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The Dynamics of iOS-Based e-Attendance Implementation: A Study on User Experience at Arma Jaya Sub-District Office, North Bengkulu

Fanro[1*], Neli Rohati[1], Yuni Indah[1], Laora Angelia Dacosta[1] dan Okta Mela Sari[1]

[1]Ratu Samban University, Indonesia

Abstract

The digital transformation in government administration has driven the adoption of e-Government, including the iOS-based digital attendance system implemented by the North Bengkulu Regency Government under Regent Circular No: 800.1.9/0285/BKPSDM of 2024. This study analyzes user experience with the iOS-based e-attendance application at the Arma Jaya Sub-District Office using a qualitative, exploratory approach through Focus Group Discussions (FGD) involving 18 employees, along with interviews with academics and policymakers. The analysis focuses on efficiency, satisfaction, error rates, and ease of learning. Findings indicate that the application improves attendance recording efficiency, saves time and operational costs, and facilitates employee discipline monitoring. However, network instability often results in recording errors, and some employees find the system lacks advanced features. While this implementation enhances government accountability, improvements in technology infrastructure and employee training are needed to maximize its benefits. In conclusion, although the iOS-based e-attendance system enhances transparency and efficiency, technical barriers highlight the necessity for system upgrades and better infrastructure support to ensure its long-term effectiveness.

Keywords: E-Government; Administrative Efficiency; Digital Transformation; Human Resource Management

[*] Corresponding author email: yi13061978@gmail.com

Introduction

Changes in industry 4.0 technology have affected the paradigm change of public administration that wants to realize good governance through digital transformation. Digital transformation in e-government is the need to create more efficient and satisfying services for its users. As mentioned (Strohmeier, 2020) Digital transformation is characterized by human resources which are the key elements that are the driving force in every transformation effort. Adopting the right digital innovation, will automate the routine work of human resource management so that work productivity is maximized. In the digital era, almost everyone uses an android phone, this is confirmed by a survey conducted by CNN Indonesia that as many as 85% of the Indonesian population uses mobile phones to access the internet. Various apps can be easily downloaded through the app store. With Android phones make all the work easier. Similarly, work such as attendance activities and attendance recording, which was initially done manually was replaced by fingerprint attendance and has recently been changed to IOS information system-based attendance.

Employee attendance during working hours is essential. With the presence of ASN during working hours, services can be immediately provided to people in need Unhealthy bureaucracy is caused by low employee performance. Employee absenteeism is one of the bureaucratic pathologies that causes the work of the organizational system to be slow and unhealthy. In the end, it has an impact on low public satisfaction with Government services as a service provider. Flat (McHugh, 2002) in his research in Northern Ireland stated that employee absenteeism is a viral infection that affects the health of organizations. In addition, entering work during working hours is an obligation of ASN as regulated in Government Regulation No. 94 of 2021 Article 4 letter f. Innovative technological approaches have been used in monitoring employee attendance. In Indonesia, employee attendance data recording has undergone a significant transformation in the last decade. Starting from manual system attendance, fingerprints to digital attendance. In 2017, the Bengkulu City Government began to implement fingerprint absenteeism and face sensors or Finger Print. Furthermore, it was followed by other districts in Bengkulu province, including North Bengkulu. In North Bengkulu Regency, the percentage of fingerprint applications is the basis for paying Income Enhancement Allowance (TPP). Regional Secretary of North Bengkulu Regency (2017) Haryadi explained that with the fingerprint attendance system, the accuracy level of employee attendance will be better. Because this system requires the employee concerned to be absent. In contrast to manual absences, which can be delegated to other employees to sign or paraphrase attendance lists.

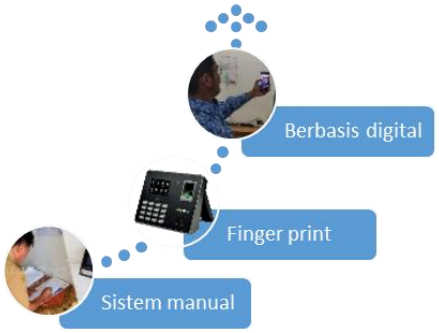


Figure 1. Transformation of attendance recording in Indonesia

Digital transformation to realize better bureaucratic reform continues to be carried out by the North Bengkulu Regency Government, in December 2022 BPSDM began to implement an android-based e-attendance application system. The activity began with the socialization of Android-based Mobile Attendance for State Civil Servants (ASN) of the BU Regency Government which was held on December 26-27, 2022 in the BKAD BU meeting room. According to the Secretary of BU Regency H. Fitriyansyah, S.STP, MM, this application is very useful to facilitate work in repeating the presence of ASN every month, with this electronic absence can also order all Civil Servants, so that all activities within the scope of the BU Regency government will run more efficiently, digitization of services is the beginning to overcome corruption, in accordance with the direction of the KPK, CPC.

