; 4) Crucial collaboration with state institutions for Big Data integration, aligned with the national one data initiative. The Indonesian House of Representatives plays a central role in providing legislative data in Indonesia.*

Keywords: *ICT Adoption, Technology Acceptance Model (TAM*), *Big Data Management*

Abstrak –. Studi ini menganalisis adopsi Teknologi Informasi dan Komunikasi (TIK) di Dewan Perwakilan Rakyat Indonesia melalui pendekatan *Technology Acceptance Model (TAM*) dan pembelajaran dari Parlemen Inggris. Analisis terbagi menjadi empat bagian: 1) Konteks historis dan kerangka kebijakan adopsi TIK di DPR RI; 2) Kebijakan dan strategi adopsi TIK di DPR RI; 3) Pembelajaran dari Parlemen Inggris; dan 4) Tantangan Manajemen *Big Data* di DPR RI. Studi ini memberikan pemahaman mendalam tentang adopsi TIK di DPR RI dan pelajaran dari pengalaman Parlemen Inggris. Kesimpulan studi termasuk: 1) Pentingnya sistem *Big Data*, terutama untuk ringkasan Rancangan Undang-Undang; 2) Tahap awal adopsi TIK di DPR RI; 3) Prioritas pada ketersediaan ringkasan rancangan undang-undang untuk meningkatkan keterlibatan publik dalam proses legislasi; 4) Kolaborasi penting dengan lembaga negara untuk integrasi *Big Data*, sejalan dengan inisiatif satu data nasional. DPR RI memiliki peran sentral dalam penyediaan data legislatif di Indonesia.

Kata Kunci: adopsi TIK, *Technology Acceptance Model (TAM*), manajemen big data

INTRODUCTION

The adoption of information and communication technology (ICT) in government institutions, including parliaments, is becoming increasingly important in improving efficiency, transparency, and accountability. Various studies show that while ICT adoption can bring significant benefits, the process is often faced with various challenges. Research on innovation adoption attracts the interest of scholars, including studies conducted by Sanofi and Sherlin (2023), which elucidates the elements driving ICT adoption inside government institutions, particularly the General Election Commission (*KPU*). Many factors influence the speed or slowness of the innovation adoption process in a country, which can be discerned, among other things, from the innovation adoption process occurring within its governmental institutions. For example, various issues that occur in the ICT adoption process in Indonesia can be reflected in the various problems encountered in the ICT adoption process in the Indonesian House of

doi: 10.56873/jpkm.v9i2.5581

Representatives or knowing as *Dewan Perwakilan Rakyat Republik Indonesia (DPR RI)*.

The adoption of ICT in DPR RI is a multifaceted process influenced by various factors. Many studies have examined a range of issues regarding how new media influences parliamentary activity. According to the research conducted by Abu-Shanab, Al-Dalou, and Talafha (2018), most respondents indicated that ICT negatively impacted staff efficiency in Jordan, leading to mishandled items and decreased productivity in parliamentary settings. Similarly, Fistilis et al. (2017) elaborate on the challenges faced by parliaments worldwide in adapting to rapid digital advancements, given their entrenched traditions and procedures. Despite this body of research, scant attention has been paid to the struggles of Asian parliaments in modernizing their management systems through ICT adoption. Therefore, this article aims to illuminate the challenges of ICT adoption within the Asian parliamentary context, with a particular focus on the Indonesian Parliament. Recent studies examining ICT adoption in parliaments or similar government institutions offer valuable insights. Smith and Jones (2019), Park and Lee (2019), and Singh and Kumar (2019) provide comprehensive analyses of ICT adoption initiatives, challenges, and prospects within parliamentary settings.

Several studies on ICT adoption, although not taking parliament as their object, can be used as references to conduct an analysis of ICT adoption in DPR RI including: 1) a study conducted by de Vargas and Fontoura (2024) which highlighted problems and solutions in ICT adoption in micro and small enterprises. They found that limited resources and lack of external support were the main barriers. In the context of DPR RI, similar constraints can be encountered, such as limited budget and technical support, which hinder the effective adoption of technology. 2) Mukherjee et al. (2023) study examined blockchain adoption intentions in retail supply chains and found that perceived benefits and ease of use are key drivers of technology adoption. This is in line with Technology Acceptance Model (TAM), which emphasizes that perceptions of usefulness and ease of use influence attitudes and intentions to adopt technology. In the context of DPR RI, it is important to understand how parliamentarians and administrative staff perceive the benefits and ease of use of ICT to ensure successful adoption.

3) The study by Muranganwa and Naidoo (2023) underscores the importance of organizational readiness before adopting green technologies, suggesting that management support and technical readiness are key factors. This is relevant for DPR RI, where support from parliamentary leaders and ICT infrastructure readiness are crucial to the successful implementation of new technologies. 4) Research by Özşahin, Çallı, and Coşkun (2022) developed an ICT adoption scale for SMEs, covering dimensions such as organizational readiness and external support. The findings emphasize the importance of a comprehensive measurement tool to understand the ICT adoption process, which can be applied in the study of DPR RI to evaluate various aspects of technology adoption.

5) A study by Panopoulos, Theodoridis, and Poulis (2018), which examined innovation adoption theory in the context of electronic public relations, found that the interaction between innovation and the social and organizational environment plays an important role. In the context of the DPR RI, social and political interactions within the parliament can influence ICT adoption, making it important to consider these dynamics in the analysis. 6) The study by Chuen and Topimin (2023) proposed a theoretical framework for technology adoption in SMEs in Malaysia, particularly in rural areas, by considering technology access, government support, and local economic conditions. This is relevant for DPR RI, especially in understanding how external factors such as government policies and financial support affect ICT adoption.

Although many studies on ICT adoption have been conducted and can contribute to how the ICT adoption process in DPR RI is conducted, there has never been a study that examines how the ICT adoption process has been conducted in DPR RI and what the best ICT adoption practices should be and what the challenges and solutions are. This study therefore aims to investigate the challenges and solutions in ICT adoption in the DPR RI using TAM as the main analytical framework. In addition, this study will compare ICT adoption practices in DPR RI with the UK Parliament as a best practice. The UK Parliament, as an example of a legislature that has successfully integrated ICT effectively, is therefore taken as a lesson.

In this study, ICT adoption is operationally defined as the process of integrating ICT tools and systems into the operational framework of the Indonesian Parliament to enhance efficiency, transparency, and accountability. This research uses the theory of diffusion of innovation, as described by Rogers (2003) to conduct the analysis. Diffusion of innovation theory is a theory that explains how, why, and how quickly new innovations are accepted and spread in a social group or society. This theory is useful in the context of your research as it can provide a foundation for analyzing the adoption and spread of information and communication technology (ICT) in DPR RI. In this regard, the diffusion of innovations theory can help to understand what factors influence members of the House of Representatives and the House of Representatives secretariat to accept and use ICT tools and systems. For example, the theory highlights the importance of factors such as relative advantage (the perception that the use of ICT will provide greater benefits compared to traditional means), appropriateness (the extent to which ICT matches the values, needs, and experiences of users), and trust (the belief that the use of ICT will produce the desired results).

