IJHABS
INTERNATIONAL JOURNAL OF HUMANITY ADVANCE, BUSINESS & SCIENCE

ANALYSIS OF THE IMPLEMENTATION OF ELDERLY-FRIENDLY DIGITAL SERVICES IN FACILITATING ACCESS TO INFORMATION AND DISBURSEMENT OF PENSION FUNDS AT PT PERKEBUNAN NUSANTARA III (PERSERO)

Wanda Aprilly Charos[1], Suhairi[2]

[1-2)] Fakultas Ekonomi dan Bisnis Islam, Universitas Islam Negeri Sumatera Utara

Email: wndprlly@gmail.com[1], suhairi@uinsu.ac.id[2]

Abstract

This study examines the implementation of elderly-friendly digital services in facilitating access to information and disbursement of pension funds at PT Perkebunan Nusantara III (Persero). Through a qualitative approach with observation, interview, and document analysis methods, the study revealed that the Dapenbun Online application has had a positive impact on operational efficiency and transparency, but still faces a number of significant challenges. The main problems include high manual error rates, less user-friendly interface design, technical authentication constraints, and limited digital infrastructure in remote areas. The study recommends strategic solutions such as increasing automation using machine learning, redesigning the interface, developing alternative authentication features, and strengthening digital education programs to create a more inclusive and effective system for retirees.

Keywords: *Elderly Digital Services, Pension Fund Management, Digitalization, Dapenbun Online, Digital Inclusion*

INTRODUCTION

The era of digital transformation has changed the service landscape in various sectors, including in the management of pension funds in the BUMN environment. PT Perkebunan Nusantara III (Persero), as one of the strategic BUMN in Indonesia, is facing challenges in optimizing digital services for its retirees, especially in terms of access to information and the process of disbursing pension funds.

One of the main obstacles faced is the design of digital interfaces that are not user-friendly, especially for the elderly. Current interfaces tend to be complex with too many confusing menus and options, text sizes that are too small, and navigation that is not intuitive. This results in retirees having difficulty accessing information and using digital services that available. This condition is exacerbated by the lack of accessibility features that take into account the physical and cognitive limitations commonly experienced by the elderly.

The manual verification process that is still applied in the pension fund disbursement system is also a significant obstacle. Retirees still have to verify their physical presence at the nearest branch office or work unit, which is often difficult, especially for those with limited mobility. This process is not only time-

consuming and laborious, but also poses health risks, especially during the pandemic. The manual verification system also results in delays in the fund disbursement process and increases the company's administrative burden.

The problem becomes more complex with the limited access to technology in remote areas where most retirees live. Uneven digital infrastructure, such as unstable internet networks and limited supporting facilities, causes a gap in access to digital services. Based on BPS data in 2023, there is still a significant digital divide between urban and rural areas, with internet penetration in remote areas still below 40%.

Research on the development of an elderly-friendly digital service model is very important considering its significant impact on the welfare of retirees. An inclusive service model that takes into account the special needs of retirees can improve operational efficiency while ensuring easy access for retirees. Furthermore, this research is in line with the national agenda in supporting inclusive digital transformation and improving the welfare of BUMN retirees.

The results of this study are expected to provide concrete solutions in the form of a digital service model that is not only elderly-friendly but also adaptive to various infrastructure limitations in remote areas. The model developed can be a reference for other BUMNs in developing more inclusive and efficient digital services, while supporting sustainable public service digitalization efforts.

LITERATURE REVIEW

Digital Information and Management Systems

1. User-Friendly Design in Information Systems

In information systems theory, one important aspect is to create a system that makes it easy for users, including the elderly population. A system that user-friendly supports better accessibility by considering factors such as font size, contrasting colors, and intuitive interfaces. The elderly population often experiences physical limitations such as vision impairment or reduced dexterity, making responsive design essential.

Approaches such as User-Centered Design (UCD) allow systems to be designed based on the real needs of users, including involving them throughout the development process. An example of the successful application of this method is seen in the study of Daniel et al. (2023), who examined the redesign of an Android application to meet specific user needs. They concluded that a system with simpler navigation significantly improved the user experience, including in populations less familiar with technology (Daniel et al., 2023).