Starting January 2, 2023, North Bengkulu Regency employees are required to enter the attendance list with the online system. Employees are required to submit a photo of themselves in the attendance application that has been prepared by the agency, accompanied by information on the location, coordinate point and time of attendance. The presence of this online system is still complained about by most civil servants, because of the difficulty of accessing the attendance web and the network which is often problematic, so that sometimes the attendance time and arrival time of government employees are not synchronized. There is a fact that the recap of the presence of ASN has not been full, one of which is employees in Arma Jaya District. With various problems faced, the North Bengkulu Regency Government continues to carry out development (upgrade).

The implementation of the development version of the e-attendance application (iOS-based) is contained in the Circular Letter of the Regent of North Bengkulu No: 800.1.9/0285/BKPSDM of 2024 concerning the Implementation of the Development of Electronic-Based Attendance Applications (E-Absensi) for State Civil Apparatus (ASN) and State Civil Apparatus (NON ASN) within the North Bengkulu Regency Government. In the circular, every employee working within the scope of the North Bengkulu Regency Government is required to delete the old e-Attendance application and is required to install the development version of the e-Attendance (Upgrade) application on the play store or app store on the same gadget device that is currently being used and conduct a trial use of the development version of the e-Attendance (Upgrade) application from January 15, 2024., to February 15, 2024.

The upgraded iOS-based e-Attendance application introduces several new features to enhance efficiency and accountability. The Out-of-Office Work Menu includes a camera function and requires leadership approval, allowing ASN and Non-ASN employees, such as those in UPTD, agricultural extension, midwifery, and school supervision, to record attendance remotely when working outside designated office locations. The application also incorporates a TPP (Income Increase Allowance) calculation system, where 40% is based on attendance and 60% on performance input. Additionally, the Daily Work Report (LHK) feature records work duration until completion, ensuring comprehensive performance tracking. For Regional Public Homes and Health Centers, the system allows

24/7 attendance logging to accommodate shift-based work schedules. Lastly, the Performance Report Submission requires employees to input time durations in minutes to ensure they meet the standard 7.5-hour work requirement per day. These enhancements aim to streamline attendance monitoring and improve workforce management across various sectors.

As part of the regional governance of North Bengkulu Regency, the Arma Jaya District Office also follows the policy of conducting e-attendance using an iOS-based application. Armajaya is a sub-district that was expanded in 2012. The expansion of the sub-district aims to the distance and time of services provided to the community are shorter, facilitate community empowerment activities in development in each sector, and facilitate increased security due to the reduction of areas after expansion. In addition, expansion can increase development both physical and non-physical, especially vital objects needed by the community, as well as facilitate the improvement of human resources and the processing of existing natural resources (Beautiful, 2023). As a representative of the local government, Arma Jaya District is required to provide excellent service to the community. For this reason, employee discipline is needed in the form of the presence of employees in the office during working hours accompanied by behavior in providing services in accordance with the principle good governance (Rajagukguk et al., 2022).

The use of this e-attendance application should facilitate monitoring the performance of ASN and prevent the emergence of bureaucratic pathologies such as fraud that occurs in manual attendance, including ASN present but not at the work site during office hours) and minimize delays or employee absences. ASN really tries to carry out its main duties and functions in order to provide public services to the community. Thus, a well-performing local government organization will be produced. The fact in the field of using e-attendance before there was an application development version, there were still employees who committed fraud such as entering attendance while physically not in the office. Employees can still edit data, as if they were present in the office, but this is not the case. Instead of increasing work productivity, employees are not like public servants who should be in the office. Failed access also often occurs in attendance recording as a result of employee attendance not recorded in the online system. In addition, there is a literacy gap between employees. E-attendance as a manifestation of e-governance transformation is not only an administrative tool but is expected to be a tool to create work efficiency, create user satisfaction, increase productivity in the work environment and also suppress bureaucratic pathologies such as slow, non-transparent and convoluted services.

From this background, the author is interested in learning how the user experience of the iOS-based e-attendance application (upgraded version) of the Arma Jaya District Office, North Bengkulu Regency. Research on the user experience on iOS-based e-attendance applications is essential to ensure whether the application can optimally meet user needs, improve work efficiency, and encourage the application of technology in the workplace. An e-attendance application, as part of a human resource management system, should be easy to use, reliable, and provide a pleasant experience so that users can use it without any technical

barriers or hassles. The importance of user experience research is expressed by (Gabriel, Ndung'u, Kamau., et.al., 2016) The user experience of e-government websites is considered to be one of the important factors that affect the success or failure of e-government websites. However, researchers have focused on infrastructure issues that do not pay attention to the website user experience as one of the factors influencing the use of government services. E-Attendance also presents an opportunity for public administration to innovate and improve service delivery.

