

**JOURNAL OF INFORMATION
SYSTEM AND TECHNOLOGY
MANAGEMENT (JISTM)**www.jistm.com**THE INFLUENCE OF PERSONNEL MANAGEMENT
INFORMATION SYSTEMS AND HUMAN RESOURCES
COMPETENCE ON SYSTEM USER SATISFACTION
THROUGH PROMOTION SERVICE QUALITY**Asmawati^{1*}, Antong², Muammar Khaddapi³, Syafruddin⁴¹ Postgraduate Student Master of Management, Muhammadiyah University of Palopo, Indonesia
Email: asmawaticiq@gmail.com² Department of Economy and Business, Muhammadiyah University of Palopo, Indonesia
Email: antong.cib@gmail.com³ Department of Economy and Business, Muhammadiyah University of Palopo, Indonesia
Email: khadapifox85@gmail.com⁴ Department of Economy and Business, Muhammadiyah University of Palopo, Indonesia
Email: syafruddin@umpalopo.ac.id

* Corresponding Author

Article Info:**Article history:**

Received date: 27.10.2024

Revised date: 11.11.2024

Accepted date: 15.12.2024

Published date: 30.12.2024

To cite this document:

Asmawati, A., Antong, A., Khaddapi, M., & Syafruddin, S. (2024). The Influence Of Personnel Management Information Systems And Human Resources Competence On System User Satisfaction Through Promotion Service Quality. *Journal of Information System and Technology Management*, 9 (37), 330-351.

DOI: 10.35631/JISTM.937025**Abstract:**

The aim of this research is to find out how SIMPEG and human resource competence can provide quality promotion services so that they can provide satisfaction to system users. This research is a quantitative study with a population of 109 which is a combination of employees from the Health Service and the East Luwu Regency Education Service, where the sample was determined using saturated sampling where the entire population was sampled. Data collection uses a questionnaire that has been tested using validity and reliability tests. The data that has been collected will be subjected to descriptive and verification tests using the SmartPLS statistical tool. SIMPEG has a direct positive and significant effect on the quality of promotion services but is not significant on user satisfaction, while the quality of promotion services is able to mediate the relationship between SIMPEG and user satisfaction. Human resource competency has a positive and significant effect on the quality of promotion services and user satisfaction. Service quality has also been proven to be able to mediate the relationship between competency and user satisfaction. The conclusion of this research is that the important role of the use of information systems, in this case SIMPEG, is considered capable of providing satisfaction with promotion services for employees, especially for employees of the Health Service and Education Service. Increasing human resource competency is important in providing promotion services to employees in the Health Service and Education Service so that it can increase employee 3rd system user satisfaction.

**Keywords:**

Personnel Management Information System; Human Resources Competency; Quality of Promotion Services; User Satisfaction

Introduction

Information systems play a very large and influential role in organizations because of the increasing capabilities of computer technology and have produced strong communication networks that organizations can use to access information quickly from various corners of the world and to control activities that are not limited to space and time. . These networks have transformed the sharpness and shape of organizational activities, creating the foundation for entering the digital era (Ngoc Duy Phuong & Thi Dai, 2018).

The rapid progress of information technology and the potential for its widespread use, opens up opportunities for accessing, managing and utilizing large volumes of information quickly and accurately. Utilization of information technology to improve the ability to process, manage, channel and distribute information and public services. Through this process, the government can optimize the use of advances in information technology to eliminate organizational and bureaucratic barriers, as well as form a network of management systems and work processes that enable government agencies to work in an integrated manner to simplify access to all information and public services that must be provided by the government (Gürkut & Nat, 2018).

The implementation of e-Government in its application starts from a simple form of service, namely the provision of computer-based information and data regarding the implementation of government administration and development as a form of openness (transparency) in the implementation of public services. Another simple form of service is that e-Government can be used as a means of internal communication between regional work units (SKPD). Because basically it cannot be denied that almost every day bureaucrats in government make important decisions concerning the lives of many people and the sustainability/existence of the government in question (Komalasari et al., 2019).

In implementing government services in Indonesia, both central and regional, management information systems are also used to facilitate processes and access to services, one of which is the Personnel Management Information System (SIMPEG). In Minister of Home Affairs Decree No. 17 of 2000 stated that: Personnel Management Information System (SIMPEG) is an integrated totality consisting of processing equipment including collection of procedures, processing power and software, storage devices including data centers and data banks as well as communication devices that are interrelated, interdependent and mutually determine each other in the context of providing information in the field of personnel.

The Personnel Management Information System (SIMPEG) is a form of e-Government implementation by the government through a computer-based information system. With the Employee Management Information System (SIMPEG), personnel administration service procedures starting from promotions, employee transfers, preparation of rank lists, employee retirement are still manual in nature, that is, you have to re-collect personnel files or documents, which are then processed by each sector. concerned, where this method is very ineffective

because it requires a long process. With the existence of an employee management information system, this method has begun to be reduced because personnel data is already stored in a database (Monalisa et al., 2014).

Management of administrative processes and personnel services has long been considered a routine activity and tends to be repeated throughout the year, so it is considered something that is standard and does not change. In reality, it is not uncommon for there to be delays in fulfilling various personnel service rights. Apart from having to complete various basic tasks and daily functions, ASNs are still burdened with recurring obligations to complete various personnel files, starting from Photocopies of Employee Cards (Karpeg), Decree on Promotion, Decree on Appointment to Position. Structural/Functional, Education and Training Graduation Certificates, Diplomas and Employee Performance Target Assessments (SKP) and so on. Personnel administration processing has been carried out computerized.

Data regarding personnel is already in a database with the employee system application program (SIMPEG). However, this application still has shortcomings, including the imperfect features for making decision letters (SK) for promotions and periodic salary increases, so it still uses Excel and Word files. So it can be realized that all personnel document products owned by customers (ASN), can be guaranteed to originate and be obtained from personnel agencies/management. The problem of course lies in the system for managing, storing and retrieving ASN files at the civil service agency itself.

Paying close attention to the description above and paying attention to the existing conditions, there are several challenges specifically faced by organizations at the East Luwu Regency Education Service and Health Service, especially regarding the quality of promotion services. Promotion to the rank of State Civil Apparatus (ASN) is an award for work performance and service to the State after passing certain requirements. Apart from that, promotion is also intended as an incentive for ASN to further improve their work performance and service. Promotion is also an important element in ASN career development. With a promotion that is timely and on target, it is hoped that it will foster work enthusiasm for the ASN concerned, because a timely promotion will have an impact on increasing the basic salary, so that it will also indirectly impact the welfare of the ASN concerned.

Many promotion services experience delays, as a result of delays in completing files for promotion from the SKPD where ASNs work as well as other reasons that determine the promotion process for civil servants, including at the Personnel and Human Resources Development Agency. Due to this delay, the promotion service carried out by the Personnel and Human Resources Development Agency, which ultimately resulted in the issuance of the Promotion Decree Excerpt also experienced a delay. Another problem faced is the low quality of personnel information that will be processed into personnel data using SIMPEG, inadequate human resources. The meaning of human resources here are employees who manage or are related to operating and maintaining the system so that it can function optimally and sustainably in the implementation of the Personnel Management Information System.

