

Innovation in the Development of Academic Administration Services in Higher Education: Digital Transformation Strategy Towards the Industrial Era 4.0

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Innovation in the Development of Academic Administration Services in Higher Education: Digital Transformation Strategy Towards the Industrial Era 4.0

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ABSTRACT

This study aims to develop a digital-based academic administration service system in response to the Industrial Revolution 4.0 era. The system is designed to facilitate the electronic management, storage, and distribution of mail in academic administration. Rapid Application Development (RAD) is the method used, with stages of requirements planning, system design, development and feedback collection, and product implementation. The research was conducted at the Faculty of Tarbiyah and Teacher Training at the Palopo State Islamic Institute. Data were collected through observation and validation questionnaires, analysed descriptively, and used percentage techniques to determine validity. The validity of the product was tested by expert web developers through analysis using the Aiken V formula. The findings of this study provide an important understanding of the importance of digitalisation in improving the efficiency and quality of academic, administrative services in the digital era. The results of this research make a significant contribution to the development of digital-based academic administration service systems and can be the foundation for further research and development in the future.

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1. INTRODUCTION

The Industrial Revolution 4.0 is an era of digitalising public services, which has become a fundamental need (Farida et al., 2020; Ellitan, 2020; Kagermann, 2015; Oliveira & de Souza, 2022). It is triggered by an increase in the demand of people who want a quick response and service to their needs. This era is marked by automation and digital technology-based services. Currently, digital technology is used to advance the education sector and as a solution to accelerate and facilitate access to services (Towns et al., 2014; Ahmadi, 2017; Downstream, 2021). This implementation can help prevent illegal actions that

can damage the service's reputation in the public's eyes, such as illegal levies or bribes by irresponsible individuals.

7 The Industrial Revolution 4.0, the latest development in the industrial world, demands adaptation and response from all sectors, including education. Slowly but surely, the education sector is developing and moving towards a technological and social trend, namely digitalisation. The development of technology and information is carried out in tandem with education implementation reforms. The State Civil Apparatus, an education actor, must adapt to technological changes to create more efficient and effective public services (Setyasih, 2019; Hartati & Iskandar, 2021). This adaptation will maximise their duties and functions and avoid negative images, such as in-ef public service services carried out by civil servants. Therefore, a change in the mindset of service implementers is needed, where they must be directed to provide timely, easy, and affordable services by utilising digital technology as an inseparable part of the Industrial Revolution 4.0 era.

10 The study of digital public services in the era of the Industrial Revolution 4.0 has become a topic of interest for various researchers. Greekngsih et al. (2021) explore efforts to improve service quality through digitalisation (Greekngsih et al., 2021), while Ilyas & Bahagia (2021) examine the effect of digitalisation of public services on employee performance during the pandemic. Other researchers, such as Muharram (2019), offer innovations in public services in the context of the Industrial Revolution 4.0, while Polanunu & Rijal (2021) highlight the importance of digital-based public service innovation to realise good governance. Especially in the field of education, various focuses and approaches were born, but the research (Tina Kartika, 2020; Mesiono et al., 2021) Emphasising the importance of digital-based public services in improving service quality to various stakeholders.

9 Faculty of Tarbiyah and Teacher Training (FTIK) State Islamic Institute (IAIN) Palopo is one of the providers of public services in the education sector. Law Number 25 of 2009 affirmed public services as activities or series of activities to fulfil service needs following laws and regulations for every citizen and resident of goods, services, and/or administrative services provided by public service providers. Public service relates to what the community feels and needs as service users (Rorong, 2020; Rukayat, 2017). In this context, the community referred to as service users are students.

Before the COVID-19 pandemic struck, IAIN Palopo had proactively implemented digitalisation in public service processes by implementing an academic information system known as SIPAKATAU (Integrated Academic Service System). Since 2020, the Faculty of Tarbiyah and Teacher Training (FTIK) IAIN Palopo has developed a digital academic service known as SIKOLATA (Digital Academic Service Communication System), although this system does not yet include academic correspondence-making services for students. The Rector has drafted various regulations designed to maximise the implementation of digitalisation in public services in the institution so that it can be an effective tool in realising bureaucratic reform and innovation in public services, as well as a solution that can improve the quality of service to students.