In addition, the adoption of international standards such as WCAG (Web Content Accessibility Guidelines) helps create an inclusive system for a wide range of users, including the elderly. Another study by Amizhora & Sutabri (2023) confirmed that a simple interface with high accessibility contributes to the

successful implementation of digital systems in the wider community (Amizhora & Sutabri, 2023).

2. Digital Management in Information Management

Digital management theory focuses on efficiency in data and information management. Digital-based systems enable cross-departmental data integration that speeds up work processes, especially in services that require multiple validations, such as pension fund disbursements. With a digital system, workflows become more transparent and efficient.

Research by Krisnanik et al. (2021) shows that the use of digital technology in administrative management can reduce processing time by up to 30%, while increasing data accuracy. This system not only manages data but also enables real-time reporting, which is one of the keys to an organization's success in facing the demands of digitalization (Krisnanik et al., 2021).

The implementation of cloud-based information systems is also a trend in pension data management. This technology allows more flexible data access while maintaining security. Rizkina (2023) emphasized that the adoption of cloud computinghelps organizations handle large volumes of data without affecting access speed (Rizkina, 2023).

Public Service Theory

1. Responsiveness to Community Needs

In the context of public services, responsiveness to community needs is an indicator of program success. The elderly as a group of users of pension fund disbursement services often face physical and technological obstacles. Therefore, the development of digital solutions that can meet these special needs is a priority.

Online-based digital solutions have been proven to increase efficiency and accessibility. This system reduces the need for manual queues and speeds up service times. In a study by Amizhora & Sutabri (2023), responsive digital services can increase user satisfaction by up to 80%, especially because of the ease of accessing information independently (Amizhora & Sutabri, 2023).

In addition, this service allows users to obtain information anywhere, thus minimizing geographical constraints. Elderly people in remote areas, for example, can easily access services without having to come to the service office location.

2. Humanistic Approach in Digital Service

Although technology-based, a humanistic approach remains an important element in digital services. Assistance to users, especially the elderly, helps them better understand how to use new technologies. Rizkina (2023) suggests that this approach not only increases user trust but also encourages wider adoption of technology (Rizkina, 2023).

This mentoring practice is often done through basic training or user guides delivered either in person or virtually. For example, video tutorials or online consultation sessions are one way to ease the transition for users from manual to digital systems.

RESEARCH METHODS

This study uses a qualitative approach through direct observation, interviews with pension participants, and data analysis related to the use of the DAPENBUN Online application at PT Perkebunan Nusantara III (Persero). The researcher also viewed and analyzed official documents, such as application usage guidelines and the company's financial reports.

In addition, literature research on the use of technology in financial management and pension fund policies was conducted to improve the analysis. Qualitative research is a type of research in which data is collected based on certain events or phenomena (David Williams, 1995).

RESULTS AND DISCUSSION

Analysis of the Implementation of Elderly-Friendly Digital Services in Facilitating Access to Information and Disbursement of Pension Funds at PT Perkebunan Nusantara III (Persero)

Based on the results of observations and interviews with pension participants in the Dapenbun environment, this study revealed several important findings related to the implementation of digital services. In terms of digital management, the implementation of the Dapenbun Online system shows a positive impact on operational efficiency. There are several advantages of implementing the Dapenbun Online system, the first is that process efficiency has increased drastically because various procedures that were previously carried out manually can now be completed in a short time through the application. Second, transparency has also increased because participants can easily access information related to their pension balances and benefits anytime and anywhere. Third, this application provides easy access, especially for participants who have high mobility or live far from the head office (Syahputri & Aisyah, 2024). These advantages support the findings of Krisnanik et al. (2021) regarding the potential for efficiency through digitalization.

From a policy perspective, this study emphasizes the importance of regulations that support digital inclusivity. Standardization of elderly-friendly digital services at the BUMN level needs to be developed to ensure service consistency. The development of digital infrastructure that is evenly distributed across regions is also an important prerequisite in realizing inclusive digital services.

Challenges in Implementing Digital Services

Although the Dapenbun Online application is designed to improve the efficiency of pension fund management, various operational problems and constraints still occur. These problems have an impact on the smoothness of services, both for application users and data managers. Here are some of the main issues faced:

1. High Manual Error Rate

The data approval system in the application is not fully automated, so the process of verifying pension beneficiary data still relies on manual labor from the admin. This reliance on manual validation opens up opportunities for errors, both in data assessment and decision making. In addition, the increased workload can slow down the response time to requests for disbursement of funds.