In implementing the use of SIMPEG, there are still SKPD staff who still find it difficult to operate SIMPEG in proposing promotions to ASN ranks. Employees usually propose manually by bringing a cover letter which is submitted to the BKSDM secretariat and must be disposed of by the Head of BKSDM. This also causes files to pile up in the office of the head of BKSDM

and allows documents to be lost due to bureaucracy that is not directly on target. Adaptation to developments in information technology in electronic system-based personnel administration management using SIMPEG is relatively low.

Considering the existence of several of these problems, and based on the background above, the researcher is interested in conducting research regarding how the influence of SIMPEG and Human Resource Competency affects User Satisfaction and the Quality of Promotion Services for Employees of the Health Service and Education Service of East LuwuRegency.

Literature Review

Personnel Management Information System (SIMPEG)

Policy Management information system is an integrated system of humans and machines to present information to support operations, management and decision-making processes in an organization (Jonar, 2018). Samauna, (2022) suggests that a management information system is a method that produces timely (up to date) information for management about the external environment and internal operations of an organization, with the aim of supporting decision making in order to improve planning and control.

The personnel management information system or commonly abbreviated as SIMPEG is an application that contains structured personnel data so that personnel data can be obtained and accessed easily. The background to SIMPEG is the rapid development of information technology, the need for fast and accurate information, and the use of information systems which makes it possible to automate work and service functions to provide good service as required. According to the Ministry of Home Affairs No. 17 of 2000 SIMPEG is an integrated totality consisting of processing equipment including collectors, procedures, processing personnel and software, storage devices including data centers and data banks as well as communication devices that are interrelated, dependent and determine each other in the context of providing information in the field of personnel.

SIMPEG Online is implemented in almost all government agencies or institutions in Indonesia so that current personnel data can be integrated and obtained quickly. Widyawan & Idris, (2021) believes that SIMPEG is a systematic procedure for collecting, storing, maintaining, retrieving and validating data required by an organization about human resources, personal activities, characteristics of organizational units. SIMPEG is concerned with designing personnel data formats and managing employee data collection systems, position data, education data, award data, education and training data, family data, attendance data and so on, so that information about employee needs planning, assessment can be managed. performance, career coaching and development, welfare, and dismissal or retirement.

In conclusion from the explanation above regarding the definition of SIMPEG, it can be concluded that SIMPEG is an arrangement for the process of collecting, processing, analyzing, presenting data and information needed to support administration and management relating to employees. Based on the views of the experts above, it can be concluded that SIMPEG is an integrated system that is related to the process of collecting, processing, storing and presenting the results of information about personnel data which can be useful in the organization's managerial process.

To measure the level of SIMPEG size in this research, the measure proposed by Maulida et al., (2023) consisting of: Program Understanding. In this case, what is meant by understanding the program is the ability of employees to understand and understand how to use the implementation of the SIMPEG. Right on target. This on-target indicator is carried out to see whether employees with SIMPEG are appropriate in receiving benefits, and whether the program is in accordance with the needs of user employees within the East Luwu Regency Regional Government. On time. Timeliness is an action that complies with the implementation time and can be completed within a predetermined time period. Achievement of Goals. Goals are a description of everything that an organization wants to achieve or produce within a certain period of time which is useful for an organization to measure the effectiveness of a program. Real Change. Change is a changing condition where the previous condition and the current condition are not the same. What is meant by real change here is the change in circumstances that occur in providing services by utilizing the application of SIMPEG, whether it shows changes for the better or whether it is the same before personnel services using SIMPEG.

Human Resources Competency

Barbara et al., (2022) defines competency as mastery of a task, skills, attitudes and appreciation needed to support success. This shows that competence includes the tasks, skills, attitudes and appreciation that an organization's human resources must have to be able to carry out work tasks in accordance with those imposed by the organization.

According to government regulation no. 101 of 2000 in Sutrisno, competency is the ability and characteristics possessed by a State Civil Servant in the form of knowledge, attitudes, behavior required in their duties and position. As for Bhutto et al., (2023) stated that competence is defined as the knowledge, skills and abilities mastered by someone who have become part of themselves, so that they can carry out cognitive, effective and psychomotor behaviors as well as possible.

Lubis et al., (2022) suggests that human resource competency is a combination of knowledge, skills, attitudes and personal characteristics in completing a job, which can be measured using agreed standards, and which can be improved through training and development. Klepić, (2022) stated that human resource competency is an ability that is based (integrated) on knowledge, skills, and supported by the attitude required in carrying out their work duties. Based on the opinions of the experts above, it can be concluded that human resource competency describes the basic knowledge and performance standards required to successfully complete a job or hold a job or hold a position.

According to Willian et al., (2021), human resource competency competence relates to skills, abilities as well as knowledge and personality characteristics that directly influence the performance of each individual. Choi et al., (2022), put forward indicators of human resource competency, namely: Skills or expertise. Expertise here is the expertise of each employee in carrying out their duties and their skills in providing services. Individual Qualities. Organizational performance, and even its development, is closely related to the abilities of the individuals who manage the company or organization. Knowledge or Knowledge. Knowledge is knowledge or knowledge or experience possessed by each employee in accordance with their field in terms of providing services.

To measure the level of human resource competency, the indicators proposed by Klepić, (2022) states that competence is the accumulation of an individual's ability to carry out their work, which includes elements of knowledge, attitudes, skills and other personal elements. Competency is very complex. Therefore, to measure a person's competence, indicators are needed that include all of these elements, namely:

Motive is a competency related to an individual's consistent thinking and encouraging him to take action (behavior). Characteristic is a competency related to character or independent disposition that makes an individual behave in a certain way. These traits include: self-confidence, endurance, and others. Self concept is a competency related to the attitudes and values possessed by an individual. Knowledge is a competency related to the information or knowledge possessed by an individual in a particular field of work. Skills are competencies related to an individual's physical or mental work.

Quality of Promotion Services

In civil service, there are known ranks for civil servants. The definition of rank in the Civil Servant Regulations states that Government Number 9 of 2003 concerning the Authority for Appointment, Transfer and Management means that rank is a position that indicates the level of a civil servant based on his or her position in the staffing system and is used as a basis for remuneration.

Promotion is a motivation or incentive for civil servants to further increase their dedication in carrying out their duties. There is also a promotion which is an award given for the service of the civil servant concerned to the State. Promotions are usually based on: ability, seniority, exams, interviews and a combination of several factors.

The application of information and communication technology is also used to improve the performance of government functions and services that were previously traditional to become more modern or digital documents. This makes SIMPEG one of the tools in implementing regional government policies in assisting regional personnel matters independently. For this reason, the promotion feature is presented in the SIMPEG application to support promotion services.

Soebandhi et al., (2020) stated that quality service really depends on various aspects, namely the pattern of implementation (management), human resource support, and institutions. In terms of implementation patterns, public services still have various weaknesses, including: less responsive, less informative, less accessible, less coordination, bureaucratic, less willing to listen to complaints/suggestions/aspirations from the public, and inefficient.

Service quality is the expected level of excellence and control over that level of excellence to meet user desires. Rita et al., (2019) defines service as the behavior of sellers towards buyers by providing satisfaction to consumers, so that consumers feel appreciated and get goods or services as desired. Based on several opinions, it can be concluded that service quality is an activity carried out by an agency or company to meet user needs as expected based on predetermined procedures.