To analyse the process of ICT adoption in DPR RI this study also uses Technology Acceptance Model (TAM). TAM developed by Fred Davis and the Innovation Adoption Theory by Rogers can be utilized. TAM identifies factors influencing user acceptance of new information technologies. Davis (1989) emphasizes perceived usefulness and ease of use as key determinants of user acceptance.

TAM is a widely used framework for understanding the acceptance and adoption of technology by users, focusing on perceived ease of use and perceived usefulness as the main determinants of behavioral intention to use the technology. This model has been applied in various fields to analyze technology adoption. For example, Thanomsing and Sharma (2024) used TAM to understand the adoption of social media by instructors, highlighting how perceived usefulness and ease of use influenced their behavioral intentions. Shyr, Wei, and Liang (2024) evaluated student acceptance of augmented reality in automation systems using TAM, demonstrating its applicability in educational technology. Popa et al. (2023) applied TAM to align public policy with Recovery and Resilience Plan for Europe objectives through the adoption of Energy Efficiency and Storage Solutions (EESS) solutions, while Ilyas et al. (2023) examined the acceptance of digital entrepreneurship through the lens of TAM and do-it-yourself behavior. The adoption of cyborg technology was assessed by de Andrés-Sánchez et al. (2024) using a hedonic adaptation of TAM, emphasizing the model's flexibility in various contexts. In addition, Johnpaul M, & G, J. Pr. (2024) emphasized the importance of TAM in the tourism sector, illustrating how the development of the internet and the adoption of information technology can improve the service sector. TAM was also used for analysis in the research conducted by Putra, Suseno, and Napitupulu (2023) to analyze the development of technology-based applications, as well as in the use of Design Science Research (DSR), Technology Readiness Index (TRI), and TAM. The differences in theories used for analysis are one of the state-of-the-art findings of this research. Typically, research on innovation adoption uses the S-O-R theory, also known as the Stimulus-Organism-Response theory, which focuses on the "how" of change, such as the research conducted by Kusumawardani, and Rohmah (2018).

The selection of Indonesian House of Representatives as the focal point of this study is grounded in Tipton's (2002) assertion that the digital divide prevalent in Asian countries significantly impedes ICT adoption in parliamentary processes. By analyzing the hurdles encountered in ICT adoption within The Indonesian Parliament, this research endeavors to identify optimal strategies for navigating the ICT adoption process in public institutions situated in regions characterized by digital disparities.

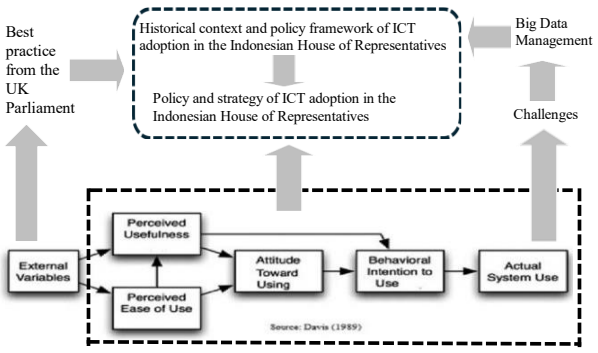


Figure 1 Research Framework

METHODS

This study employs a comprehensive approach, incorporating case studies, stakeholder analysis, and document review. The stakeholder analysis, as proposed by Varvasovszky (2000) and Gultekin

(2018), involves identifying the different groups involved in ICT adoption and their roles in the adoption process. Additionally, a comparative study with ICT adoption initiatives in other parliaments enriches the discourse on effective adoption practices.

To present a comprehensive analysis of the ICT adoption struggle in the Indonesian Parliament, this article is organized into distinct sections. Firstly, it explores the historical and political dimensions of ICT adoption at Indonesian House of Representatives. Establishing the historical background and legislative environment helps identify the initial conditions and driving forces behind the adoption of ICT.

Secondly, it discusses the challenges encountered in promoting ICT integration, highlighting the obstacles and complexities encountered in this process. Inn which it is crucial for devising effective strategies to overcome these barriers and enhance the ICT adoption framework.

Thirdly, it provides an overview of ongoing ICT adoption initiatives within the Indonesian Parliament, showcasing specific projects resulting from technology integration. It helps illustrate practical applications and success stories that can serve as models for future efforts.

Lastly, it conducts an analysis of the ICT adoption process in Indonesia's House of Representatives. This is for offering insights into the effectiveness of current practices and identifying areas for improvement to ensure a more seamless and impactful. Additionally, this study also makes a comparative analysis with processes in the UK Parliament as a best practice model. This step is important to provide a benchmark against a more mature parliamentary ICT system, and it offers insights into successful strategies and potential pitfalls, facilitating informed decision-making for future improvements.

This study used integrated multiple approaches to investigate the challenges of ICT adoption within the context of DPR RI. The primary methods employed include case studies, stakeholder analysis, and document review. This study examines the DPR RI ICT adoption process. The research sample comprises various stakeholders engaged in the ICT adoption process, including parliamentarians, administrative staff, IT professionals, and pertinent government officials.

Data collection methods in this study encompass the following: case studies, stakeholder analysis and document review. This research utilizes a case study approach. As explained by Yin (2014: 87-92), the selection of case study analysis in this research was chosen because case study analysis provides comprehensive guidance for the design and implementation of case studies, including how to effectively collect and analyses case data and using in-depth examination of specific ICT adoption initiatives and projects, along with their implementation processes in DPR RI. Another analysis used in this study is stakeholder analysis. As stated by Bryson (2004: 24-26), stakeholder analysis provides deep insights into techniques for identifying and analyzing stakeholders, which are useful for understanding the roles, interests, and perspectives of the groups involved in the process of ICT adoption. Therefore, stakeholder analysis in this study makes identification and characterization of various stakeholder groups involved in the ICT adoption process, elucidating their roles, interests, and perspectives.

This study also used *document review*. Thorough analysis of pertinent documents, reports, regulations, and policies were associated with ICT adoption within Indonesian House of Representatives. As explained by Bowen (2009: 27-40), document analysis serves as an effective qualitative research method for exploring and interpreting information found within documents related to ICT adoption.

Data analysis in this study entails qualitative techniques, including thematic analysis, content analysis, and comparative analysis (Miles, Huberman, & Saldana, 2013). Thematic analysis is employed to discern recurrent themes and patterns concerning the challenges, strategies, and outcomes of ICT adoption. Content analysis aids in scrutinizing and interpreting the contents of documents and reports. Comparative analysis facilitates comparisons between ICT adoption practices in Indonesian House of Representatives and those in other parliamentary contexts. This study aims to scrutinize implicit assumptions and assertions pertaining to the challenges and strategies of DPR RI ICT adoption. Through rigorous data analysis and interpretation, the study endeavors to corroborate or challenge these assumptions, thereby contributing to the advancement of knowledge in governance and public policy discourse.