2. Less User Friendly App Design

The implementation of digital applications faces major challenges in terms of accessibility, especially for senior retirees. Many users report difficulties in navigating the application, such as font sizes that are too small, menus that are not intuitive, and a lack of user guides. As a result, most retirees choose third-party assistance or manual services rather than using the application.

3. Technical Constraints in Authentication Process

The photo and ID card-based authentication system used to verify the eligibility of beneficiaries often fails. This is due to the limited quality of the user's device camera, poor lighting conditions when taking the photo, or unstable internet connections. These problems result in many users being unable to complete the verification process, thus delaying the disbursement of funds.

4. Lack of Integration with National Population Data

Currently, the Dapenbun Online application does not have a direct connection to the national population data system (Dukcapil). This condition causes the time required to verify user data to be longer, especially for retirees whose information needs to be manually confirmed through additional documents.

5. User Complaints and Low App Ratings

Reviews from users on Playstore show a low level of satisfaction with this application. Most complaints revolve around technical issues, such as system

failures and slow processing times. The low app rating is an indication that service improvements and feature optimization are needed to meet user expectations.

6. Accessibility Issues in Remote Areas

Not all retirees have adequate internet access, especially those living in remote areas. This lack of technological infrastructure prevents retirees from using the application effectively. As a result, manual services are still become the primary choice for most users in areas with limited connectivity.

7. Lack of Education and Training for Users

The Dapenbun Online application does not provide enough training or education for retirees regarding its use. Most participants only understand the basic functions of the application, such as checking pension benefit balances, but have difficulty utilizing other features, including authentication or re-filling data. Adequate education through direct training or application-based tutorials can help increase the adoption rate and user trust.

Recommendations for the Development of Elderly-Friendly Digital Services to Facilitate Access to Information and Disbursement of Pension Funds at PT Perkebunan Nusantara III (Persero)

To overcome various problems experienced in using the Dapenbun Online application, several development recommendations are proposed to increase system effectiveness, including:

1. Improvement of automation systems needs to be done by adopting technologies such as machine learning. This technology can be used to process and validate data automatically, thereby reducing reliance on manual validation by admins and minimizing the risk of human error.
2. User interface (UI/UX) redesign should be a priority. The app interface needs to be designed to be more user-friendly, especially for retirees who may be less familiar with technology. Larger text sizes, more intuitive navigation, and providing visual guides can help users navigate the app more easily.
3. Enhanced authentication features are an important solution. Adding alternative authentication options such as fingerprint verification or facial recognition can help reduce verification failures that have so far relied on ID photos. This will make it easier for users, especially those who face technical difficulties when using their device's camera.
4. Education and application usage guides must be strengthened. Dapenbun also needs to implement a digital mentor program that can help improve

elderly users' adaptation to the new system. In addition, the development of easy-to-understand video tutorials and usage guides, as well as the formation of a special helpdesk For elderly users, it is expected to be effective in improving the understanding of how the application works as a whole.

5. Strengthening digital infrastructure is essential, especially for retirees in remote areas with limited internet access. Applications need to be designed to work in low network conditions or even offline, with data synchronization features that can be done when an internet connection is available.

Overall, this study shows that developing elderly-friendly digital services requires a holistic approach that considers technological, human, and infrastructure aspects. Successful implementation depends not only on technological innovation, but also on the system's ability to accommodate the needs and limitations of elderly users.

CONCLUSION

This study reveals that the implementation of the Dapenbun Online application at PT Perkebunan Nusantara III (Persero) has had a positive impact in terms of operational efficiency, transparency, and ease of access to information for retirees. However, a number of significant challenges are still faced in its implementation, including a high rate of manual errors in the verification process, an interface design that is less friendly to the elderly, technical constraints in the authentication process, lack of integration with national population data, and limited digital infrastructure in remote areas. To overcome these challenges, the study recommends several strategic solutions such as improving the automation system using machine learning, redesigning a more user-friendly interface, developing alternative authentication features, strengthening digital education and mentoring programs, and developing a system that can operate in limited network conditions. These findings emphasize that the development of elderly-friendly digital services requires a holistic approach that considers technological, human, and infrastructure aspects to create a more inclusive and effective system for retirees.

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