The best service to users and quality levels can be achieved consistently by improving services and paying special attention to service performance standards, both internal service standards

and external service standards. The indicators that will be used in this research will refer to Akroush et al., (2019) which consists of the following: Tangibles, including physical facilities, equipment, personnel and communications. Reliability is the ability of the service unit to provide the promised service correctly. Responsiveness, namely the willingness to help consumers take responsibility for the quality of the services provided. Assurance includes the knowledge, ability, politeness and trustworthiness of staff, free from danger, risk and doubt. Empathy, including ease of making relationships, good communication, personal attention, and understanding user needs.

User Satisfaction

Satisfaction is the accumulation of consumer results in using products and services. Customers feel satisfied if after purchasing a product and using the product the customer feels the product is good or in accordance with what the consumer expects (Bustami et al., 2020). Every new transaction or experience will have an influence on satisfaction. A satisfied customer is a customer who will share satisfaction with the producer or service provider and will share experiences with other customers.

Zun et al., (2018) Satisfaction is the extent to which the benefits of a product are felt (perceived) in accordance with what was expected. If what you feel is the same or better than expected, you will feel satisfied (satisfaction). If what is felt is lower than expected, the customer will say they are not satisfied (dissatisfaction). Basically, this satisfaction should be the goal of every marketing. Companies must understand what consumers actually expect from their products. The more precisely marketers formulate consumer expectations, the easier it will be to provide satisfaction (Jones & Shandiz, 2015).

Othman et al., (2020) suggests that user satisfaction includes the overall level of satisfaction (overall satisfaction), suitability of satisfaction with user expectations (expectation), and the level of user satisfaction during the relationship with the agency (experience). User satisfaction is the result of users' opinions and assessments of the service performance provided by service providers. Based on the explanation above, to measure the level of community satisfaction, the indicators proposed by Othman et al., (2020) namely, the level of overall satisfaction, expectations, and experience.

Framework Development

The development of a research framework was carried out to see the relationship between research variables based on previous research to develop research hypotheses. The development of a framework and hypothesis is also the basis for formulating a research conceptual framework. The following is the relationship between research variables:

The Relationship between Employee Management Information Systems and Service Quality and User Satisfaction

Research on the relationship between Management Information Systems and service quality often shows how system quality, information quality and service quality can influence user satisfaction. Several studies have explored how these elements contribute to user satisfaction in the context of applications, e-learning, and public services. Samauna, (2022) examining the influence of system quality, information quality and Information System Application service quality on user satisfaction found that system, information and service quality had a significant impact on user satisfaction. Karina et al., (2022) researching the influence of system quality,

information quality, and service quality on e-learning system user satisfaction. This research shows that system, information, and service quality all have a positive impact on user satisfaction, indicating that good information systems can improve service quality. The research research shows that information system quality, information quality, and service quality are key factors that contribute to user satisfaction. The use of a good management information system can help improve service quality by ensuring a reliable system, accurate information and responsive service support. These factors, in turn, can increase user satisfaction and create a more positive experience.

H1: It is suspected that SIMPEG has a positive and significant effect on service quality.

H2: It is suspected that SIMPEG has a positive and significant effect on user satisfaction.

The Relationship between Human Resource Competency and Service Quality and User Satisfaction

Research on the relationship between competence and service quality shows that competence plays an important role in shaping service quality. Competencies can include various elements such as knowledge, skills and professional attitudes required to provide quality services. Competence and user satisfaction show that competence has a significant impact on user satisfaction. Competency can consist of various elements such as academic competence, professional competence, and technical competence. Study Gema et al., (2023), this research underlines the importance of competence in improving service quality. Good human resource competencies, including knowledge of services and positive attitudes, contribute to improving service quality. These findings indicate that to achieve good service quality, organizations need to pay attention to developing human resource competencies, especially in terms of knowledge and interaction with customers. Study Indiyati et al., (2021) highlighting the importance of competence in shaping user satisfaction. Good competencies contribute to higher levels of user satisfaction. The results of this research indicate that to achieve high user satisfaction, organizations need to pay attention to developing employee human resource competencies, both in terms of academic and professional skills. To achieve high service quality and provide satisfaction to users, organizations need to ensure that their employees have sufficient competence to provide quality services.

H3: It is suspected that human resource competency has a positive and significant effect on service quality.

H4: It is suspected that human resource competence has a positive and significant effect on user satisfaction.

Relationship between Service Quality and User Satisfaction

Previous research shows that service quality plays an important role in shaping user satisfaction. Service quality dimensions such as reliability, responsiveness, empathy, guarantee, and physical aspects (tangibles) can influence users' perceptions of services and ultimately influence their satisfaction. Study Pramesty et al., (2022) revealed that service quality has an impact on user satisfaction and continued use of applications or information systems. Overall, service quality has a significant impact on user satisfaction.

H5: It is suspected that human user satisfaction has a positive and significant effect on service quality.

The Relationship between SIMPEG and HR Competence on User Satisfaction through Service Quality

Research by Jonar, (2018) shows that effective implementation of SIMPEG can improve the quality of services provided by organizations. An integrated and easily accessible system allows employees to provide faster and more accurate services to users. This research found that increased service quality contributed significantly to user satisfaction. Users feel more satisfied when the service they receive is efficient and timely. Maulida et al., (2023) emphasizes the importance of HR competency in providing high quality services. Competencies that include technical skills, communication skills, and job knowledge enable employees to understand and meet user needs more effectively. This research found that employees with good competencies tend to provide higher quality services, which in turn increases user satisfaction. Research by Anggreani & Wilandari, (2023) explore the interaction between SIMPEG and HR competency in influencing service quality and user satisfaction. They found that integrated SIMPEG not only increased administrative efficiency but also supported employee competency development through access to relevant information and training. The research results show that when SIMPEG is used optimally and employees have adequate competence, the quality of services provided increases significantly. This improvement in service quality contributes directly to higher user satisfaction.

H6: It is suspected that SIMPEG has a positive and significant effect on user satisfaction through service quality.

H7: It is suspected that human resource competence has a positive and significant effect on user satisfaction through service quality.