Implementing this digital-based academic administration service system is crucial, especially considering data from the Higher Education Database (PD-Dikti) in November 2022 showing the number of FTIK IAIN Palopo students reached 3,289 people. From initial observations, the services provided by FTIK IAIN Palopo are still mostly manual or face-to-face, namely between students and service officers. This service method is less efficient and effective and has the potential to create crowds of students in faculty corridors, resulting in crowded, noisy, and less organised environments and creating inconvenience for service users and service providers. In addition, students unable to attend in person for various reasons cannot obtain administrative services optimally. Therefore, new services are needed that can overcome this problem.

This research departs from the argument that, as a public service provider, the state civil apparatus (ASN) at FTIK IAIN Palopo should ideally be able to provide the best administrative services that are efficient, easy, and innovative. This innovation should be supported and based on the latest technological developments because it plays a key role in the operationalisation of digital public services (Burgos & Branch, 2021; Muharam, 2019; Polanunu & Rijal, 2021; Greekngsih et al., 2021). In addition, information

and communication technology can facilitate and simplify various types of academic mailing services at FTIK IAIN Palopo. Thus, this will align with the demands of the Industrial Revolution 4.0, which encourages the use of technology in all aspects of human life.

This research aims to design and develop a digital-based academic administration service system that focuses on managing academic correspondence in the services of the faculty of tarbiyah and teaching sciences. This service includes handling various standard letters such as active college certificates, scholarship acceptance certificates, graduation certificates, leaving certificates, research permit application letters, and thesis submission certificates. This system was developed by emphasising paperless technology and required an internet connection. The results of this research are expected to provide innovative digital solutions to handle academic administration challenges in the Industry 4.0 era

2. METHODS

a. Types of research

This research uses a type of development research: Research and Development (R&B). Development research (R&D) is the process used to develop and validate educational products (Creswell & Creswell, 2017). The product developed is in the form of a digital-based academic mailing service application. This research was carried out at the Faculty of Tarbiyah and Teacher Training at the Palopo State Islamic Institute, which will be held in December 2022 – February 2023.

b. Software development methods

The software development method used in research is the Rapid Application Development (RAD) method. Based on relevant previous research (Lohr et al., 2000; Lohr et al., 2003; Chandra & Wahyuddin, 2022; Purwanto, 2021; Rini & Fatmariyani, 2017), the stages passed in RAD method research are as follows:

First, the needs planning stage involves communication between users and system developers to identify the system's desired form and end goals. Data from users is collected through surveys and interviews to determine system requirements.

Then the system design stage is then carried out, where the design and improvement process is carried out repeatedly until the system design follows user needs. Active involvement between users and system developers is essential in this stage.

Next, the development stage and feedback collection are carried out by creating a beta version and a final version of the agreed system. New features are constantly being developed and integrated, taking into account user feedback and feedback.

c. Data collection techniques

Data collection was carried out using observation techniques and validation questionnaires. Observations were made on the Website in the form of a digital-based academic mail service application that has been developed, where the use of the Website and user interaction with the system are observed directly. It aims to understand the Website's functioning and usability in the context of academic, administrative services. Furthermore, questionnaires are used as a tool to validate products that have been developed. The questionnaire is designed to collect feedback and ratings from experts in web developers regarding product validity and quality. In this study, two expert web developers were selected as respondents to test the validity of the products that have been developed.

d. Data analysis techniques

Observational data are analysed descriptively, which means that the data is described narratively and explained in the form of descriptions. The descriptive analysis provides a clear picture of the observations made on the Website of the developed academic service. Meanwhile, the data from expert validation were analysed using percentage techniques using the percentage value formula:

$$\text{Value} = x100 \frac{\text{score obtained}}{\text{score total}}$$

Interpretation of the results of the validity analysis that has been carried out can be seen in Table 2.

Table 1. Interpretation of the results of the validity analysis.

No	Total Score	Criterion
1	0-20	invalid
2	21-40	Less Valid
3	41-60	Fairly Valid
4	61-80	Valid
5	80-100	Very Valid

The validation instrument analysis technique for experts uses the Aiken V static formula. The coefficients of the four aspects of validity are calculated based on the results of the instruments filled in by validators. The validity result is measured using the Aiken V static formula formulated as follows. The Aiken V Index category ranges from 0-1, as shown in Table 3.

Table 2. Aiken Assessment Index V.