RESULTS AND DISCUSSION

The history of ICT adoption in DPR RI is divided into two periods. The first period, spanning from

approximately 2015 to 2019, encompasses the emergence of policies and the ICT adoption process. The second period, which follows, focuses on the development of the Master Plan on Information and Communications Technology for Indonesian House of Representatives, occurring from 2019 onwards. the second period focuses on the development of the Master Plan on Information and Communications Technology for DPR RI. The initial phase of ICT implementation in DPR RI saw the establishment of policies laying the groundwork for ICT adoption. This phase was characterized by the designation of DPR RI as a modern parliament in 2015. The declaration of DPR RI as a modern parliament was formalized through the promulgation of DPR RI Decree Number: 13/DPR RI/I/2015, outlining the strategic plan for DPR RI from 2015 to 2019. Positioned DPR RI as a modern parliament, the Indonesian Parliament prioritized three main areas, namely information technology, freedom of access to information, and the reinforcement of representative functions. Consequently, the modernization of the Indonesian Parliament ideally involved the incorporation of modern indicators encompassing facilities (including ICT), tools, methodologies, and management practices in fulfilling the functions of DPR RI, alongside institutional responses to global initiatives.

The evolution of DPR RI into a modern parliament was facilitated by ICT adoption. ICT played a pivotal role in enhancing accountability for performance across parliamentary functions, such as the legislative dialogue process facilitated by online platforms or electronic systems. The strategic plan outlined the development of an integrated system to monitor member attendance, schedule meetings, manage documents with text-to-speech capabilities, and implement electronic voting technology. Additionally, ICT was leveraged to streamline administrative tasks, including human resources management. Furthermore, DPR RI aimed to establish electronic public relations and create a comprehensive database, incorporating mechanisms for addressing public grievances.

The inception of electronic public relations began with the issuance of assignment document Number: HP.00/17/BIROHUMAS/IV/2014, which tasked a social media team led by a communication researcher and comprising five Public Relations (PR) officers with planning, executing, and monitoring institutional activities across DPR RI's Twitter, Facebook, and YouTube accounts. Recognizing the increasing importance of e-PR, DPR RI Secretariat restructured the Institutional Framework within the Secretariat to establish the Office of Social Media Sub Department within the Information Office of Parliament, alongside existing departments such as the Parliamentary Radio Television Department and Magazine Department, as mandated by Presidential Regulation Number 26 of 2020 concerning DPR RI Secretariat.

The development of policies concerning ICT application in DPR RI management continues through the 2020-2024 strategic plan formulated by The Indonesian Parliament Secretariat, initially outlined in Regulation No. 10 of 2020 and subsequently amended by Regulation No. 18 of 2021. This strategic plan underscores efforts to enhance the provision of ICT services by DPR RI Secretariat to internal users and the public, alongside initiatives aimed at achieving transparency and e-governance.

Table 1 Policy and Strategy of ICT Adoption in the Indonesian Parliament

Policy	Strategy
Improve transparency and access to public data	1) Publish and regularly update data or documents on the Website for public use. 2) Integrate data into search engine. 3) Improve the dissemination of IT services provided by The Indonesian Parliament Secretariat to internal users and the public for information dissemination.
Improve electronic information and data services.	1. Create big data and command center. 2. Develop and implement the Information and Communications Technology Roadmap for the Secretary General of the Indonesian House of Representatives. 3. Create a paperless office system with the use of digital signatures. 4. Improve information technology governance consistent with the e-government system. 5. Improve information security.

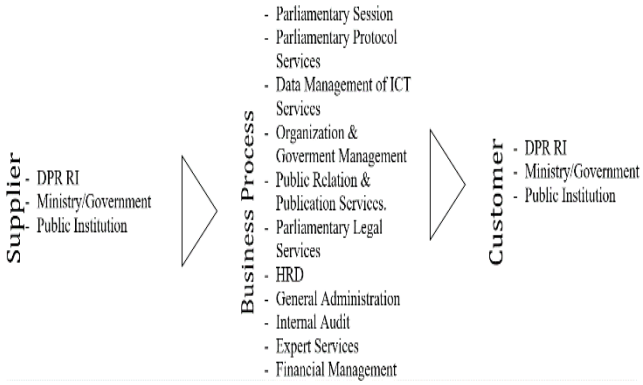
Source: DPR RI Secretariat Regulation No. 18 of 2021:20

Table 1 depicts DPR RI policies highlighting the imperative of bolstering information security in ICT

utilization. This underscores the Indonesian Parliament's cognizance of the criticality of information security vis-à-vis other ICT users in the country. Mauladi, Jaya, and Esquivias (2022) found that most Indonesian users currently evade direct exposure to cybercrime risks; however, the escalating trajectory of digital technology portends an augmented susceptibility. Moreover, ICT adoption aims to ameliorate documentation, archiving, and civil service employee management. Holá, Špačková, and Moravcová's (2017) research illustrates ICT's efficacy in enhancing human resource management. Nonetheless, observations reveal impediments in ICT adoption within DPR RI, particularly pertaining to data entry responsibilities. Instances abound where employees, entitled to promotion per state public agency regulations, encounter delays due to deficiencies in personnel management utilizing public service applications. While application availability appears adequate, there remains room for enhancement in sustained utilization and application usage.

The adoption of ICT within Indonesian House of Representatives during the second period is presently governed by the Master Plan on Information and Communications Technology, commonly referred to as *Rencana Induk Teknologi Informasi dan Komunikasi (RITIK)*, as outlined in DPR RI Secretary-General's Regulations No. 12 of 2020 pertaining to RITIK for Indonesian House of Representatives Secretariat for the 2020-2024 period. RITIK operates in accordance with the provisions delineated in Presidential Regulation (*Perpres)* No. 95 of 2018 concerning Electronic Government Systems (SPBE). SPBE, also recognized as e-government, serves as a governmental regulatory framework utilizing information and communications technology to establish streamlined, transparent, and accountable operational procedures and enhance public service quality. RITIK aims to ascertain stakeholder needs within DPR RI General Secretariat, particularly by devising an integrated framework for all The Indonesian Parliament Applications.

DPR RI Secretariat's business processes are classified into three categories, namely management processes, core processes, and support processes. As a support unit of Indonesian House of Representatives, the core process of DPR RI Secretariat entails managing parliamentary sessions. This foundational process is buttressed by management processes encompassing organizational and administrative management, human resource management, budget management, general administrative management, and internal control mechanisms. Furthermore, the core process is augmented by specialized services including legal services, information technology and data management services, public relations and publishing services, and protocol services.



Source: DPR RI Secretary-General's Regulations No. 12 of 2020: 43.