Conceptual Framework

The results of previous research and the relationship between research variables mean that the conceptual framework of this research can be described as follows:

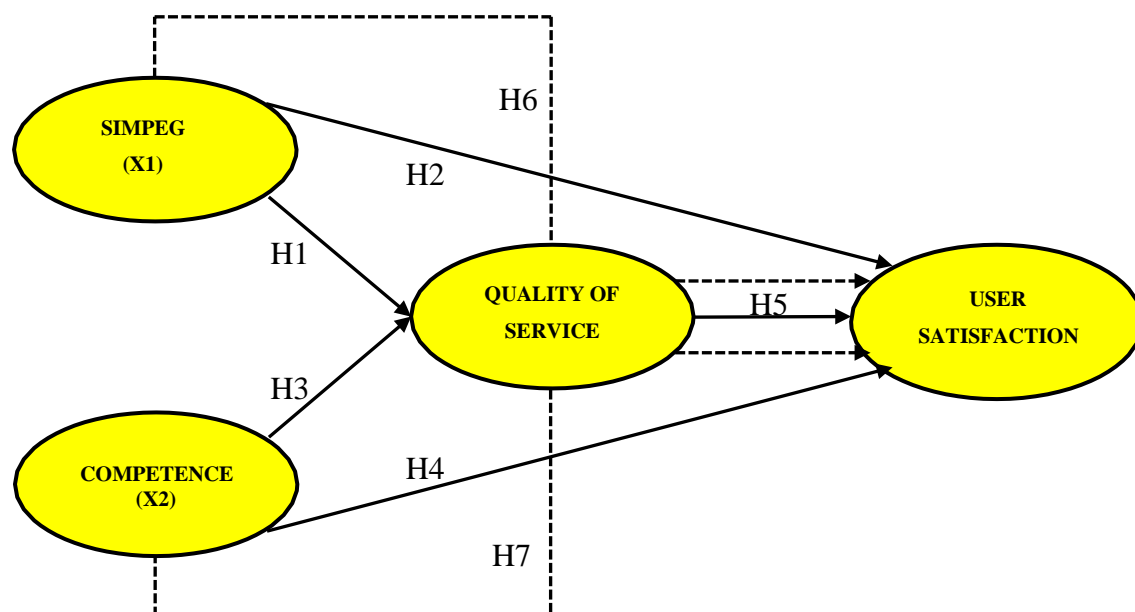


Figure 1: Conceptual Framework

Methodology

This research was designed as descriptive explanatory research with a quantitative approach. Quantitative research is research that explains phenomena that occur at the research location. This research studies the observed variables descriptively and analyzes the influence that occurs between the independent variables on the dependent variable. The variables in this research consist of the personnel management information system, human resource competency, promotion service quality and system user satisfaction.

Population is a comprehensive collection of objects that are of interest to researchers, according to Jogiyanto, & Abdillah, (2009) The population is all groups originating from the research object and becomes the researcher's criteria, these objects can be living things, system objects and procedures, phenomena and so on, then the population is all employees at the East Luwu Regency Education Service totaling 57 people and the Department East Luwu District Health has 52 people, so the total population is 109 employees. The sampling technique in this study used saturated sampling, so the entire population was sampled as 109 respondents.

Data was collected using a questionnaire where before being distributed to respondents, an instrument test was carried out, namely a validity test and a reliability test. The data that has been collected will be analyzed descriptively and verified using the SmartPLS statistical tool.

Data Analysis

Before carrying out data processing to see the influence of the relationship between research variables, there are several tests that must be fulfilled, namely validity and reliability tests.

Validity and Reliability Test

Validity testing uses two methods, namely outer loading and AVE value. We can see the results of data analysis in full in the image and table below:

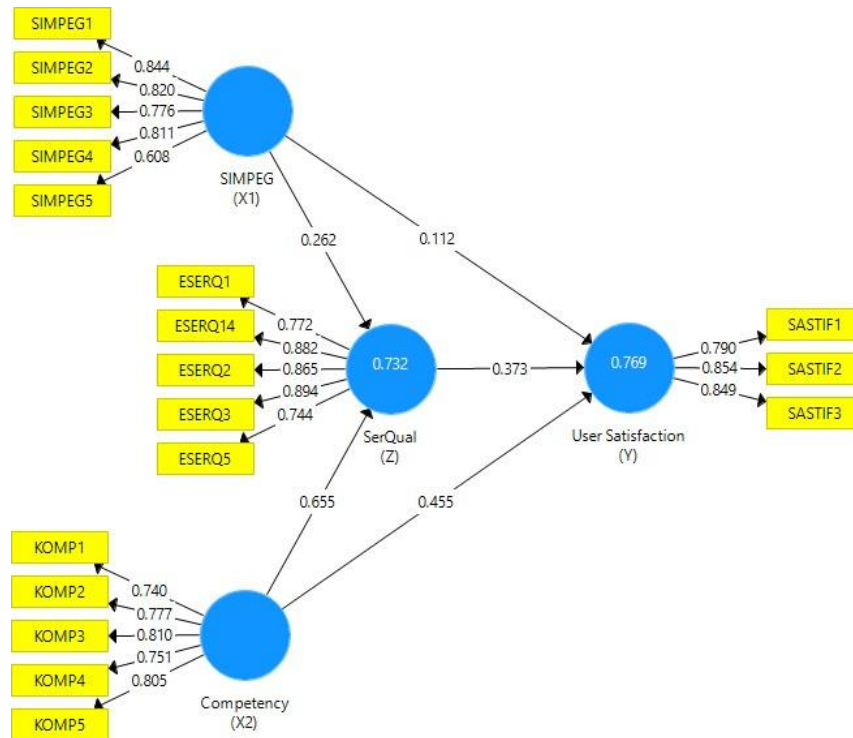


Figure 2. Outer Loading Testing

Table 1. Outer Loading Test

Variable	Indicator	Outer Loading	Explanation
Service Quality (Z)	ESERQ1	0.772	Valid
	ESERQ14	0.882	Valid
	ESERQ2	0.865	Valid
	ESERQ3	0.894	Valid
	ESERQ5	0.744	Valid
Competency (X2)	COMP1	0.740	Valid
	COMP2	0.777	Valid
	COMP3	0.810	Valid
	COMP4	0.751	Valid
	COMP5	0.805	Valid
User Satisfaction (Y)	SASTIVE1	0.790	Valid
	SASTIVE2	0.854	Valid
	SASTIVE3	0.849	Valid
SIMPEG (X1)	SIMPEG1	0.844	Valid
	SIMPEG2	0.820	Valid
	SIMPEG3	0.776	Valid
	SIMPEG4	0.811	Valid
	SIMPEG5	0.608	Valid

Source: Primary Data Processed SmartPLs, 2024

Table 2. Validity Test

	Average Variance Extracted (AVE)
Competency_(X2)	0.604
SIMPEG_(X1)	0.603
SerQual_(Z)	0.695
User Satisfaction_(Y)	0.692

Source: Primary Data Processed SmartPls, 2024

This test was carried out to measure the level of suitability of each indicator to describe the variables used in the instrument by looking at the data resulting from the loading factor analysis. The value of 0.7 is the expected value, which is often used as a minimum limit of ≥ 0.6 , while the loading factor value < 0.6 must be removed from the model because it has a low level of validity or is considered unable to explain the variable construct. After calculating the loading factors, it can be seen that the values for all indicators are as expected > 0.7 and the minimum limit is $>$ so it can be said that all indicators are able to describe the variables and meet the requirements for further analysis.

A variable can be said to be valid if it is able to explain the type of indicator with an Average Variance Extracted (AVE) value of 0.5 or more. Based on the analysis results displayed in table 2 below, it can be seen that the AVE values for all constructs are > 0.5 so they are declared to meet the requirements for further analysis.

To find out how consistent each indicator is in explaining the variable construct, you can see the analysis results in the composite reliability or Cronbach's alpha column which is set at a value of ≥ 0.7 . Based on the analysis results displayed in table 3 below, it can be seen that the Cronbach's alpha and composite reliability values are ≥ 0.7 so that all variables are suitable for use in further analysis.