No	Percentage (%)	Criterion
1	$V \leq 0,4$	Less valid
2	$0,4 < V < 0,8$	Valid
3	$V > 0,8$	Very valid

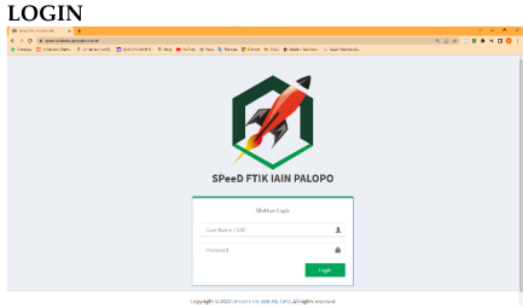
Products that validators have validated can have their validity values known through the analysis process. Validators also provide input in the form of suggestions related to improvements and improvements to products that have been developed. These suggestions are valuable because they come from experts in web development with relevant knowledge and experience. After the validation process, these suggestions can be used to improve the developed product. By implementing these suggestions, the product can be refined to be more valid, effective, and responsive to user needs.

3. FINDINGS AND DISCUSSION

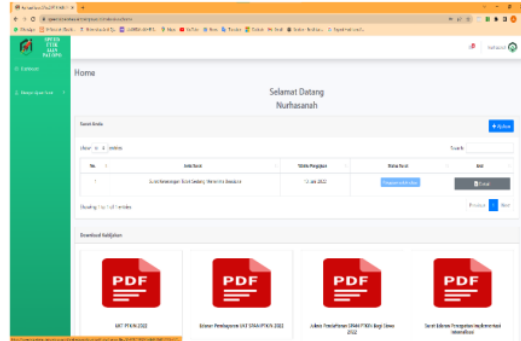
Website design of academic administration service system

The purpose of developing a digital-based academic administration service system website is to facilitate managing, storing, and distributing letters electronically. The development design of the mailing website must pay attention to the structure of website development, which includes; Functionality, security, performance, scalability, user interface, integration with other systems, and level of acceptance by users. The components contained in the website design include the login display, dashboard, letter submission, letter submission process, and sample letters that have been completed.

Table 3. Display of digital-based academic administration service system website design

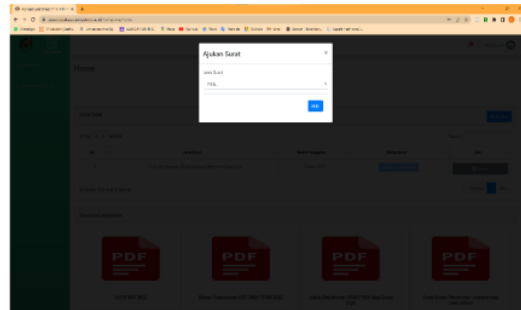
Design View	Information
	Students must enter a user name as a student identification number (NIM) at the login stage. For the password section, students enter the number from BRIVA (BRI Virtual Account) in the current semester.

DASHBOARD



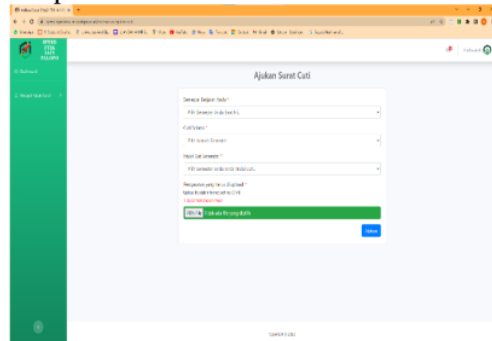
Name and logo buttons when you want to see user profiles and Log out buttons. The dashboard button functions when you want to see mail status. History button File a letter if you want to see the history of application letters that students have submitted. +Submit button to select the type of letter needed. Details button to select the type of mail needed. Download the Policy button to download policies or rules related to students.

File a Letter



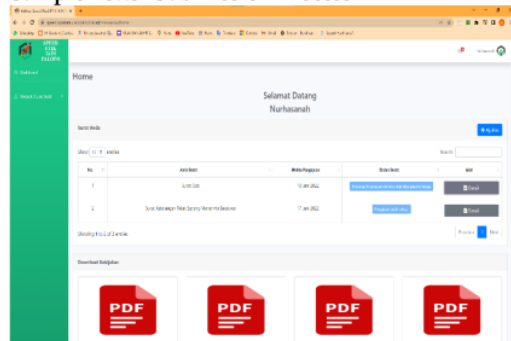
Mail Type button to select the letter to be filed. Select the button when you want to display the types of letters needed. Select the button if you want to forward the application.