Other research has been conducted on user experience conducted by (Sala Aritz, Arrue Myriam, 2022) who said e-Government applications should prioritize user-friendly design to make it easier to navigate and complete tasks. In addition, research on users is also carried out by (Pristi Sukmasetya, 2018) That pragmatic approach, which focuses on functionality, often masks user-friendliness in e-government services. The discussion in this article combines the framework of understanding information technology with the study of public administration.

Methods

The research method uses a qualitative approach of exploration. The data collection technique is to conduct departmental interviews with informants in the FGD (Focus Group Discussion) forum. The respondents to the study were 18 people. The sampling technique used is a total sampling technique, meaning that all employees of the Arma Jaya District Office are used as research samples. The main informant of the research was the Arma Jaya District Office Employee. The main informants were the Head of the Sub-district Head and the Head of the Arma Jaya District Office. Expert informants come from academics in the field of public administration who study e-government. The research focuses on the user experience of the e-attendance application using 4 aspects, namely efficiency, satisfaction, the rate of frequent errors and learning ability.

Result and Discussion

Dynamics of E-Government Implementation

Digital transformation encourages the Government to continue to adapt to digital-based governance to create effective and efficient services. As a commitment to this goodwill, the Government issued Presidential Instruction No. 3 of 2003 concerning National Development Policies and Strategies e-Government which has been explained about the administration of the state with e-Government. This policy is proof of the Indonesian government's efforts to improve the quality of public services by implementing e-Government. According to (Tasyah et al., 2021) e-Government is the use of information technology by the government that can allow the government to change relations with the community, the private sector, and also interested parties. The use of this information technology can be in the form of the internet, mobile phones, computers, or others. This system was formed as a distribution of services formed by the government in digital form.

(Yuhefizar et al., 2017) In his academic text, it is stated that e-government or E-government is the use of information technology by the government to provide information and services. Furthermore, it is also mentioned that

the digital-based service model is: G2C, G2G, G2B and G2E. First, G2C (Government to Citizen) is one of the models that allows the provision of direct government services to the public through digital platforms and technologies. The main goal of G2C is to improve the accessibility, efficiency, and transparency of government services. By utilizing digital information technology, it will make it easier for citizens to interact with the government, cut bureaucracy, and improve the government's response to the needs of civil servants. Second, G2G (Government to Government), one of the models of intergovernmental cooperation that utilizes information and communication technology to increase efficiency, coordination, and integration between government agencies or units both vertically and horizontally. With the integration of systems between government agencies in the hope that it can have an impact on improving the quality of public services. Third, G2B (Government to Business) which includes all forms of interaction and cooperation that occur between the government and business actors (non-government) using digital technology. This includes the provision of services, the exchange of information, and business processes between government entities and business or non-government entities. G2B becomes a strategy for e-government which is important to increase openness, efficiency, and harmonious relations between the government and the business sector in supporting economic growth. The fourth model, is the type of service that exists in G2E (Government to Employees) with internal government targets. G2E is The digital services provided by the government to its employees so that they have an impact on efficient administration, targeted human resource development and opportunities based on meritocracy to avoid feudal, aristocratic or kleptocratic culture. Government to Employee (G2E) Type is a type of relationship between the government and its employees. This relationship aims to improve the performance and welfare of employees working in one of the government agencies. E-attendance is one type of Government to Employees (G2E).

Indonesia has been running e-government for 21 years and now almost every local government has a digital-based application system. (Sirat, 2013) said that the implementation of e-government in Indonesia has experienced quite rapid development. This can be seen from the results of the 2012 e-gov survey conducted by the United Nations Department of Social and Economic Affairs. The survey stated that the e-Gov Development Index in Indonesia in 2010 was 0.4026. In 2012 it increased to 0.4949. In terms of the ranking of world e-gov development, Indonesia's e-gov development index in 2010 was ranked 109th, then in 2012 it was ranked 97th. However, the interesting thing is that although the development of e-government in Indonesia is quite rapid, the implementation of ICT in various sectors has also experienced many failures. Rosacker, Kirsten M, Olson David in (Sirat, 2013) mentioned that over the past two decades, investment in ICT has experienced a significant increase in both the public and private sectors, but the failure rate is still very high. Heeks in ((Sirat, 2013) said that the failure rate of e-gov implementation in developing countries reached 85%. 35% of the failure rate is caused by rejection or not implemented at all or also implemented shortly after being rejected. 50% classified partial failure (the main

goal could not be achieved or the benefits were not as expected) as total failure (e-gov was not implemented at all or was implemented shortly afterwards rejected).

In his research (Sirat, 2013) By comparing the determinants of e-government success from 4 articles and taking 9 determinants of e-government success, namely: security, organizational culture, training, vision and goals, strategic planning, leadership support, infrastructure, finance and collaboration.