Figure 2 The Business Process Diagram in DPR RI

The analysis of "Navigating ICT Adoption in DPR RI: Insights, Challenges, and Comparative Perspective" reveals several key points. Firstly, the diagram illustrates that the business processes within the General Secretariat of DPR RI are triggered by interactions with the Indonesian House of Representatives Secretariat, government ministries/institutions, and the public. These processes generate products that are accessible to all stakeholders involved.Secondly, according to data from the *Rencana Induk Teknologi Informasi dan Komunikasi (RITIK)*, initially, there were 93 applications designed for the Indonesian Parliament. These applications were managed by various units within the organization. However, as the level of ICT adoption within Indonesian House of Representatives increased, significant changes occurred in the adoption process. Specifically, responsibility for managing ICT applications transitioned from lower-level departments to higher-level units, such as the Department of Data and Information Technology (BDTI) which is became the Central Information Technology Centre (Pustekinfo) previously known as the Department of Data and Information Technology (BDTI) in 2020. Database from applications are distributed. The advantage of distributing databases in this context is the increased efficiency and availability

of data for various units involved in application management. With distributed databases, these units can easily access and utilize data without relying on a single central point. This can enhance the organization's responsiveness and flexibility in addressing various needs and challenges.

However, the potential disadvantage is the complexity in managing and maintaining distributed databases. Good coordination is required between units using these databases to ensure data consistency, security, and application integration. Additionally, the risk of data loss or corruption may increase without strong mechanisms for data backup and recovery. Moreover, the number of ICT applications aimed at streamlining business processes within The Indonesian Parliament Secretariat continued to grow, reaching a total of 102 by August 2022. However, a portion of these applications, specifically 12, were classified as "Inactive" due to various reasons.

The inactivity of some applications relates to the dynamic nature of ICT adoption within the DPR RI Secretariat. For example, applications such as WFO and WFH, which were developed in response to the Covid-19 pandemic. However, once the pandemic ended, these applications became irrelevant and thus inactive. The findings of this research are an important note that one of the challenges for ICT adoption in the DPR RI is the need for continuous adaptation and refinement of ICT strategies to meet evolving organizational needs and external challenges including addressing unforeseen conditions such as the Covid-19 pandemic.

Additionally, the status of three applications was changed to reflect the introduction of new apps. These applications are categorized into 15 groups based on the Government Resource Plan (GRP), covering areas such as electronic public services, performance management, legal affairs, monitoring and evaluation, finance, procurement, human resources, learning management, information technology, planning, knowledge management, document management, protocol management, and user management and facility management.

Lesson From UK Parliament

Drawing on the TAM developed by Fred Davis and the Innovation Adoption Theory by Rogers, we can conduct a more detailed and scholarly exploration of the observations. TAM posits that the adoption of new technology is influenced by perceived usefulness and ease of use. In the context of DPR RI digital transformation efforts, historical policy and regulatory issues may not have served as significant barriers due to the perceived usefulness of ICT in enhancing parliamentary operations and the ease of incorporating ICT into existing workflows.

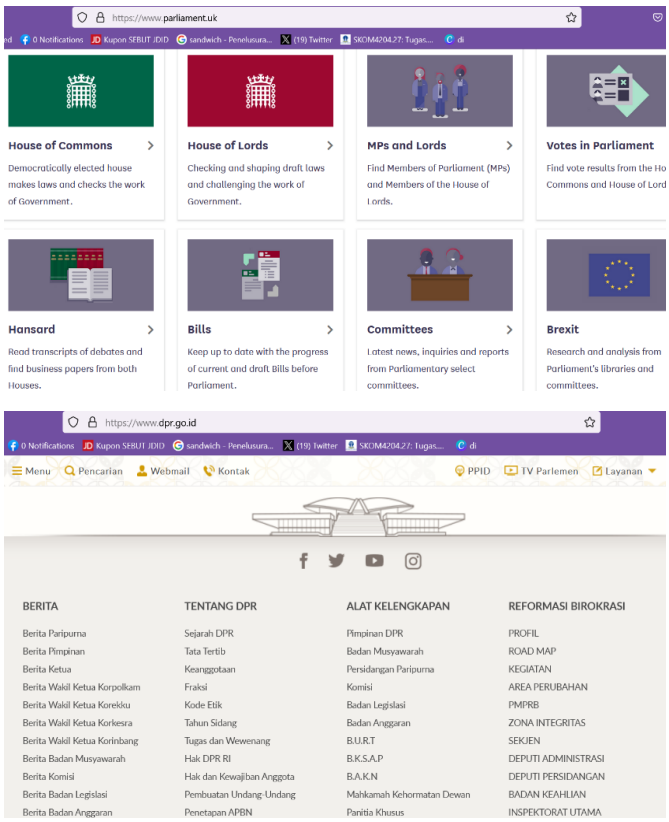
Examining DPR RI historical policy development in ICT adoption through the lens of TAM reveals the parliament's goodwill and receptiveness towards technological innovation. Despite potential challenges posed by policies and regulations, the perceived benefits of ICT adoption may have outweighed these obstacles, indicating a proactive stance towards embracing digital advancements.

Furthermore, when comparing DPR RI approach to publicizing parliamentary information with that of other parliaments, such as the UK Parliament, TAM analysis including the “Attitude Toward Usage”. In this case, the absence of a dedicated section on the Indonesian House of Representatives website showcasing parliamentary information may be attributed to factors such as organizational inertia, lack of awareness about the benefits of transparent information dissemination, or reluctance to change existing practices.

For example, the UK Parliament has several platforms that facilitate access to parliamentary information, such as Dill Digest and Hansard. Dill Digest is a publication that summarizes the activities and deliberations in Parliament on a weekly basis, providing an easy-to-understand overview of the issues being discussed. Meanwhile, Hansard is the official record of all Parliamentary debates, which includes a full transcript of what was said by MPs during the session. These two platforms allow the public to access parliamentary information easily and transparently.

However, in DPR RI, the absence of a similar section on their website could indicate a different attitude or a lack of awareness of the importance of transparency and public participation in parliamentary processes. By applying TAM analysis, it is possible to further evaluate attitudes and beliefs towards the use of online platforms for the publication of parliamentary information. This could help identify barriers that need to be overcome and improve efforts to increase transparency and public participation in the DPR RI, in line with best practices from other legislatures such as the UK Parliament.

Therefore, by integrating insights from TAM, policymakers, and stakeholders can devise targeted strategies to address the identified challenges and optimize ICT adoption efforts within Indonesian House of Representatives. This may involve enhancing the perceived usefulness and ease of use of ICT tools, raising awareness about the benefits of transparent information dissemination, and fostering a culture of innovation and openness to change within the parliamentary ecosystem. Additionally, leveraging comparative perspectives from other parliamentary systems, such as the UK Parliament, can provide valuable lessons and best practices for enhancing digital transparency and accountability in Indonesian House of Representatives. The analysis comparing the level of ICT adoption between the UK Parliament and Indonesian House of Representatives can also be conducted by involving a comparison of website management. Here we can compare the website management of the UK Parliament and Indonesian House of Representatives, as seen in the following.