Sample Letter Submission



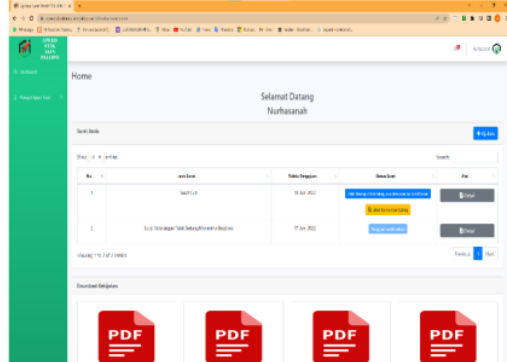
Letters that can be submitted include a letter of leave from college, a letter of research permit, a letter of active college, a certificate of not currently receiving a scholarship, a certificate of graduation, and a certificate of having submitted a thesis. Fill in your data according to the conditions in the available columns. Choose the File button to attach the required document in pdf format. Submit button to send personal data and documents that have been filled out.

Sample Letter Submission Process



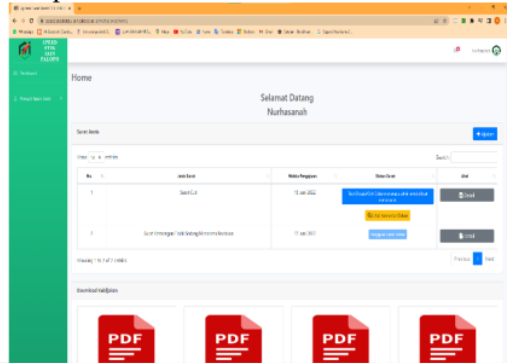
After inputting the requirements, wait for verification from the Admin and always pay attention to the Mail Status. At this stage, waiting for admin approval whether the file that has been inputted has been received or not. If received, it will be forwarded to the bag for re-inspection. Status of the Letter Waiting for Admin Approval to be forwarded to the Head of the Bag shortly after the temporary file is checked. Details button to view the details of the submitted letter.

Sample Letter Submission Process



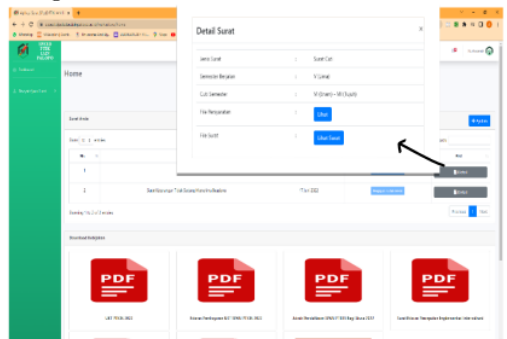
Status Letter Has Been Approved by the Head of the Division and forwarded to the Vice Dean. If it has been inspected and received by the Head of the Department, it will be forwarded to the deputy dean for re-examination. If the letter's status has been approved by the Head of the Division and forwarded to the Vice Dean, the submitted letter/file will be examined by the Vice Dean. Details button to view the details of the submitted letter.

Sample Letter Submission Process



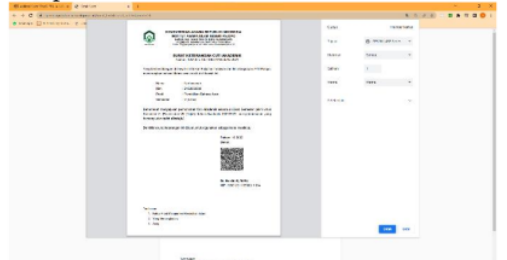
Status Letter Has Been Approved by the Dean waiting for the Admin to be generated a letter number. If the Dean has checked and received it, it will be returned to the Admin to be affixed with a letter number and other information. Details button to view the details of the submitted letter.

Sample Letter Submission Process



If it has been affixed with a meal letter number, the letter's status will change to Letter Submission Completed. Dori button to view mail details. Then the Mail Detail Box will appear. Seet the Mail button to download the mail file.

Sample Letter



An example of what an approved letter looks like. To check its validity, please Barcode the Signature can be scanned using a smartphone and will display information about the document's validity.

Validity Test

Two web developer experts validated the validity test of the digital-based academic administration service system website design. Expert assessment is used as a reference for improving the developed website design. Validation assessment

The first assessment of validators is the Website's design and appearance, broken down into five questions. The questions on the website design and appearance indicators are:

1. The appearance of the Website is attractive and easy to understand,
2. Navigation on the Website is intuitive and easy to use,
3. The colours and fonts on the Website are easy to see and read,
4. The Website looks professional and trusted, and
5. The Website is designed responsively for various devices (computers, tablets, smartphones).