Table 3. Reliability Test

Variable	Cronbach's Alpha	Composite Reliability	Explanation
Competency_(X2)	0.836	0.884	Reliable
SIMPEG_(X1)	0.831	0.882	Reliable
SerQual_(Z)	0.888	0.919	Reliable
User Satisfaction_(Y)	0.777	0.870	Reliable

Source: Primary Data Processed SmartPls, 2024

After testing the PLS Algorithm until it meets all the specified requirements, Bootstrapping testing is then carried out to determine the path coefficients (Path Coefficients) or the significance of the independent variable (X) on the dependent variable (Y) in order to test the research hypothesis. An independent variable can be said to have a significant effect on the dependent variable if the statistical significance value of $T > t$ table (in this study t table = 1.659) and P value < 0.05 , the influence value is shown in tables 4 and 5 and the SEM model in figure 3 below This:

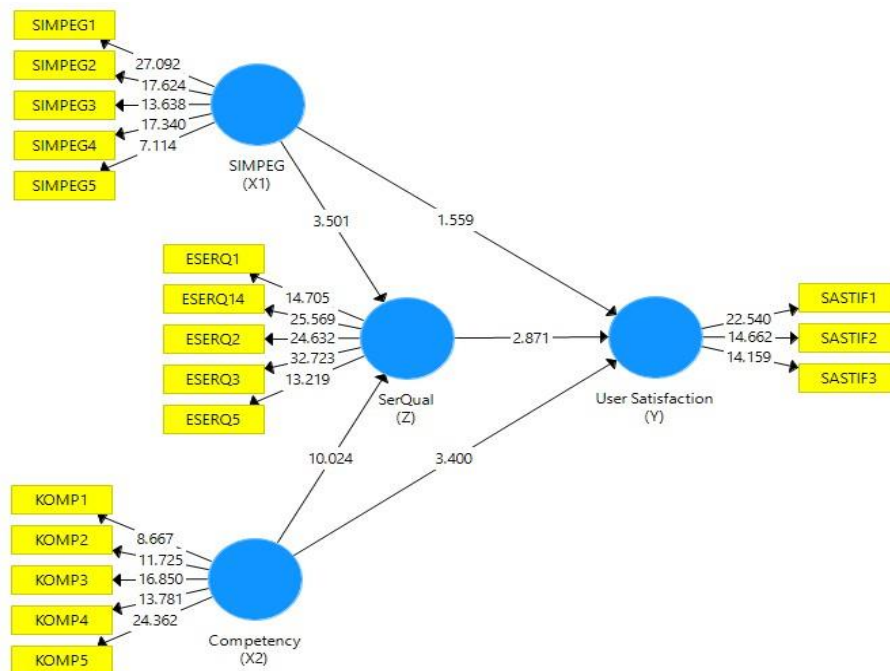


Figure 3. SEM Model

Table 4. Direct Effect Coefficients

Variable	T Stat	P Value	Explanation
Competency_(X2) -> SerQual_(Z)	10,024	0,000	Positively Significant
Competency_(X2) -> User Satisfaction_(Y)	3,400	0.001	Positively Significant
SIMPEG_(X1) -> SerQual_(Z)	3,501	0.001	Positively Significant
SIMPEG_(X1) -> User Satisfaction_(Y)	1,559	0.120	Positive Not Significant
SerQual_(Z) -> User Satisfaction_(Y)	2,871	0.004	Positively Significant

Source: Primary Data Processed SmartPls, 2024

Table 5. Indirect Effect Coefficient

Variable	T Stat	T Table	Explanation
Competency_(X2) -> SerQual_(Z) -> UserSatisfaction_(Y)	2,901	0.004	Positively Significant
SIMPEG_(X1) -> SerQual_(Z) -> User Satisfaction_(Y)	1,982	0.048	Positively Significant

Source: Primary Data Processed SmartPls, 2024

Hypothesis Testing

First hypothesis: The results of the T statistical analysis show that the calculated t value = 3.501 > t table = 1.659 with a P value of 0.000 < than the cut off value of 0.05. This means that SIMPEG has a positive and significant influence on service quality. So the first hypothesis is declared accepted.

Second hypothesis: The results of the T statistical analysis obtained a calculated t value = $1.559 < t_{table} = 1.659$ with a P value of $0.120 >$ than the cut off value of 0.05. This means that SIMPEG has a positive and significant influence on user satisfaction. So the second hypothesis is rejected.

Third hypothesis: The results of the T statistical analysis show that the calculated t value = $10.024 > t_{table} = 1.659$ with a P value of $0.000 <$ than the cut off value of 0.05. This means that competence has a positive and significant influence on service quality. So the third hypothesis is declared accepted

Fourth hypothesis: The results of the T statistical analysis show that the calculated t value = $3,400 > t_{table} = 1,659$ with a P value of $0.000 <$ than the cut off value of 0.05. This means that competence has a positive and significant influence on user satisfaction. So the fourth hypothesis is declared accepted

Fifth hypothesis: The results of the T statistical analysis show that the calculated t value = $2.871 > t_{table} = 1.659$ with a P value of $0.000 <$ the cut off value of 0.05. This means that service quality has a positive and significant influence on user satisfaction. So the fifth hypothesis is declared accepted.

Sixth hypothesis: The results of the T statistical analysis show that the calculated t value = $1.982 > t_{table} = 1.659$ with a P value of $0.04 <$ than the cut off value of 0.05. This means that SIMPEG has a positive and significant influence on user satisfaction through service quality. So the sixth hypothesis is declared accepted.

Seventh hypothesis: The results of the T statistical analysis show that the calculated t value = $2.901 > t_{table} = 1.659$ with a P value of $0.000 <$ than the cut off value of 0.05. This means that competence has a positive and significant influence on user satisfaction through service quality. So the third hypothesis is declared accepted

Discussion

The Effect of SIMPEG on Service Quality

Analysis of research data shows a positive and significant influence between SIMPEG and service quality. Personnel Management Information System (SIMPEG) is a system used to manage personnel data electronically. SIMPEG aims to increase the efficiency and effectiveness of human resource management in organizations, especially in government agencies. This research found that SIMPEG has a positive and significant influence on the quality of promotion services for Education Service and Health Service employees.

SIMPEG allows personnel data management to be carried out automatically and in an integrated manner. This reduces the burden of time-consuming and error-prone manual administration. With a more efficient system, employees can receive faster and more accurate service, thereby improving overall service quality. SIMPEG provides a centralized and integrated database, enabling personnel data to be accessed and updated in real-time. High data accuracy ensures that the information provided to employees and the public is accurate and up to date. This is important in providing quality services, especially in terms of decision making and providing information.

With SIMPEG, every process and transaction related to personnel can be recorded and tracked easily. This increases transparency in human resource management and reduces the potential for irregularities. Employees who experience transparency in service will be more satisfied and trust the existing system. When employees experience ease and speed in the administrative

process, their level of satisfaction with internal services increases. This satisfaction has a direct impact on employee motivation and productivity, which then contributes to improving the quality of external services.

These results are in line with previous research that has identified a relationship between the use of management information systems and improved service quality. According to Nurhasanah et al., (2023), the implementation of SIMPEG in government agencies has increased accuracy and speed in processing personnel data, which in turn increases employee satisfaction with administrative services. Another study by Noviyanti et al., (2022) shows that the integration of information technology in personnel management can reduce the time required for administrative processes, so that services become faster and more efficient.