Source: https://www.parliament.uk/ *and* https://www.dpr.go.id/

Figure 3 Lesson from UK Parliament

Lesson from the UK Parliament and DPR RI, it becomes evident that The Indonesian House of Representatives website does not adequately emphasize the primary function of the Parliament, namely its representative function, as evidenced by the absence of bill digest and Hansard on the website. Hansard refers to the official written record of parliamentary debates. Hansard is a record of parliamentary debates. For the official record of decisions and votes in one of the Houses of Parliament.

According to the layout of the Indonesian Parliament website, it does not adhere to Theory pattern "F". As per Theory pattern F, delineated by Lautenbacher (2012), when users access a web page, they typically first scan content horizontally in the area closest to the page (forming the "F" symbol), then move slightly leftward and scan content horizontally again in the adjacent area (forming the vertical "F" symbol). Subsequently, users tend to read further down the page in the lower half (beneath the letter "F"). Research conducted by Ferber, Foltz, and Pugliese (2005) indicates that parliamentary websites serve as effective tools to enhance public understanding of legislative activities. Consequently, The Indonesian Parliament website should consider restructuring its content by implementing the model of Theory pattern F. By adhering to this pattern, the placement of content increases the likelihood of users engaging with and absorbing the information provided. Based on the appearance of the Indonesian House of Representatives website, it's important to evaluate to what extent its layout affects the ease of use of the site. One model frequently used in web design is the "F" pattern theory. According to this theory, users tend to scan web pages in an "F" shaped pattern. They first look horizontally at the top of the page, then move slightly down and scan horizontally again, forming the first line of the "F" pattern. After that, users typically continue scanning vertically down the left side of the page, forming the second line of the "F" pattern.

The layout of a website significantly affects its ease of use. According to the theory pattern "F," users tend to scan content horizontally at the top of the page, then move slightly leftward and scan horizontally again in the adjacent area, forming the vertical "F" symbol. Subsequently, users typically read further down the page in the lower half, beneath the letter "F."As for adherence to Theory pattern "F," it is not a strict rule but rather a guideline based on user behavior patterns. However, research by Lautenbacher (2012) suggests that websites designed

following this pattern tend to be more user-friendly and facilitate information absorption. In the case of the Indonesian House of Representatives website, its layout does not adhere to Theory pattern "F." This means that the website may not be optimized for ease of use according to this model. As suggested by research conducted by Ferber, Foltz, and Pugliese (2005), parliamentary websites are effective tools for enhancing public understanding of legislative activities. Therefore, restructuring the content of The Indonesian Parliament website to align with Theory pattern "F" could improve user engagement and facilitate better absorption of information. By organizing content according to this pattern, the website can increase the likelihood of users effectively navigating and comprehending the information provided. Hence, we infer that the primary barrier to ICT adoption in the Indonesian Parliament lies in the level of expertise among human resources, particularly in understanding the acceptance of ICT among users. This echoes the principles outlined in TAM proposed by Fred Davis. TAM evaluates the "Perceived Ease of Use" of technology, emphasizing users' perception of its ease of use. Additionally, TAM incorporates the variable of "Perceived Enjoyment," which reflects users' satisfaction and enjoyment derived from technology usage. Consequently, Indonesian House of Representatives Secretariat could facilitate opportunities for ICT management personnel to explore various aspects of ICT management in analogous government institutions such as the National Research and Innovation Agency, leveraging media professionals' expertise in optimizing ICT-enabled media for efficient business process management.

The second impediment pertains to the weakness in human resource management within Indonesian House of Representatives particularly in overseeing ICT adoption processes. This deficiency mirrors broader shortcomings in Indonesian civil service management (Booth, 2021). Effective human resource management is crucial as it significantly influences the success of DPR RI transformation into a modern parliamentary entity. Addressing this challenge necessitates enhancements in human resource management practices, including clarifying employees' roles in data uploading tasks. Hence, Indonesian House of Representatives must not only bolster technical expertise but also foster a comprehensive understanding of ICT adoption processes, particularly from a communication standpoint. This strategic approach aims to enhance the usability and enjoyment of the IT systems being developed.

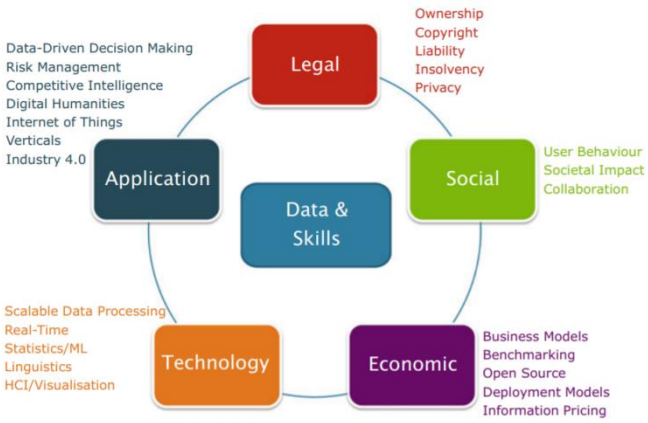
In terms of social media management, our assessment aligns with the conceptualization proposed by Chung et al. (2017), indicating that Indonesian House of Representatives social media presence has reached the formalization stage, as delineated by Hanafizadeh, Payam, and Sepideh Shafia (2021). This stage is characterized by meticulous content planning to align with Indonesian House of Representatives overarching programs and strategies, alongside stringent oversight, and coordination with The Indonesian Parliament's official programs. Furthermore, our observation reveals to Indonesian House of Representatives social media management encompasses multiple accounts, including a parliamentary television account, indicative of potential organizational silos hindering Indonesian House of Representatives advancement. To enhance public engagement, Indonesian House of Representatives can draw inspiration from the UK Parliament's social media management model, where parliamentary TV and radio serve as primary content providers for social media platforms, fostering a cohesive and engaging digital presence.

Parliamentary Big Data Management Challenges

On October 14, 2021, the Research Centre of Indonesian House of Representatives Specialized Agency initiated the National Webinagr titled "Advancing the Development of a Unified National Data Infrastructure." This event aimed to facilitate discussions essential for refining the implementation of Indonesian House of Representatives big data system, thereby contributing to the realization of one data in Indonesia. Data management within the Indonesian Parliament encounters complexities inherent in handling large volumes of data in the digital era, characterized as big data. Boyd and Crawford (2012) define big data as a system capable of searching, combining, and cross-referencing extensive datasets.