The results of the expert assessment of the design and appearance of the Website are as follows:

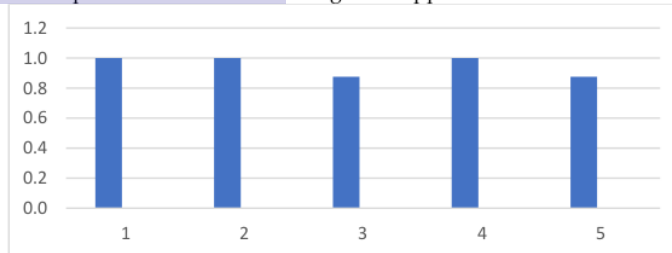


Figure 1. The results of expert assessment of website design and appearance

Based on the picture above, it can be explained that all aspects related to the Website's design and appearance are valid assessments. It can be seen from the values obtained are in the range of 0.9 and 1. The average expert assessment of website design and appearance is 0.95. So it can be interpreted that the value of expert validity analysis results on aspects of website design and appearance is categorised as very valid.

The assessment of the two validators is Website Content, broken down into four questions. The questions on the Website Content indicator are:

1. The information displayed on the Website is up-to-date and accurate,
2. The website content is relevant to mailing needs,
3. Important information is easy to find on the Website, and
4. The Website provides all the information needed for mailing services.

The results of the expert assessment of Website Content are as follows:

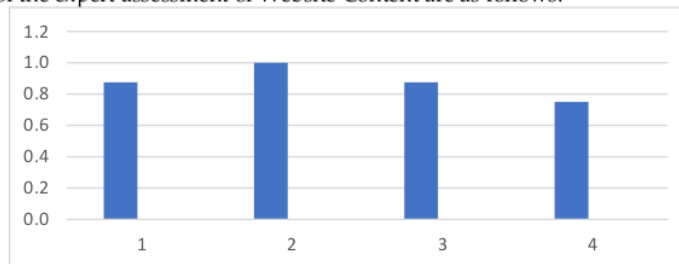


Figure 2. Results of expert assessment of Website Content

Based on the picture above, it can be explained that all aspects related to Website Content are under valid and very valid assessment. It can be seen from the value obtained is in the range of 0.8 to

1. The average expert assessment of Website Content is 0.875. So it can be interpreted that the value of expert validity analysis results on aspects of website design and appearance is categorised as very valid.

The third assessment, validators, namely Website Functions and Features, are described into three questions. The questions on the Website Functions and Features indicator are:

1. The Website provides online service features that are easy to use,
2. All website functions can be accessed without technical problems, and
3. Website security features such as privacy and user data protection are quite good.

The results of the expert assessment of Website Functions and Features are as follows:

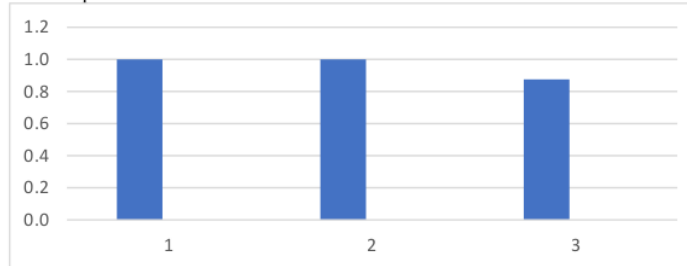


Figure 3. Results of expert assessment of Website Functions and Features

Based on the picture above, it can be explained that all aspects related to Website Functions and Features are in a very valid assessment. It can be seen from the value obtained is in the range of 0.9 to 1. The average expert assessment of Website Functions and Features is 0.96. So it can be interpreted that the value of expert Validity Analysis Results on aspects of Website Functions and Features is categorised as very valid.

The fourth assessment, validators, namely Support and Help, is divided into three questions. The Support and Help indicators questions are:

1. The Website provides clear help or user guidance,
2. Questions or concerns about this Website can be answered or resolved quickly, and
3. The Website provides clear contact for technical support or other questions.