The Effect of SIMPEG on User Satisfaction

Analysis of research data shows a positive and significant influence between SIMPEG and system user satisfaction. The Personnel Management Information System (SIMPEG) is a tool used to manage personnel data effectively and efficiently. Based on the results of this research, it was found that SIMPEG had a positive influence on employee satisfaction, but this influence was not significant. This can be caused by several factors, including limitations in work process efficiency, data accuracy that is not directly felt, transparency and accountability that are not yet optimal, limited ease of access to information, and the influence of other external factors.

Although SIMPEG is able to increase efficiency in managing personnel data, this improvement may not be significant enough to directly affect employee satisfaction. Employees may consider that efficiency in administration is only a small part of their overall work experience. The accuracy and reliability of the data offered by SIMPEG may not be directly felt by all employees. Some employees may not be as impacted by improvements in data accuracy if they don't interact with the system frequently or don't see its immediate impact on their daily work.

Although SIMPEG increases transparency and accountability, this may not be fully appreciated by employees if there is still distrust in the system or management. If employees feel that transparency is only visible on the surface and is not followed by real action, then the positive impact of SIMPEG on satisfaction will be reduced. Employee satisfaction is influenced by various factors, including the work environment, relationships with coworkers, management policies, and employee welfare. SIMPEG is just one of many factors that influence employee satisfaction. If these other factors are not supportive or even negative, then the positive influence of SIMPEG on satisfaction will be dampened.

The findings of this research are still in line with several previous studies which have explored the relationship between the use of management information systems and employee satisfaction. Study Hamzah et al., (2021) shows that implementing SIMPEG increases efficiency and speed in managing personnel data, but this is not always directly proportional to increasing employee satisfaction. Another study by Karina et al., (2022) found that although SIMPEG increases data transparency and accuracy, other factors such as organizational culture, management support, and employee welfare play a more dominant role in determining employee satisfaction levels.

The Influence of Competency on Service Quality

Analysis of research data shows a positive and significant influence between competence and service quality. Employee competency is one of the key factors that determines the quality of service in various aspects of administration, including promotion services. Competent employees have sufficient knowledge and technical expertise to handle the promotion process. Good knowledge of promotion regulations, procedures and requirements ensures that the process runs smoothly and in accordance with applicable regulations. This increases employee trust and satisfaction with the services provided.

Competency also includes good communication skills. Employees who are able to communicate clearly and effectively can provide accurate and adequate information to employees applying for promotion. These skills are important to ensure that there are no misunderstandings and that all parties understand the ongoing process, ultimately improving the quality of service. Professional attitudes and good work ethics are part of employee competency. Employees who have this attitude tend to provide services with full integrity and responsibility. They maintain confidentiality, respect the rights of other employees, and strive to provide the best service. This professional attitude is very important in creating trust and respect from the employees served.

The results of this research support previous research which has revealed a positive relationship between employee competence and service quality. According to a study by Klepić, (2022), high employee competency, which includes knowledge, skills and professional attitudes, plays an important role in providing quality services. Other research by Alexandermaramis et al., (2019) shows that employees who have good competence are able to complete tasks more effectively and efficiently, thereby increasing customer satisfaction with the services provided.

The Effect of Competence on User Satisfaction

Analysis of research data shows a positive and significant influence between competence and satisfaction. Knowledge, communication skills, professional attitude, problem solving ability, and continuous development are the main factors that explain how competence can increase user satisfaction. Competency includes the technical knowledge and skills possessed by employees. Employees who have in-depth knowledge of their field of work can provide accurate and timely information and services. Users who receive this high-quality service tend to feel more satisfied because their needs are well met.

Competent employees have the ability to solve problems quickly and effectively. When users encounter problems or have complaints, competent employees can provide satisfactory solutions. This capability ensures that users feel valued and prioritized, ultimately increasing their satisfaction levels. Employee competencies that are continuously developed through ongoing training and education ensure that they are always ready to face new challenges and changing user needs. This continuous development is important to consistently maintain and improve service quality, which has a positive impact on user satisfaction.

The results of this research are still in line with previous research which highlights a positive relationship between employee competence and service user satisfaction. According to a study by Choi et al., (2022), employees who have high competence tend to provide more effective and efficient services, which ultimately increases user satisfaction. Other research by Mustafa

et al., (2022) found that competent employees were able to respond to user needs and complaints quickly and appropriately, thereby increasing their satisfaction levels.

The Effect of Service Quality on User Satisfaction

Analysis of research data shows a positive and significant influence between service quality and user satisfaction. Promotion service quality has a positive and significant influence on employee satisfaction, where reliability, responsiveness, transparency, accuracy, fairness, as well as empathy and personal service are the main factors that explain how service quality can increase employee satisfaction.

Reliability in promotion services means that the process is carried out consistently and reliably. Employees who feel that the promotion process is carried out fairly and consistently will feel more satisfied because they believe that their efforts and contributions are recognized fairly. Service responsiveness includes speed and effectiveness in handling promotion requests. Employees who receive quick responses and appropriate assistance from administrative staff feel valued and cared for, which increases their satisfaction levels.

Transparency in the promotion process is very important to ensure that employees understand the criteria and procedures used. Clear explanations and open communication about the steps and assessments used in this process make employees feel more confident and satisfied with the existing system. Accuracy in data processing and fairness in assessment are important components of service quality. Employees who feel that promotion assessments are carried out appropriately and without bias will feel more satisfied. Accuracy in documentation and data processing ensures that there are no errors that harm employees. Employees who feel empathy and personal service from administrative officers will feel more satisfied. Services that consider employees' individual needs and conditions show that the organization cares about their well-being, which increases feelings of satisfaction.

The findings of this study are in line with research Li & Shang, (2020) which shows that responsive, transparent and accurate service in the promotion process can increase employee satisfaction. Other research by Zamir & Kim, (2022) found that employees who received good promotion services tended to be more satisfied and motivated, which had an impact on their performance.

The Influence of SIMPEG on User Satisfaction through Service Quality

The Personnel Management Information System (SIMPEG) is an important tool used to manage personnel data and processes effectively. Based on the results of this research, it was found that SIMPEG has a positive and significant influence on employee satisfaction through the quality of promotion services. These findings indicate that good use of SIMPEG can improve the quality of promotion services, which in turn increases employee satisfaction.

SIMPEG allows personnel data to be managed more quickly and efficiently. This efficiency is very important in the promotion process, which often requires complex and large data processing. With SIMPEG, this process can be carried out more quickly and accurately, which improves the quality of service. SIMPEG ensures that the personnel data used in the promotion process is accurate and reliable. This accuracy is important to ensure that promotion decisions are based on the right information, which reduces the potential for error and increases employee confidence in the system. In addition, SIMPEG provides a centralized and easily accessible

database, which allows the promotion process to be carried out more transparently. This transparency creates trust and satisfaction among employees, because they can see that the process is carried out fairly and based on accurate data.