In essence, implementing a big data system entail addressing six fundamental aspects of the big data ecosystem: data and skills, legal considerations, social dynamics, economic implications, industrial technology, and applications. The adoption of big data systems presents a significant challenge for

organizations in ensuring the availability of skilled human resources proficient in managing data ecosystems. Illustrated below is a diagram depicting the Big Data Ecosystem, offering insights into the implications of big data systems on organizational governance:



Source: Cavanilla and Curry (2016: 9)

Figure 4 Big Data Ecosystem Diagram

The analysis based on TAM and the Innovation Adoption Theory reveals several critical aspects in the development of big data management within the parliamentary context. Firstly, the diagram underscores the indispensable need for a diverse array of professionals, including scientists, engineers, and technical experts proficient in analytics, statistics, machine learning, data mining, and data management. These individuals must possess comprehensive data understanding and domain expertise to effectively leverage data for organizational benefit.

Secondly, legal expertise emerges as a crucial aspect due to numerous legal considerations surrounding data management, such as ownership, use, protection, confidentiality, security, liability, cybercrime, and intellectual property rights. Addressing these legal issues is imperative to ensure compliance and mitigate legal risks.

Thirdly, significant technical challenges must be addressed major technical hurdles such as encompassing large-scale and heterogeneous data collection, efficient data storage, real-time processing and analysis, data preservation, advanced retrieval and visualization, intuitive user interfaces, interoperability, and data linkage. Developing solutions to these technical challenges is essential for maintaining or enhancing the competitive advantage of big data systems.

Fourthly, the growth of big data systems necessitates the development of innovative applications that add value. These applications should streamline and integrate existing systems to ensure interoperability, given the extensive range of ICT applications utilized within the Indonesian Parliament.

Fifthly, meaningful business processes are integral to the successful development and implementation of big data systems. Appropriately aligned business processes within the organization facilitate effective utilization and optimization of big data resources.

Lastly, the social aspect underscores the importance of understanding and managing the social implications of adopting big data systems within the organization. This aligns with the sociometrical perspective, emphasizing the interconnectedness of technology, individuals, and organizations, were technology influences activities and identities.

In accordance with The Indonesian Parliament Secretary General Regulation No. 12 of 2020, the management of big data within Indonesian House of Representatives encompasses three key aspects: data sources, data management, and data users. Additionally, within the data management realm, three levels of big data managers are identified, responsible for coordinating system development, organizing, and classifying information based on disclosure regulations, and ensuring data availability. The role of content providers is particularly emphasized, as effective data uploading is essential for the utility of ICT applications.

Based on in-depth interviews with the Head of The Information Technology Governance Section of the Secretariat General of the Indonesian Parliament, it is known that the end-to-end process for ICT adoption in the Indonesian Parliament is not yet 100% digital. However, some stages of the process have already been accommodated digitally. Yet, some stages remain non-digital. However, concerning employee payroll and all staff, it has reached around 60%. Meanwhile, the digitalization of travel for The Indonesian Parliament members and the Indonesian Parliament Secretariat is only at 70%. The highest adoption rate of ICT in digital system form is the digitization of the personnel system as the personnel system in The Indonesian Parliament is already connected to the National Civil Service Agency. Thus, it must already be digitally connected, resulting in a 95% adoption rate of ICT in the personnel system.

Based on recent interviews with the Head of The Information Technology Governance Section of the Secretariat General of Indonesian House of Representatives, it is revealed that the process of ICT adoption within the Indonesian Parliament is not yet entirely digital, despite significant progress. While certain stages of the adoption process have transitioned to digital platforms, others continue to rely on non-digital methods. For instance, while employee payroll processes have achieved a 60% digitalization rate, digital travel management for members of Indonesian House of Representatives and the Parliament Secretariat remains at only 70%. Notably, the highest level of ICT adoption in digital format is observed in the digitization of the personnel system, which is already integrated with the National Civil Service Agency, resulting in an impressive 95% adoption rate. These findings underscore the ongoing transition towards digitalization within Indonesian House of Representatives, highlighting both achievements and areas for further improvement.

Based on the information obtained from the interview with the Head of The Information Technology Governance Section of the Secretariat General of the Indonesian, it is evident that the adoption of ICT within DPR RI is still undergoing a transition toward complete digitalization. TAM could be applied to analyse this situation. According to TAM, the perceived ease of use and perceived usefulness of a technology significantly influence its adoption. In this case, the fact that some stages of the ICT adoption process have already been accommodated digitally suggests that users may perceive these digital systems as easy to use and useful, which facilitates their adoption.

Based on the evidence, DPR RI is currently situated in the implementation phase of the Innovation Adoption Theory. This stage signifies the practical assimilation of innovative technology into the organization's established systems and procedures. The assessment indicates active management of ICT adoption endeavors within the House, alongside efforts to address challenges related to data management and stakeholder engagement. Nonetheless, elements indicative of the persuasion phase endures, as endeavors persist to alleviate resistance and secure full stakeholder buy-in towards the advantages of ICT adoption. Furthermore, from the Innovation Adoption Theory provides insights into the adoption process within organizations. According to this theory, the adoption of innovations is influenced by factors such as the complexity of the innovation, its compatibility with existing practices, and the observability of its benefits. In the context of Indonesian House of Representatives, the relatively high adoption rate of ICT in the personnel system can be attributed to its compatibility with existing practices and its observability in improving efficiency and accuracy in personnel management. The Innovation Adoption Theory provides insights into the adoption process within organizations. According to this theory, the adoption of innovations is influenced by factors such as the complexity of the innovation, its compatibility with existing practices, and the observability of its benefits. In the context of Indonesian House of Representatives, the relatively high adoption rate of ICT in the personnel system can be attributed to its compatibility with existing practices and its observable improvements in efficiency and accuracy in personnel management.

Based on the description provided, it is difficult to determine which category of adopters the Indonesian parliament has without further information on their behaviour and characteristics in terms of adopting innovations. However, given that they are currently applying the Innovation Adoption Theory and actively managing ICT adoption activities, they may belong to the late majority category. These groups usually adopt ideas after they have been tested and confirmed by the initial recipients, but before they become fully widespread. However, the slower adoption rates in other areas, such as employee payroll and travel digitalization, may be indicative of challenges related to perceived complexity or compatibility issues with existing systems. These challenges could hinder the adoption process, highlighting the importance of addressing user concerns and providing adequate support and training to facilitate the transition to digital systems. Overall, applying TAM and the Innovation Adoption Theory can help in understanding the factors influencing the adoption of ICT within DPR RI and guide efforts to overcome barriers and accelerate the digitalization process.

In the context of research on ICT Adoption in the House of Representatives, analysis of various studies using the Technology Acceptance Model (TAM) can provide an in-depth understanding of the factors that influence technology acceptance and adoption in a parliamentary context. These studies, such as those conducted by Ilyas et al. (2023), de Andrés-Sánchez et

al. (2024), Shyr et al. (2024), and Thanomsing and Sharma (2024), explore user behavior towards technology in various contexts, which can provide valuable insights into the challenges and relevant strategies for ICT adoption in the House of Representatives.