The results of the expert assessment of Support and Assistance are as follows:

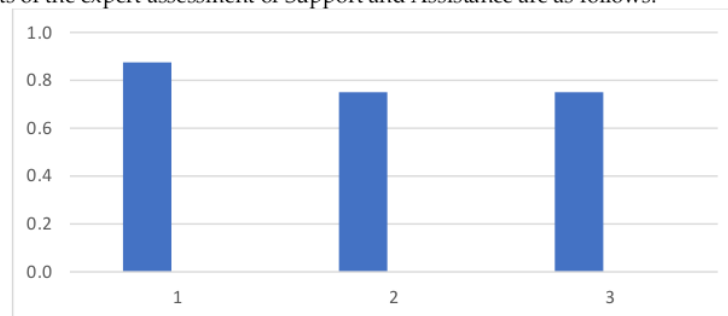


Figure 4. Results of expert assessment of Support and Assistance

Based on the picture above, it can be explained that all aspects related to Support and Help are under Valid and very valid assessment. it can be seen from the value obtained is in the range of 0.8 to 0.9. The average expert rating on Support and Assistance is 0.792. So it can be interpreted that the value of the Expert Validity Analysis Results on the Support and Help aspect is in the valid category.

Discussion

This research aims to develop a digital-based academic administration service system website that can facilitate managing, storing, and distributing letters electronically. Website design involves several views such as Login, Dashboard, File a Letter, Sample Letter Submission, and Sample Letter Submission Process. The results of validity tests by two web developer experts show that the Website's design and appearance, website content, website functions and features, and the support and assistance provided have a good level of validity. Expert assessment of website design and appearance, website content, website functions and features, and support and assistance are in the very valid category.

The first validator assessment of the Website's design and appearance was 0.9 to 1, with an average assessment of 0.95. The assessment of the two validators on website content showed a value that was in the range of 0.8 to 1, with an average rating of 0.875. The third validator's assessment of the functions and features of the Website showed a value in the range of 0.9 to 1, with an average assessment of 0.96. The four validators' assessments of support and assistance showed scores in the range of 0.8 to 0.9, with an average rating of 0.792. These results show that the website design has a good level of validity in aspects of website design and appearance, website content, website functions and features, and the support and assistance provided.

In this study, a digital-based academic administration service system was developed to facilitate managing, storing, and distributing letters electronically. The validation results by two expert web developers show a good level of validity in various aspects, including design and appearance, content, functions and features, as well as support and assistance provided by the Website. It shows that implementing digitalisation in academic administration services following the research of Greekngsih et al. (2021) can potentially improve service quality.

Polanunu & Rijal Research (2021); Burgos & Branch (2021) shows the importance of digitalisation in public services to realise good governance, which aligns with the main objectives of developing this system. The relevant literature study reinforces the findings of this study. For example, shows that digitalisation can affect employee performance, which means this system can potentially help increase the productivity of administrative staff. Thus, this research contributes significantly to existing literature and digital-based public service practices.

Based on the results of research and literature studies that have been conducted, these findings indicate that digitalisation in academic administration services is an important and effective step in the era of the Industrial Revolution 4.0. This study's service quality improvement through digital-based systems underscores the urgency and relevance of digitalisation implementation in public services, especially education. In addition, the positive potential of digitalisation on employee performance and the realisation of good governance signifies that digital-based innovation can be the key to improving public service efficiency, effectiveness, and transparency. Therefore, the results of this study open up opportunities for further research and deeper development of digitalisation in academic and public administration services in general.

The implications of the results of this study are quite significant. First, the good validity of the developed digital-based academic administration system shows that digitalisation can be used as an effective tool to improve the efficiency and effectiveness of administrative processes, especially in education. It suggests educational institutions should look towards digitalisation to address their administrative challenges. Second, these findings also have implications for public service practice in general. With improved service quality, positive potential for employee performance, and good governance, the digitalisation of public services can be the key to providing better services to the community. Furthermore, this study provides valuable insights for other researchers interested in digitalisation in public services and paves the way for further research.

The results of this study, which show the validity and effectiveness of a digital-based academic administration system, arise from several factors. First, the research was conducted with a mature and meticulous approach to system development, which included a well-thought-out design, relevant content, effective functions and features, and adequate support and assistance. Second, this research

was conducted in the context of the Industrial Revolution 4.0, where digitalisation is key in improving the efficiency and effectiveness of various aspects of life, including public services and academic administration. Finally, the results of this study may also be reflected in the increasing needs and expectations of the public towards better and more efficient public services in today's digital era. Therefore, this research reflects the global trend towards digitalisation and innovation in public services.