Various previous studies have shown that the use of management information systems, including SIMPEG, can improve the efficiency and quality of administrative services. According to a study by Jonar, (2018), the implementation of SIMPEG in government agencies increases the speed and accuracy of processing personnel data, which has an impact on the quality of promotion services. Research by Maulida et al., (2023) found that high-quality promotion services, supported by SIMPEG, significantly increased employee satisfaction.

The Influence of Competence on User Satisfaction through Service Quality

Employee competency is an important factor that influences service quality in various aspects of administration, including promotion services. Based on the results of this research, it was found that employee competency has a positive and significant influence on employee satisfaction through the quality of promotion services. This finding is consistent with various previous studies which show that good employee competence has a direct impact on improving service quality and, ultimately, service user satisfaction.

Competency includes the technical knowledge and skills possessed by employees. Employees who have in-depth knowledge of their field of work can provide accurate and timely information and services. In the context of promotion services, competent employees can ensure that the promotion process is carried out efficiently and accurately, which increases the satisfaction of the employees served. Professional attitudes and high work ethics are part of significant employee competencies. Employees who show a professional attitude at work, such as respecting users' time, maintaining the confidentiality of information, and providing services in a friendly manner, will increase user satisfaction. This professional attitude creates a positive service experience and increases employee confidence in the promotion process.

Competent employees have the ability to solve problems quickly and effectively. When employees face problems or have complaints regarding the promotion process, competent employees can provide satisfactory solutions. This capability ensures that employees feel valued and prioritized, which ultimately increases their satisfaction levels. The results of this research are in line with previous research which revealed a positive relationship between employee competence and service quality. According to a study by Indiyati et al., (2021), employees who have high competence tend to provide more effective and efficient services, which ultimately increases service user satisfaction. Other research by Barbara et al., (2022) found that competent employees were able to respond to user needs and complaints quickly and appropriately, thereby increasing their satisfaction levels.

Implications

Government agencies that wish to improve the quality of their services should consider developing and utilizing advanced management information systems such as SIMPEG. This will ensure that the services provided not only meet high quality standards but also meet the needs and expectations of the community. Although information technology such as SIMPEG can make a positive contribution, management needs to ensure that other factors that influence employee satisfaction are also optimized. Thus, SIMPEG implementation can have a more

significant impact on employee satisfaction if it is supported by a conducive work environment and supportive management policies.

Management of government agencies responsible for promotion services needs to ensure that their employees have adequate competencies and continue to develop these competencies through training and education. In this way, the quality of promotion services can be significantly improved, which will ultimately increase employee satisfaction and organizational efficiency. Government agencies that wish to increase the satisfaction of their employees, it is important to ensure that SIMPEG is implemented and used effectively. This will improve the quality of promotion services and ensure that employees feel valued and satisfied with the existing system. In this way, organizations can increase employee motivation and loyalty, which will ultimately contribute to improving overall performance.

Conclusion

The Personnel Management Information System (SIMPEG) has a positive and significant direct effect on the quality of promotion services but is not significant on user satisfaction, while the quality of promotion services is able to mediate the relationship between SIMPEG and user satisfaction. Human resource competency has a positive and significant effect on the quality of promotion services and user satisfaction. Service quality has also been proven to be able to mediate the relationship between competency and user satisfaction.

The important role of using information systems, in this case SIMPEG, is considered to be able to provide satisfaction with promotion services for employees, especially for employees of the Health Service and Education Service. Increasing human resource competency is important in providing promotion services to employees in the Health Service and Education Service so that it can increase employee and system user satisfaction.

Acknowledgement

We would like to Thank the Editor and Reviewers for their detailed and helpful feedback regarding our manuscript, and for providing us with the opportunity to revise our manuscript. We have revised the manuscript according to the Reviewers recommendations. We did our best to give diligent and thoughtful consideration in each of the issues raised by the Reviewers in revising the paper.

References

- Akroush, M., Samawi, G., Zuriekat, M., Mdanat, M., Affara, I., & Dawood, S. (2019). A Comparison of Service Quality Dimensions in the Mobile Service Market: Evidence from Emerging Markets. *Theoretical Economics Letters*, 09(02). <https://doi.org/10.4236/tel.2019.92021>
- Alexandermaramis, Rumengan, J., & Yunazar Manjang. (2019). Competence Determination, Work Spirit, Work Environment With Work Motivation As A Variable Intervening On Personnel Work Satisfaction Lingga Polres. *Zona Manajemen : Program Studi Magister Sains Manajemen Universitas Batam*, 9(1).
- Anggreani, I. D., & Wilandari, A. (2023). Pengaruh Sistem Informasi Manajemen Kepegawaian Simpeg Dan Kepuasan Kerja Terhadap Kinerja Pegawai Kantor Imigrasi Kelas I Non Tpi Pematang. *JURNAL ECONOMINA*, 2(11). <https://doi.org/10.55681/economina.v2i11.809>

- Barbara, B., Kalinowski, K., & Paprocka, I. (2022). Application of Blockchain Technology in Production Scheduling and Management of Human Resources Competencies. *Sensors*, 22(8). <https://doi.org/10.3390/s22082844>
- Bhutto, S. A., Jamal, Y., & Ullah, S. (2023). FinTech adoption, HR competency potential, service innovation and firm growth in banking sector. *Heliyon*, 9(3). <https://doi.org/10.1016/j.heliyon.2023.e13967>
- Bustami, P., Aqsa, M., & Surullah, M. (2020). The Effect Of Work Satisfaction And Work Discipline On Service Performance At Atmedika Hospital In Palopo City. <https://doi.org/10.4108/eai.5-8-2020.2301163>
- Choi, W. S., Kang, S. W., & Choi, S. B. (2022). Creativity in the South Korean Workplace: Procedural Justice, Abusive Supervision, and Competence. *International Journal of Environmental Research and Public Health*, 19(1). <https://doi.org/10.3390/ijerph19010500>
- Gema, N., Ega, & Yanti, N. (2023). The Effect of Competency Human Resources, Work Motivation, and Work Spirit on Employees Performance at the Service Cooperative & Msmes West Sumatra. *Dinasti International Journal of Digital Business Management*, 4(5). <https://doi.org/10.31933/dijdbm.v4i5.2026>
- Gürkut, C., & Nat, M. (2018). Important factors affecting student information system quality and satisfaction. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(3). <https://doi.org/10.12973/ejmste/81147>
- Hamzah, Ana Sriekaningsih, & Lina Warlina. (2021). Implementasi Sistem Informasi Manajemen Kepegawaian (Simpeg) Dalam Meningkatkan Kinerja Pegawai Negeri Sipil Pada Kantor Kementerian Agama Kabupaten Bulungan. *AKUNTANSI '45*, 2(2). <https://doi.org/10.30640/akuntansi45.v2i2.117>
- Indiyati, D., Ghina, A., & Romadhona, A. F. (2021). Human Resource Competencies, Organizational Culture, and Employee Performance. *International Journal of Science and Society*, 3(1). <https://doi.org/10.54783/ijssoc.v3i1.251>
- Jogiyanto, & Abdillah, W. (2009). Konsep dan Aplikasi PLS (Partial Least Square) untuk Penelitian Empiris. Yogyakarta: BPFE.
- Jonar, H. M. (2018). Analisis Penerimaan Sistem Informasi Manajemen Kepegawaian (SIMPEG) dalam Mendukung Penerapan E-Government pada Badan Pusat Statistik Provinsi Sumatera Barat. *JURNAL IPTEKKOM: Jurnal Ilmu Pengetahuan & Teknologi Informasi*, 19(2). <https://doi.org/10.33164/iptekkom.19.2.2017.121-132>
- Jones, J. L., & Shandiz, M. (2015). Service Quality Expectations: Exploring the Importance of SERVQUAL Dimensions from Different Nonprofit Constituent Groups. *Journal of Nonprofit and Public Sector Marketing*, 27(1). <https://doi.org/10.1080/10495142.2014.925762>
- Karina, K., Ibrahim, T., & Dian, D. (2022). Hubungan Sistem Informasi Manajemen Kepegawaian (SIMPEG) Dengan Kualitas Pelayanan Administrasi Kepegawaian. *J-MPI (Jurnal Manajemen Pendidikan Islam)*, 7(2). <https://doi.org/10.18860/jmpi.v7i2.14072>
- Klepić, I. (2022). The Influence of Human Resources Competency Management on the Business Success of Small and Medium Enterprises. *Naše Gospodarstvo/Our Economy*, 68(4). <https://doi.org/10.2478/ngoe-2022-0020>
- Komalasari, S., Hanafi, I., & Setyowati, E. (2019). Aplikasi Program Sistem Informasi Manajemen Kepegawaian (SIMPEG) (Studi pada Badan Kepegawaian Daerah Kota Malang). *Administrasi Publik (JAP)*, 2(4).