Stephen Smith and Rodger Jamieson in (Sirat, 2013) Defining information system security is an effective policy implementation to ensure the confidentiality, availability and integrity of information and assets so as to avoid theft, destruction, manipulation and alteration. Digital security vulnerabilities can lower the level of trust in digital systems. Digital vulnerability needs to be considered by the Regional Government on how to make policy regulations on the protection of employee data. Organizational culture as described by (David, 2012) Manifestations of culture (values, beliefs, assumptions, perceptions, behavioral norms, artifacts, behavioral patterns) that give meaning to a person's behavior in an organization. Organizational culture is central to managing change and knowledge. The culture of organization greatly influences how these applications are implemented. Readiness and openness to changes in technological innovation greatly affect how these applications are implemented.

Employee learning or training is very decisive in the successful implementation of e-government. Lack of employee learning is one of the obstacles to the adoption and implementation of e-gov (Nurdin et al., 2011). If in implementing e-government, the Government does not provide training to employees, then employees do not have the ability to use technology. A clear vision and mission in the implementation of e-government is the main determinant of success. Mentioned by (Nurdin et al., 2011), in the implementation of e-gov, the existence of a clear mission, vision and goals during the adoption and implementation process of e-government is very important to maintain the direction of the organization in the future. Strategic planning provides a direction to develop e-gov from the current condition to the desired condition in the darang period. E-gov will be more effective with a comprehensive strategic planning process, which is the first step of considering the need for change and then determining the right action (Koh et al., 2006). Flexibility is needed to make adjustments over time as a project progress.

E-government is also affected by the appropriate IT infrastructure to support the systems and applications that must be built. A World Bank report states that many e-govs from developing countries fail to build a solid IT infrastructure for e-gov deployment. The lack of IT infrastructure support can cause the government or employees to be unable to move to a more complex e-government implementation. The infrastructure support owned by each region greatly affects the implementation of the e-attendance system. The infrastructure of e-attendance applications such as stable internet connections includes fairness in accessing the internet network, hardware and software reliability support, and device maintenance. The implementation of e-government requires financial resources and

human resources. The implementation of e-government requires physical and social capital as well as sufficient funds (Altameem et al., 2006).

Collaboration between the government and the private sector as IT service providers is also very decisive in the successful implementation of e-government. Collaboration can create a conducive communication and environment for the implementation of e-government programs. Learning from Singapore, the high level of cooperation in the adoption and implementation of e-gov will result in a strong responsibility and commitment to support the success of e-gov projects as seen in the adoption of e-gov in Singapore (Ha, 2013).

Transformation of e-Attendance Application

The dynamics of the implementation of digital-based applications in each region in Indonesia are greatly influenced by the digital technology used, local government policies, work culture and infrastructure in their respective regions. The digital technology used has undergone a transformation starting from web-based applications or QR codes. As explained by (Rosmala et al., 2024) The web-based system allows its users to scan QR codes for attendance, providing real-time data access and minimizing errors in attendance logging. Furthermore, e-attendance is supported by biometric technology or often known as fingerprint or facial recognition. Explained by (Adoption, 2024) AI-driven facial recognition systems (Artificial Intelligence) replace manual attendance methods, ensuring accurate identification and reducing administrative workload.

The application is supported with GPS technology that can detect geographical location or position. official. Revealed by (Shaikh & Ansari, 2023) GPS technology to create geofences, allowing attendance when the guard enters a designated area, improving comfort and accuracy A claude-based system that provides data storage and user data security. In addition, the application can be integrated into other systems such as the e-attendance application integrated with the e-performance system so that it allows the automatic calculation of the performance allowance payment system. The application technology applied varies between regions.

e-Attendance User Experience

As a manifestation of e-government, Employee attendance recording has also undergone a transformation. Electronic attendance recording with an internet base is known as e-attendance. Employee attendance is the recording of a series of activities that contain the arrival time, the employee's return time and other activities carried out during working hours. Mahaputra et al (in (Sofyan & Budiyantara, 2024) Attendance provides information related to how a person's presence is an identity for certain activities attended so that the organizer, in this case the Regional Government, knows the activities of the employee. E-attendance is an employee attendance recording system with the help of software. This system is often referred to as electronic absence or absence Online. With an online system, it is easy to monitor employee attendance. By knowing the whereabouts of employees online, organizations can more easily get real-time employee attendance information. In the era of e-government, an online attendance recording system is very important because it will make it easier to monitor and

evaluate employee attendance. E-attendance has a very important role in human resource management, especially to increase work productivity. According to (Moonuddin & Iskandar, 2021) The article is called The electronic attendance system basically helps leaders in conducting periodic supervision of employees at work.

(Ratri dkk., 2022) Explain that user experience is a user's response as a result of the use or anticipated use of a digital system, product, or service. In behavioral theory, Experience is a learning process that can influence behavior. According to (Henim et al., 2019) The user experience in this article refers to Uses or the so-called User experience users when interacting with products or systems, including websites, software, devices, or applications (Usability.gov, 2014 (Nugroho & Silvana Rasio Henim, 2020) (Henim et al., 2019) refers to the user experience when interacting with a product or website system, software, device, or application. Nielsen (in Henim dkk.,2019) Mentioning user experience indicators include efficiency, satisfaction, errors, and learning ability.