Based on the results of this study, several important actions need to be taken. First, educational institutions and other public entities must start or accelerate their digitisation process if they have not already done so. Given the validity and effectiveness of the digital-based academic administration system developed in this study, implementing similar systems in other institutions can help improve the efficiency and quality of their services. Secondly, training and education should be provided to administrative staff and service users to ensure they can take full advantage of the benefits of this digital-based system. Lastly, more research should be done to continuously optimise and update these systems and expand our knowledge of digitalisation in public services. The results of this study pave the way for further research and innovation in this field.

4. CONCLUSION

The findings of this study show that digitalisation not only increases the efficiency and effectiveness of administrative processes but also has the potential to positively impact employee performance. Assessments from web developer experts show excellent validity of the developed system, especially regarding website functionality and features. In a context where digitalisation is often seen as a tool to replace the role of humans in various processes, this discovery shows that digitalisation can serve as a support to improve employee performance, not replace it. It shows that in the era of the Industrial Revolution 4.0, the balance between technological innovation and human involvement remains key to achieving optimal efficiency and effectiveness.

This research presents the concept of developing a digital-based academic administration service system that is relevant and responsive to the needs of the Industrial Revolution 4.0 era. This concept provides a theoretical and practical foundation for optimising academic and administrative services through digital technology. The added value of this research lies in the concepts developed. Although the research methods are important to ensure the validity and reliability of findings, the resulting concepts have much broader potential to inspire better future research and public service practice. In this regard, this research makes an important contribution in directing attention to the importance of digitalisation in improving the quality of public services.

Although this research contributes significantly to developing digital-based academic administration service systems, some limitations must be noted. First, the study focused on one educational institution and may not represent the same situation at another. Therefore, follow-up research may involve a wider sample of educational institutions to test the generality of these findings. In addition, the study did not involve service users directly to gather their feedback. Therefore, further research can involve potential users of these systems to evaluate their satisfaction with the features and functionality provided. Furthermore, future research may also explore the long-term impact of digitalisation on academic and administrative services, including analysis of efficiencies and changes in the working patterns of administrative staff.