- Li, Y., & Shang, H. (2020). Service quality, perceived value, and citizens' continuous-use intention regarding e-government: Empirical evidence from China. *Information and Management*, 57(3), 103197. <https://doi.org/10.1016/j.im.2019.103197>
- Lubis, A. S., Lumbanraja, P., Absah, Y., & Silalahi, A. S. (2022). Human resource competency 4.0 and its impact on Bank Indonesia employees' readiness for transformational change. *Journal of Organizational Change Management*, 35(4–5). <https://doi.org/10.1108/JOCM-02-2021-0045>
- Maulida, W., Rudiana, & Sutisna, J. (2023). Efektivitas Penerapan Sistem Informasi Manajemen Kepegawaian (Simpeg) Di Badan Kepegawaian Dan Pengembangan Sumber Daya Manusia Kabupaten Tasikmalaya Tahun 2021. *Jurna; Administrasi Pemerintah*, 3(1).
- Monalisa, S., Zulkarnaen, A., Sistem, J., Fakultas, I., Dan, S., Uin, T., & Riau, S. (2014). Evaluasi Kualitas Layanan Sistem Informasi Manajemen Kepegawaian (SIMPEG) Menggunakan Metode Servqual (Studi Kasus : Kemenag Kota Pekanbaru). *Jurnal Sains, Teknologi Dan Industri*, 11(2).
- Mustafa, R. M., Azhar, N., Suyono, E., Rusmana, O., & Wahyudin, W. (2022). The Effect of Planning, Management Commitment, and Human Resources Competency on The Absorption of The Goods and Services Budget in The Local Government of Cilacap Region, Central Java. *Jurnal Akuntansi Dan Keuangan*, 10(2). <https://doi.org/10.29103/jak.v10i2.6961>
- Ngoc Duy Phuong, N., & Thi Dai g, T. (2018). Repurchase Intention: The Effect of Service Quality, System Quality, Information Quality, and Customer Satisfaction as Mediating Role: A PLS Approach of M-Commerce Ride Hailing Service in Vietnam. *Marketing and Branding Research*, 5(2). <https://doi.org/10.33844/mbr.2018.60463>
- Noviyanti, Isbandono, P., Utami, D. A., Wibisono, H. K., & Rosdiana, W. (2022). Personnel Management of Village Officials Through SIMPEG Application in Realizing Village SDGs in Kendal Village, Sekaran District, Lamongan Regency. *JKMP (Jurnal Kebijakan Dan Manajemen Publik)*, 10(1). <https://doi.org/10.21070/jkmp.v10i1.1686>
- Nurhasanah, N., Lisman Manurung, & Siti Julaeha. (2023). Analisis Implementasi Kebijakan Sistem Informasi Manajemen Kepegawaian (SIMPEG) Pada Sekretariat Dewan Perwakilan Rakyat Daerah. *Publikauma : Jurnal Administrasi Publik Universitas Medan Area*, 11(1). <https://doi.org/10.31289/publika.v11i1.9521>
- Othman, B., Harun, A., Sadq, Z. M., & Rashid, W. N. (2020). Effects of Service Marketing Mix on Umrah Customer Satisfaction : Empirical Study on Umrah Traveling Industry in Malaysia. *Test Engineering and Management*, 83(March-April 2020).
- Pramesty, D. P., Sapar, S., & Aqsa, M. (2022). The Effect of the 7P Marketing Mix and Service Quality on Customer Satisfaction. *Quantitative Economics and Management Studies*, 3(2). <https://doi.org/10.35877/454ri.qems928>
- Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*, 5(10). <https://doi.org/10.1016/j.heliyon.2019.e02690>
- Samauna, R. H. (2022). Analisis Penerapan Sistem Informasi Manajemen Kepegawaian (Simpeg) Dalam Pengelolaan Administrasi Kepegawaian (Studi Kasus Pada Kantor LAPAS Perempuan Kelas III Mamuju). *Jurnal Ilmiah Universitas Batanghari Jambi*, 22(3). <https://doi.org/10.33087/jiubj.v22i3.2509>
- Soebandhi, S., Wahid, A., & Darmawanti, I. (2020). Service quality and store atmosphere on customer satisfaction and repurchase intention. *BISMA (Bisnis Dan Manajemen)*, 13(1). <https://doi.org/10.26740/bisma.v13n1.p26-37>

- Widyawan, D. C., & Idris, A. (2021). Implementasi Sistem Informasi Manajemen Kepegawaian (Simpeg) Di Badan Kepegawaian Pendidikan Dan Pelatihan Daerah Kota Samarinda. *Jurnal Administrative Reform*, 8(2). <https://doi.org/10.52239/jar.v8i2.5206>
- Willian, R., Hasbullah, H., Widiastuti, F., & Dahmiri, D. (2021). The influence of human resource competency and entrepreneurial characteristics on the performance of small and medium industries. *Jurnal Perspektif Pembiayaan Dan Pembangunan Daerah*, 9(2). <https://doi.org/10.22437/ppd.v9i2.10603>
- Zamir, Z., & Kim, D. (2022). THE EFFECT OF QUALITY DIMENSIONS OF INFORMATION SYSTEMS ON KNOWLEDGE SHARING AND USER SATISFACTION. *International Journal of Entrepreneurial Knowledge*, 10(1). <https://doi.org/10.37335/ijek.v10i1.153>
- Zun, A. B., Ibrahim, M. I., & Hamid, A. A. (2018). Level of satisfaction on service quality dimensions based on SERVQUAL model among patients attending 1 Malaysia clinic in Kota Bharu, Malaysia. *Oman Medical Journal*, 33(5). <https://doi.org/10.5001/omj.2018.76>