Meanwhile, linking the research to lessons learned from the UK Parliament is also important in understanding steps that can be taken to improve ICT adoption in the House of Representatives. Examples from the UK Parliament, such as the use of Dill Digest and Hansard, demonstrate how information technology can be used to effectively publicize parliamentary information. A TAM analysis in this context, including factors such as attitude towards use, behavioral intention, and actual system use, can provide insight into how users behave and are receptive to ICT adoption initiatives in parliament. As such, utilizing lessons learned from the UK Parliament and applying them in a TAM analysis can assist in designing effective strategies to increase ICT adoption in the House of Representatives.

CONCLUSION

The adoption of ICT within the DPR RI is currently in the early stages, indicating that there is still room for improvement and further development in this area. A notable observation is the absence of comprehensive data related to legislative matters, highlighting the necessity of promptly completing the implementation of a big data system within the DPR RI. Specifically, there is a need to prioritize the availability of bill summaries to facilitate broader public engagement in the legislative process. By realizing the implementation of a big data system in ICT adoption, which involves the public as end-users in a democratic process, real-time access to up-to-date data on bill discussions can be made possible.

In addressing the integration of big data within DPR RI, collaboration with the National Research and Innovation Agency is essential. Establishing a big data system within DPR RI will not only enhance its own data management capabilities but also contribute to the broader national initiative of achieving one data in Indonesia. Given its multifaceted roles encompassing legislation, oversight, budgeting, and diplomacy DPR RI holds a significant potential as a data provider for the One Data initiative.

Although this research provides valuable insights into the historical and political dimensions of ICT adoption in DPR RI, this study has several limitations. The limitations of this study may include limited scope such as the focus on DPR RI and comparison to the United Kingdom as best practice may not completely represent the broader global context or other important case studies such as studies on the adoption of information and communication technology in parliaments in other Asian countries or developing countries that have similar challenges.

Another weakness of this other study is that this study does not carry out an analysis that there are potential regulatory changes and political shifts that could affect the long-term implementation of findings related to the adoption of Information and Communications Technology in DPR RI.

Among the various weaknesses of the study, a number of future works that can be done is as follows: based on best practices in the UK Parliament and adoption of innovations that have been adapted to the organizational conditions in DPR RI, and can gather feedback from users of the organization about their experience with the ICT solutions that has been adopted as well as inventory the various obstacles that they encounter. Secondly, working with other institutions and parliamentary organizations both domestically and internationally to compare practices and share best practices in ICT adoption and governance. This exchange of knowledge can provide valuable insights and lessons learned for sustainable improvement.

Acknowledgment

I express my deepest gratitude to The Head of the Pustekinfo the Indonesian Parliament Secretariat Djaka Dwi Winarko, and Director of the Information Technology Centre of Indonesian House of Representatives Secretariat, Fariza Emra, for their willingness to grant access to the Indonesian House of Representatives web portal, ICT systems, and policy and regulation data, enabling us to observe and analyze them for this manuscript.

REFERENCES

Abu-Shanab, Emad, Raya Al-Dalou, and Rawan A. T. 2018. "E-Parliament in Jordan: Challenges and Perspectives." *International Journal of Public Sector Performance Management* 4 (4): 516–31. https://doi.org/10.1504/IJPSPM.2018.095265.

Alhashem, A., Alotaiby, B. A., Al thobaiti, R. B., Almaktoomi, M. M., Alzahrani, S. I., Albaiz, A. A., Aboul-Enein, B. H., & Benajiba, N. (2023). Adoption of antenatal care conversation mapping among health care providers in Saudi Arabia: Application of the diffusion innovation theory. *PLoS ONE*, *18*(6 June), 1–15. https://doi.org/10.1371/journal.pone.0286656

Almaiah, M. A., Alfaisal, R., Salloum, S. A., Hajjej, F., Shishakly, R., Lutfi, A., Alrawad, M., Al Mulhem, A., Alkhdour, T., & Al-Maroof, R. S. (2022). Measuring Institutions' Adoption of Artificial Intelligence Applications in Online Learning Environments: Integrating the Innovation Diffusion Theory with Technology Adoption Rate. *Electronics (Switzerland)*, *11*(20), 1–20. https://doi.org/10.3390/electronics11203291.

Booth, A. 2021. *A Diagnostic Study of the Civil Service in Indonesia*. *Bulletin of Indonesian Economic Studies*. Vol. 57. https://doi.org/10.1080/00074918.2021.1956406.

Bowen, G. A. (2009). Document analysis as a qualitative research method. Qualitative Research Journal, 9(2), 27-40.

Bryson, J. M. (2004). What to do when stakeholders matter: Stakeholder identification and analysis techniques. Public Management Review, 6(1), 21-53.

Campagna, J. M., & Bhada, S. V. (2024). Strategic Adoption of Digital Innovations Leading to Digital Transformation: A Literature Review and Discussion. *Systems*, *12*(4), 118. https://doi.org/10.3390/systems12040118

Cavanillas, J. M., & Curry, E. (2016). *New Horizonsf or a Data-Driven Economy: A Roadmap for Usage and Exploitation of Big Data in Europe*. (J. M. Cavanillas, E. Curry, & W. Wahlster, Eds.) Saarbru¨cken, Germany: Springer. doi:10.1007/978-3-319-21569-3.

Christou, P. A. (2023). The Use of Artificial Intelligence (AI) in Qualitative Research for Theory Development. *The Qualitative Report*, *28*(9), 2739–2755. https://doi.org/10.46743/2160-3715/2023.6536.

Chuen, W. V., & Topimin, S. (2023). Review of Technology Adoption Studies in Small and Medium Enterprises (SMEs): A Proposed Theoretical Framework for Malaysian SMEs in the Rural Context. *Global Business & Management Research*, *15*(3), 315–336. http://e-resources.perpusnas.go.id:2048/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=ent&AN=172314889&site=ehost-live

Chung, A. Q., Andreev, P., Benyoucef, M., Duane, A., & O'Reilly, P. (2017). Managing an organisation's social media presence: An empirical stages of growth model. International Journal of Information Management, 37(1), 1405-1417. https://doi.org/10.1016/j.ijinfomgt.2016.10.003

Davis, F. D. (1989). "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology". MIS Quarterly, 13(3), 319-340. doi:10.2307/249008.

de Andrés-Sánchez, J., Arias-Oliva, M., Souto-Romero, M., & Gené-Albesa, J. (2024). Assessing the Acceptance of Cyborg Technology with a Hedonic Technology Acceptance Model. *Computers*, *13*(3). https://doi.org/10.3390/computers13030082.

de Vargas, D., & Fontoura, L. M. (2024). Problems and solutions in adopting information and communication technology in micro and small enterprises. *International Journal of Information Systems and Project Management*, *12*(1), 43–73. https://doi.org/10.12821/ijispm120103.

Ferber, Paul, Franz Foltz, and Rudy Pugliese. 2005. "Computer-Mediated Communication in the Arizona Legislature: Applying Media Richness Theory to Member and Staff Communication." State and Local Government Review 37 (2): 142–50. https://doi.org/10.1177/0160323x0503700205.