REFERENCES

- Ahmadi, F. (2017). *Guru SD di Era Digital: Pendekatan, Media, Inovasi*. CV. Pilar Nusantara.
- Burgos, D., & Branch, J. W. (2021). Radical Solutions for Digital Transformation in Latin American Universities: Artificial Intelligence and Technology 4.0 in Higher Education. *Lecture Notes in Educational Technology*. In *Lecture Notes in Educational Technology*. Springer. <https://doi.org/10.1007/978-981-16-3941-8>
- Chandra, R. K., & Wahyuddin, M. I. (2022). Sistem Informasi Penjualan Ayam Asap Pada iSmoked Berbasis Web Menggunakan Metode RAD. *JURNAL MEDIA INFORMATIKA BUDIDARMA*, 6(2), Article 2. <https://doi.org/10.30865/mib.v6i2.3557>
- Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- Ellitan, L. (2020). Competing in the Era of Industrial Revolution 4.0 and Society 5.0. *Jurnal Maksipreneur: Manajemen, Koperasi, Dan Entrepreneurship*, 10(1), Article 1. <https://doi.org/10.30588/jmp.v10i1.657>
- Farida, I., Setiawan, R., Maryatmi, A., & Juwita, N. (2020). *The Implementation of E-Government in the Industrial Revolution Era 4.0 in Indonesia*. 22, 340–346.
- Hartati, I., & Iskandar, A. (2021). Widyaishwara's Role in Apparatus Development in the Pandemic and New Normal Era. *Budapest International Research and Critics Institute (BIRCI-Journal) Humanities and Social Sciences*, 4, 2488–2496.
- Hilir, A. (2021). *TEKNOLOGI PENDIDIKAN DI ABAD DIGITAL*. Penerbit Lakeisha.
- Ilyas, A., & Bahagia, B. (2021). Pengaruh Digitalisasi Pelayanan Publik terhadap Kinerja Pegawai pada Masa Pandemi di Lembaga Pendidikan dan Pelatihan. *EDUKATIF : JURNAL ILMU PENDIDIKAN*, 3(6), Article 6. <https://doi.org/10.31004/edukatif.v3i6.1173>
- Kagermann, H. (2015). Change Through Digitization—Value Creation in the Age of Industry 4.0. In H. Albach, H. Meffert, A. Pinkwart, & R. Reichwald (Eds.), *Management of Permanent Change* (pp. 23–45). Springer Fachmedien. https://doi.org/10.1007/978-3-658-05014-6_2
- Lohr, L., Javeri, M., Mahoney, C., Gall, J., Li, K., & Strongin, D. (2003). Using Rapid Application Development To Improve the Usability of a Preservice Teacher Technology Course. *Educational Technology Research and Development*, 51(2), 41–55.
- Lohr, L., Javeri, M., Mahoney, C., Strongin, D., & Gall, J. (2000). *Rapid Application Development of a Self-Paced Pre-Service Teacher Technology Course*. <https://eric.ed.gov/?id=ED455776>
- Mesiono, M., Suswanto, S., Lubis, R. R., & Haidir, H. (2021). Manajemen Pembiayaan Pendidikan dalam Meningkatkan Mutu Pendidikan di Madrasah Aliyah Imam Muslim Serdang Bedagai. *Intiqad: Jurnal Agama Dan Pendidikan Islam*, 13(1), Article 1. <https://doi.org/10.30596/intiqad.v13i1.6244>
- Muharam, R. S. (2019). INOVASI PELAYANAN PUBLIK DALAM MENGHADAPI ERA REVOLUSI INDUSTRI 4.0 DI KOTA BANDUNG. *DECISION: Jurnal Administrasi Publik*, 1(01), Article 01. <https://doi.org/10.23969/decision.v1i01.1401>
- Oliveira, K. K. de S., & de Souza, R. A. C. (2022). Digital Transformation towards Education 4.0. *Informatics in Education*, 21(2), 283–309.
- Polanunu, A. B. D., & Rijal, N. K. (2021). Menuju Good Governance: Inovasi Pelayanan Publik Berbasis Digital di Kantor Imigrasi Kelas II Non-TPI Kediri Jawa Timur. *NeoRespublica : Jurnal Ilmu Pemerintahan*, 3(1), Article 1.
- Purwanto, F. A. (2021). Sistem Informasi Arsip Surat dengan Metode Rapid Application Development (RAD). *Jurnal Mahasiswa Aplikasi Teknologi Komputer Dan Informasi (JMApTeKsi)*, 3(3), Article 3.
- Rini, A., & Fatmariyani, F. (2017). Penerapan Metode RAD Pada Sistem Pengajuan Pengambilan Data Penelitian Bankesbangpol Kota Palembang. *Jurnal TI Atma Luhur*, 4(1), Article 1.
- Rorong, M. (2020). EVALUASI KINERJA PELAYANAN PUBLIK PADA MASA PANDEMI COVID 19 DI KECAMATAN RATAHAN KABUPATEN MINAHASA TENGGARA. *POLITICO*:

- Jurnal Ilmu Politik*, 9(1), Article 1.
<https://ejournal.unsrat.ac.id/v3/index.php/politico/article/view/32096>
- Rukayat, Y. (2017). KUALITAS PELAYANAN PUBLIK BIDANG ADMINISTRASI KEPENDUDUKAN DI KECAMATAN PASIRJAMBU. *Jurnal Ilmiah Magister Ilmu Administrasi*, 11(2), Article 2. <https://jurnal.unnur.ac.id/index.php/jimia/article/view/32>
- Setyasih, E. T. (2019). Creation of Professionalism in Public Services by Developing the Competence of State Civil Apparatuses. *International Journal of Science and Society*, 1(4), Article 4.
<https://doi.org/10.54783/ijssoc.v1i4.630>
- Tina Kartika, T. (2020). Efektivitas Komunikasi Organisasi Melalui Penerapan Sistem Administrasi Persuratan Terintegrasi di Universitas Lampung. *INTER KOMUNIKA: Jurnal Komunikasi*, 5(1), Article 1.
- Towns, J., Cockerill, T., Dahan, M., Foster, I., Gaither, K., Grimshaw, A., Hazlewood, V., Lathrop, S., Lifka, D., Peterson, G. D., Roskies, R., Scott, J. R., & Wilkins-Diehr, N. (2014). XSEDE: Accelerating Scientific Discovery. *Computing in Science & Engineering*, 16(5), 62–74.
<https://doi.org/10.1109/MCSE.2014.80>
- Yunaningsih, A., Indah, D., & Septiawan, F. E. (2021). Upaya Meningkatkan Kualitas Layanan Publik Melalui Digitalisasi. *Altasia Jurnal Pariwisata Indonesia*, 3(1), Article 1.
<https://doi.org/10.37253/altasia.v3i1.4336>

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