Efficiency refers to the efficiency of this application that is used to carry out attendance recording activities. Efficient in terms of time and costs that must be spent by the organization in achieving the goal, namely improving performance. Satisfaction is the level of satisfaction felt by users after using the app to record attendance digitally. An error or error in an e-attendance application refers to an error or problem that occurs when the application is run. The learning ability in this study refers to how easy it is for new users to learn and start using e-attendance applications. It can be explained that the iOS-based e-attendance application has been implemented for 1 year. The user experience of iOS-based e-attendance, in terms of efficiency, is that the app is efficient enough to help with the employee attendance process. The use of the e-attendance application can save time, effort, and budget for the Armjaya District office.

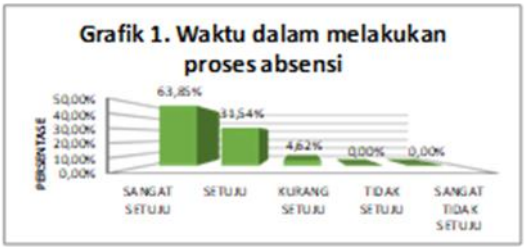
Employees who use the app do not experience significant issues. Features that are easy to remember and do not change color or position make it easy for employees to record attendance. The app's performance is pretty fast in storing attendance data. Relevant features according to the user's needs. It can be concluded that the iOS-based e-bsensi application is an application with an approach to user needs, in this case to meet the needs of the Regional Government in terms of monitoring and evaluating staff performance. This can be seen from the application that shows the amount of allowances received by employees as measured by the number of employee attendance in the office. From the research data, the most dominant errors in the use of iOS-based e-attendance applications are caused by unstable internet network factors, the rest of the errors are caused by data input from users. For user data input errors, the application can respond when there is a distance error (GPS technology) and also an attendance time error. With iOS-based apps, the chances of fraud can be minimized. The ease of learning the application (Learnability) can be seen from the ease of logged-in users. During the one year the app was implemented, there were no feature changes. This application is considered quite simple, easy to remember and does not change during the implementation of the application.

However, the simplicity of the app will be a challenge for advanced users who need more complex app features.

Discussion

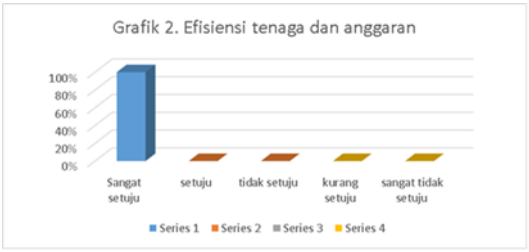
Efficiency

This indicator is used to measure how efficiently this application is used to carry out attendance recording activities. Efficient in terms of time and costs that must be spent by the organization in achieving the goal, namely improving performance. Time efficiency can be seen from the following respondents' answers.



Source: Primary data, 2024

As many as 63.85% of respondents answered that the use of iOS-based e-attendance applications take a short time compared to traditional systems (manually using paper) or fingerprints. In terms of paper use, attendance is more budget-efficient and the use of employee energy to carry out recapitulation activities of the number of employee attendance. This can be illustrated from the respondents' answers in graph 2 below.



Source: Primary data, 2024

In the iOS-based e-attendance application, there is a facial recognition system that automatically shows the presence of employees in the office. This is reinforced by the opinion of the staff at the Arma Jaya District office, Jeri Kurniawan, that by using the e-attendance application system, his duties as staff are not so heavy in terms of employee attendance recap and save more paper. The data can be stored in the form of a soft file. He was satisfied with this request, similar things were expressed by other respondents. Satisfaction in terms of savings and time and budget. This is also strengthened by the statement of the Arma Jaya Sub-district Head, Evriyoga Papiles, S.H. He revealed that this application system makes the budget, especially paper purchases, increasingly declining unlike before. So that we can allocate budgets for other operational activities to support employee work productivity. The data produced is reinforced by the results of Gracia's research presents a smartphone-based attendance tracking system that efficiently manages attendance on the iPhone Operating System, offering a cost-effective solution compared to traditional methods (Garcia et al., 2017). In the e-attendance application using the facial recognition system (Photo), it can reduce the time needed compared to the manual system or Fingerprint. As stated by (Gawande et al., 2022) Systems that use facial recognition can automatically flag attendance, significantly

reducing the time required compared to manual methods.

From the opinion of the Armagna Regency staff, it can be seen that the data management process, especially in data storage, can be done easily. The beginning explained by (Kuldeep Singh Rathore, 2024) that the iOS system facilitates easy access to storing attendance data and data processing. Expert informant Salamun Haris S.Sos, M.Si as a public policy observer said that technological innovation must have a big impact, especially on budget emphasis and ease of work for employees.