Fitsilis, Fotios, Dimitris Koryzis, Vasilios Svolopoulos, and Dimitris Spiliotopoulos. 2017. "Implementing Digital Parliament Innovative Concepts for Citizens and Policy Makers." *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 10293 LNCS (April 2018): 154–70. https://doi.org/10.1007/978-3-319-58481-2_13.

Gultekin, Yasar Selman. 2018. "Stakeholder Analysis and Stakeholder Management: A Conceptual Framework for Turkish Forestry." *International Journal of Humanities and Cultural Studies* 5 (3): 142–57.

Hanafizadeh, Payam, and Sepideh Shafia. 2021. "Appropriate Social Media Platforms Commensurate with the Maturity of Organizations." *Journal of Telecommunications and the Digital Economy* 9 (3): 12–57. https://doi.org/10.18080/JTDE.V9N3.421.

Ilyas, M., ud din, A., Haleem, M., & Ahmad, I. (2023). Digital entrepreneurial acceptance: an examination of technology acceptance model and do-it-yourself behavior. *Journal of Innovation and Entrepreneurship*, *12*(1), 1–20. https://doi.org/10.1186/s13731-023-00268-1.

Johnpaul M, & G, J. Pr. (2024). A Rung Towards the Digitalization of Tourism Servieces inIndia: Assessment

of Individual Perceptions Using Technology Acceptance Model. *Atna-Journal of Toursim Studies*, *19*(1), 133–150.

Kusumawardani, V., & Rohmah, U. (2018). Adopsi inovasi penyuluhan keamanan pangan badan pengawas obat dan makanan republik indonesia. *Jurnal Studi Komunikasi Dan Media*, *22*(1), 45–64. http://www.pom.go.id/penyidikan/media.php?hal=jenis_pelanggaran&halaman=1

Lautenbacher, Olli Philippe. 2012. "From Still Pictures to Moving Pictures: Eye-Tracking Text and Image." *Eye-Tracking in Audiovisual Translation.*, January 2012: 135–55.

Miles, M. B., Huberman, A. M., & Saldana, J. (2013). Qualitative data analysis: A methods sourcebook (3rd ed.). Thousand Oaks, CA: Sage Publications: 69-73.

Muranganwa, I., & Naidoo, R. (2023). Assessing Organisations' Readiness To Adopt Green Information Technology: the Case of a South African Information Technology Services Vendor. *South African Journal of Industrial Engineering*, *34*(2), 79–91. https://doi.org/10.7166/34-2-2881.

Mukherjee, S., Baral, M. M., Lavanya, B. L., Nagariya, R., Singh Patel, B., & Chittipaka, V. (2023). Intentions to adopt the blockchain: investigation of the retail supply chain. *Management Decision*, *61*(5), 1320–1351. https://doi.org/10.1108/MD-03-2022-0369.

Mukherjee, S., Baral, M. M., Lavanya, B. L., Nagariya, R., Singh Patel, B., & Chittipaka, V. (2023). Intentions to adopt the blockchain: investigation of the retail supply chain. *Management Decision*, *61*(5), 1320–1351. https://doi.org/10.1108/MD-03-2022-0369.

Özşahin, M., Çallı, B. A., & Coşkun, E. (2022). ICT Adoption Scale Development for SMEs. *Sustainability (Switzerland)*, *14*(22), 1–29. https://doi.org/10.3390/su142214897.

Panopoulos, A., Theodoridis, P., & Poulis, A. (2018). Revisiting innovation adoption theory through electronic public relations. *Information Technology and People*, *31*(1), 21–40. https://doi.org/10.1108/ITP-05-2016-0101.

Park, H., & Lee, K. (2019). "Assessing the Impact of ICT Adoption on Parliamentary Performance: A Case Study of South Korea". *International Journal of Public Administration*, *42*(7), 574-588. doi:10.1080/01900692.2018.1441719

Popa, I., Cioc, M. M., Popa, Ștefan C., Botez, D., & Pantea, Și M. I. (2023). Aligning Public Policy with REPowerEU Program Objectives by Adopting EESS Solutions: A Technology Acceptance Model Approach. *Amfiteatru Economic*, *25*(64), 456–472. https://doi.org/10.24818/EA/2023/64/660

Putra, E. L., Suseno, J., & Napitupulu, D. (2023). Pengembangan Aplikasi Dengan Menggunakan Metode Design Science Research (DSR) Berdasarkan Analisis Technology Readiness Index (TRI) dan Technology Acceptance Model (TAM) Application Development Using Design Science Research (DSR) Methodology Based. *Jurnal Pekommas*, *8*(2), 137–148.

Rogers, E. M. (2003). Diffusion of Innovations. Free Press.

Sanofi, Z., & Sherlin, I. (2023). Analisis Model UTAUT pada Adopsi TIK di Institusi Komisi Pemilihan Umum (KPU). *Jurnal Pekommas*, *8*(2), 119–128. https://doi.org/10.56873/jpkm.v8i2.5142

Singh, R., & Kumar, A. (2019). "ICT Adoption in Indian Parliament: Challenges and Prospects". *Journal of Asian Public Policy*, *12*(4), 460-476. doi:10.1080/17516234.2018.1477346

Shyr, W. J., Wei, B. L., & Liang, Y. C. (2024). Evaluating Students' Acceptance Intention of Augmented Reality in Automation Systems Using the Technology Acceptance Model. *Sustainability (Switzerland)*, *16*(5). https://doi.org/10.3390/su16052015.

Smith, J. A., & Jones, B. C. (2019). "Digital Transformation in Parliamentary Settings: Challenges and Opportunities". *Journal of Public Administration Research and Theory*, *29*(4), 567-584. doi:10.1093/jopart/muy070.

Thanomsing, C., & Sharma, P. (2024). Understanding instructor adoption of social media using the technology acceptance model. *Journal of Research in Innovative Teaching and Learning*, *17*(1), 47–65. https://doi.org/10.1108/JRIT-04-2022-0021

Tipton, S. M. (2002). Social Differentiation and moral pluralism. In R. Madsen, W.M. Sullivan, A. Swidler & S.M. Tipton (Eds.), Meaning and Modernity, Religion, Polity and Self (pp. 15-40). Berkley: University of California Press.

Varvasovszky, Z. 2000. "A Stakeholder Analysis." *Health Policy and Planning* 15 (3): 338–45. https://doi.org/10.1093/heapol/15.3.338

Yang, Q., & Shi, F. (2024). A Technology Acceptance Model (TAM) towards use Intention of E-wallet Among Youth in Malaysia. *UCJC Business and Society Review*, *21*(80), 18–47. https://doi.org/10.3232/UBR.2024.V21.N1.01.

Yin, R. K. (2014). Case study research: Design and methods (5th ed.). Thousand Oaks, CA: Sage Publications: 87-92.

Halaman ini sengaja dikosongkan