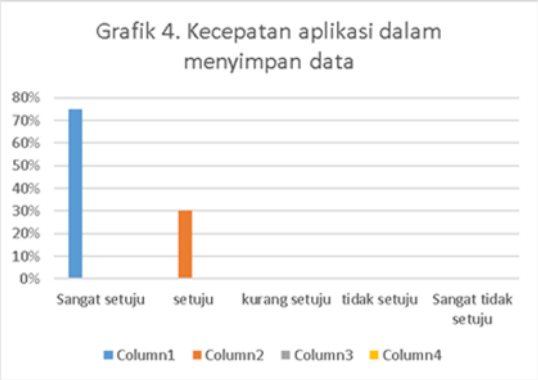
Satisfaction

User satisfaction with iOS-based e-attendance applications is the level of satisfaction felt by users after using the application to record attendance digitally. User satisfaction reflects the extent to which the e-attendance application is able to meet the expectations and needs of users in carrying out their functions efficiently and comfortably. This satisfaction can be influenced by a variety of factors, among others. Ease of Use refers to how easy and intuitive the app is for users to use, including the simple and responsive navigation of the interface.

Source: Primary data, 2024

As many as 69% of respondents said that they agree that using an iOS-based e-attendance application is easy and not difficult to operate. Only 1% said they disagreed due to network constraints. This was conveyed by the administrative staff of Arma Jaya Maya District that she did not experience any difficulties in the log-in and attendance process (FGD Data, 2024). The same thing was expressed by Jefri Kurniawan who is the staff of the e-attendance application operator. Jefri said "The application provides information if we make a mistake in data input, this makes it easier for us to be present. (FGD data, 2024). On the other hand, the use of the application has an impact on the number of TPPs received by employees. Arma Jaya., because this application can also directly monitor the number of TPP employees (see figure 1). Based on the average data of Arma Jaya TPP (Income Increase Allowance) employees based on e-attendance application data, only 50% received the total amount of TPP they usually receive. This is because employees fail to record attendance when coming or going home. Work. This situation makes employees disappointed with the implementation of the TPP (Income Improvement Allowance) deduction system.

Performance: The speed and stability of the application in recording, processing, and storing attendance data without interruption. The speed and stability of the application in recording, processing, and storing attendance data is essential to ensure efficient data management. This will greatly determine the satisfaction for the user.



Source: Primary data processed in 2024

As many as 75% of respondents stated that the e-attendance application does not take long to process the storage of attendance data. The remaining 25% experienced network problems that often made respondents have to repeat the attendance process from the beginning.

Field data shows that 75% of respondents said that the stability of the application is highly dependent on network systems and servers. If there is a server problem, BPSDM North Bengkkulu Regency will provide a circular letter that there has been a disruption or notification, followed by a policy of coming with a manual system. (FGD Results, October 25, 2024). Arma Jaya District is an area that often experiences electricity problems. Power outages occur almost every week. This has an impact on the performance or performance of the application. Employees cannot run the app because wi-fi and providers also depend on electricity. If this happens, attendance cannot be performed, and as a result the employee is considered absent. This is very detrimental to employees.

As many as 25% of respondents said they agreed that the network was stable. Respondents said that if the power grid is experiencing problems, they use data packets and search for locations so they can make a presence. From the data above, it can be obtained that the bottom picture of internet network stability is a frequent problem, this causes employees to be unable to record attendance through the iOS-based e-attendance application. This is a challenge in the implementation of the e-attendance application. In terms of speed, iOS-based electronic attendance apps have shown significant advancements over previously used apps. The iOS-based app comes with a location-based service (UPS). As stated by(Nazara and Nasien, n.d.), GPS integration improves reliability by confirming the user's presence, which is essential for accurate attendance records.

The speed of the application is supported by a cloud-based storage system that can ensure data integrity and accessibility and reduce the risk of data loss. It is also explained by (Chiniah, A., Raghoober, S., Issur, 2019) The use of cloud databases can ensure data integrity and accessibility and reduce the risk of data loss. Relevant Features: A complete set of features that suit the user's needs, such as ease of recording attendance, integration with calendars, and notifications.

Conclusion

This insight concludes that research on a topic related to ‘election’ is in the fluctuated modes. The year 2023 had the highest number of articles related to this topic. Indonesia is the most productive country related to the topic in this period (2028) and has 10 collaborations among 100 documents, but Canada has the most average cited country per article. Al Fatih Sholahuddin, Asmorojati Anom Wahyu, Dartanto Teguh, Herawati Ratna, Marwiyah Siti,

and Puyok Arnold are the top five writers on this topic from 2018 to 2024 period.

The features of the e-attendance application can be seen in the image below:

Figure 1. App menu features

Figure 2. App view in storing attendance and performance data

The iOS-based e-attendance feature application can be seen from the user-friendly dashboard display. The dashboard is equipped with features that can be adjusted to the user's condition. All respondents said that the features available in the app have been appropriate. The advantages of iOS-based apps are real-time and real-location data access. Employees can only do morning e-attendance from 7.30 am to 10.00 am. If it has passed the hour, recording attendance in the morning cannot be done or cannot be saved. Equipped with a GPS feature, this app can detect the actual position of employees. GPS can only glide to the surveillance location with a maximum distance of 10 m. Other employees cannot record attendance or attendance recording can be done with the external task icon option upload assignment letter.

The GPS feature offers a modern solution for tracking attendance in settings. This was revealed by (Shaikh, N., Shah, P., Vaghani, D., Tejani, J., Lakhani, 2024)(Sakthivel et al., 2023), GPS technology ensures that attendance is recorded only when the employee is within a designated geographic area, preventing fraudsters from entering. This is corroborated by the opinion of informant Kunci Sudarmin, S.Sos as the Head of the Public Service Section, that employees cannot edit their presence, because GPS technology will detect the presence of employees a maximum of 10 meters from the location of the sub-district office. This data is confirmed from the data in Figure 4. (FGD 2024 data)

Error

An iOS-based e-attendance app error or error, "error" refers to an error or problem that occurs when the application is run. Errors in the use of the application occur due to factors from

the user and factors from outside the user. User-derived errors are known as Authentication Errors: Users are unable to log in due to errors in the authentication system, such as incorrect passwords or problems with the server's authentication system. Cases that often occur are forgetting passwords or due to other activities employees forgetting to log in and entering the wrong date of attendance data (FGD Data, 2024). Errors that come from outside the user are:

1. Connection Issues: The app is unable to connect to the server due to internet or network issues. E-attendance applications often require an internet connection to send attendance data to a central server. If the internet connection is unstable or the device is not connected to the network, the app may display an error message. For example, "Can't connect to server" or "Check your internet connection". This issue can occur due to a weak WiFi signal, a faulty mobile data network, or an error in the app's server. Informant Ari Suryandi S.IP, who is the Head of the Public Order Section, explained that electricity often causes internet network problems (FGD, 2024). Such as server errors or overfixes or application maintenance. The Head of the General Welfare Section, Kirno, explained that if there is a server error or there is a repair, the BKPSDM (Human Resources Development Agency) of North Bengkulu Regency provides a circular. In case of an error from the user such as forgetting the password, the user can reset the password or change a new password. (FGD 2024 data)

2. Bugs in Application Code: Each application has to go through a long development process and undergo upgrades like an iOS-based e-attendance application. In its development, there are sometimes bugs in the code that are not detected before the application is released. These bugs can cause a variety of problems, such as features that don't work, buttons that don't respond, or data that can't be saved.

For example, when a user presses a button to log an absence, the app does not respond or gives an unclear error message. If this happens, what Arma Jaya District employees do is contact the Attendance Organizer section at the BKPSDM (Human Resources Development Agency) of North Bengkulu Regency (FGD 2024)

3. Errors in processing data and information: If the data entered into the app doesn't match the expected format (for example, an unspecified time of absence or an incorrect date format), the app might display an error message. Additionally, if there is a problem with the server (for example, a server that is too busy or undergoing maintenance), the application may not be able to save data and give an error message such as "Failed to save data, try again later."

The following is a diagram of obstacles that are often experienced by Office Attendant Arma Jaya from external user factors.

FGD data, 2024

To overcome obstacles in using the application, Infroman Kunci of Arma Jaya District, Evriyoga Papiles, S.H explained that the

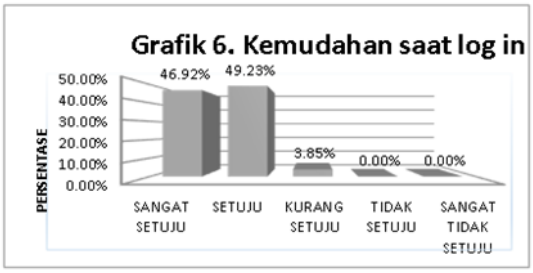
things done by employees are checking the internet connection, the obstacle that often occurs in Arma Jaya District is the network, so his party often ensures that the device is connected to a stable network. Check for app updates, this is done if there is an update to the latest version to get bug fixes and feature improvements. Log in again if an authentication error occurs, try logging out and back in. Restart the app or device because often, a simple problem can be solved by closing the app and reopening it, or by restarting the device. If not above in the above ways, Arma Jaya District will contact the BKPSDM (Human Resources Development Agency) of the Attendance Section of North Bengkulu Regency to solve ongoing problems.

Learning ability

Learning ability in this study refers to how easy it is for new users to learn and start using iOS-based e-attendance applications. Some of the factors that determine the ease of learning this application are as follows: Ease of Understanding Interface (User Interface), A well-designed interface feature will make it easier for users to learn the application for the first time. This is expressed by (Prawiro & Subhiyakto, 2024) In his research, he revealed that A usability score of 86.37 indicates that a well-designed interface significantly improves the user's learning abilities and overall experience. An e-attendance application that has good learning abilities should have an intuitive and easy-to-understand interface design, even for new users. For example, buttons and icons should clearly indicate their function, such as "Skip In" or "Skip Out" buttons that are easy to find and recognize. Visual guides, such as descriptive icons or labels, help users understand how to use the app without requiring a lot of instructions.

The initial interaction of users with the application is very important in making it easier to understand the application. A fun initial interaction will make it easier for users to learn the app. (Pirhonen, 2005) Early interaction with the app is essential; Metaphors and intuitive design can facilitate faster learning. The learning capabilities in iOS-based electronic presence apps can be enhanced through effective metaphors and user interface design, facilitating user understanding and skill acquisition during their initial interactions. The results of the FGD obtained from secondary data from the application interface show the ease for employees to log in. The informant said there was no difficulty for them to recognize and use the features in the application. The account registration process was first coordinated by the operator of the BKPSDM (Human Resources Development Agency) of North Bengkulu Regency. This helped the employees at the Arma Jaya District Office to use the application for the first time.

Figure 3. Login feature (FGD 2024 data)



Source: Primary data source 2024

From the graph above, 46.92% said they strongly agreed that there were no problems logging in. 49.23% said they agreed that there were no problems logging into the app. Meanwhile, there are 3.85% who have problems logging in. Respondents who experience this log failure are usually caused by an error in the input of the NIK (Nationality Identification Number) or NIP (Employee Identification Number). Consistent app design helps improve learning skills. This consistency can be seen in the icons of absence from entry, absence from home, permits, leave, and LHK remain in their position. This consistency helps employees to remember and make it easier to use this application. The consistent use of colors, icons, and terms throughout the app also makes it easier for users to learn what it does. From the results of the FGD data, it is stated that since this application was launched, there has been no change in the design of the e-attendance application. According to the informant, this application is quite easy to learn.

In addition to the stable design, the simplicity of the app is also a determining factor for employees to learn this app. The simpler the process of using the app, the easier it will be for new users to learn it. For e-attendance applications, this means that the process of recording attendance must be easy and fast, with a few steps. According to the informant, the application only requires a few stages. For moisture content data input, respondents do not need to go through many menus or options, this will make the application easier to learn. (FGD data, 2024). However, it should be noted that the simpler the app , the more likely it is to hinder advanced users who are looking for more complex features. In this case, it is a challenge for developers to balance simplicity with application functionality.

The ease of learning an app is also affected by the app's response in case of an error. In iOS-based e-attendance applications, if an error occurs the application quickly responds to user errors, the speed of the application in responding is an important part to make it easier to use and learn this application. If there is an error in the input or data input error, the application quickly provides error information. (FGD 2024 Results).

Figure 4. Application response when there is an error in the employee's position is not in accordance with the specified distance (10 m from the Arma Jaya Office)

Responding to the ease of e-attendance users, Salamun Haris., S.Sos, M.Si said that to make it easier for employees to learn and use the application, ideally the application must be designed with an approach to the user, in accordance with the workflow and still be able

to measure the performance concerned. In the iOS-based e-attendance application, high learning ability will increase user satisfaction, reduce misuse, and make it easier for employees or new users to adopt the application. Apps that have good learning abilities mean that users don't have to spend a lot of time studying or reading manuals just to do simple tasks, such as recording their attendance. From the data above, it is concluded that the learning ability of the iOS-based e-attendance application is quite easy to understand. The stable design of the app makes the in-app features easy for employees to remember. In addition, quick responses to the app guide employees in using the app.

Conclusion

The user experience of iOS-based e-attendance, in terms of efficiency, is that the app is efficient enough to help with the employee attendance process. Efficiency in terms of budget, this application is quite significant in reducing the use of paper and efficient in terms of attendance recording time. User satisfaction with the iOS-based e-attendance application can be seen from the ease with which users use the application. The app's performance is pretty fast in storing attendance data. Relevant features according to the user's needs. The iOS-based e-absence application is an application with an approach to user needs so as to produce satisfaction for its users. The e-attendance application forces employees to come early so that they have enough time to provide services and create conducive communication for employees so as to help complete the workers in the team. The amount of TPP (Increase in Additional Income). The informants were quite disappointed because the number of TPPs they received decreased by 50% of the TPP they usually received, because they failed to be absent so that the presence of the pawnbrokers was not recorded in the application and this affected the nominal amount of TPP

The most dominant errors in the use of iOS-based e-attendance applications are caused by unstable internet network factors, the rest of the errors are caused by data input from users. For errors in entering user data, the application can respond when there is a distance error (GPS technology) and also an error in the time of attendance. Regional governments must provide stable internet access so that this application can continue to be used by employees and not harm employees, especially for employees who fail to be absent. Learnability can be seen from the ease of user login, a simple and easy-to-remember application that does not change during application implementation. However, the simplicity of the app will be a challenge for advanced users who need more complex app features.

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