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Analysis of the Influence of Knowledge Quality and Skills on ICT Mastery and ASN Performance (Study at the Regional Secretariat of West Kotawaringin Regency)

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Abstract. *This study addresses the gap in the literature on the influence of knowledge on performance by proposing the Information and Communication Technology (ICT) variable as a mediator to bridge the relationship. The purpose of this study is to analyze the influence of Knowledge Quality and Skill Quality on ICT Mastery and its impact on HR Performance. This study uses an explanatory research approach with a population consisting of all ASN Employees of the Regional Secretariat of West Kotawaringin Regency. The respondents of this study were 50 people, and data were collected through a closed questionnaire with an interval scale of 1-5, ranging from Strongly Disagree (STS) to Strongly Agree (SS). Data analysis was carried out using Partial Least Square (PLS). The results of the study indicate that: (1) Better Knowledge Quality contributes to increased ICT Mastery, (2) Better Knowledge Quality is also positively related to HR Performance, (3) Better Skill Quality improves ICT Mastery, (4) Better Skill Quality has a positive effect on HR Performance, and (5) Better ICT Mastery contributes to increased HR Performance. This finding confirms the importance of knowledge and skills in improving ICT mastery and HR performance.*

Keywords: *Knowledge; Mastery; Quality; Skills.*

1. Introduction

The government through the Ministry of State Apparatus Empowerment and Bureaucratic Reform (PANRB) has determined as many as 572,496 State Civil Apparatus (ASN) formations at the national level. Of that number, 78,862 ASN formations are allocated to 72 central government agencies, while 493,634 ASN formations are allocated to regional governments(Ministry of Administrative and Bureaucratic Reform, 2023). In 2022, it is known that the number of ASN will be 4,344,552, consisting of 978,652 (23%) central ASN and 3,365,900 (77%) regional ASN. If we look at the level of knowledge based on education, it is known that 15% are Diploma 1-IV and 70% are Strata I-3(BKN, 2022). It is known that the number of ASN with a Bachelor's degree is 59.3%, while Bachelor's degree is only 10.2% and 0.6% is Bachelor's degree.

The Regional Secretariat of Kotawaringin Barat Regency is a regional agency located in Central Kalimantan Province. It is known that the number of ASN in Kotawaringin Barat is 4,076(BKN, 2022).

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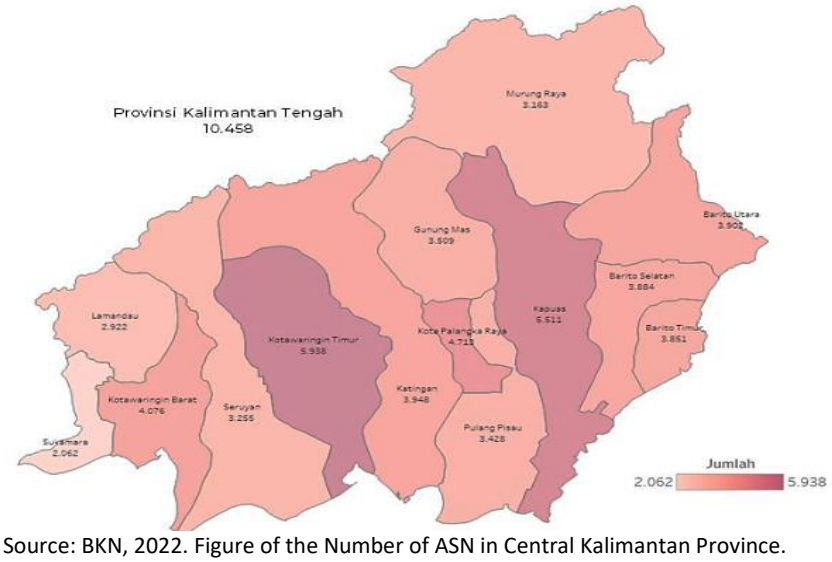

Source: BKN, 2022. Figure of the Number of ASN in Central Kalimantan Province.

The Regional Secretariat of Kotawaringin Barat Regency still faces several development problems such as: 1) Low Quality and Quantity of ASN in financial accountability and Performance; 2) Limited Mastery of ASN in the Implementation and Operationalization of Electronic Government Information Systems; 3) Ineffective Village Governance(LPPD, 2022). Another problem is the low ability of ASN in utilizing the ICT available today, when all aspects of work have entered the digitalization era. In facing the era of the industrial revolution 4.0, it is appropriate for the service office to provide information support for the implementation of public services supported by an information system.

The provision of all community needs should be managed professionally.(Al-Ismail, et al., 2023). To improve this, not only technology is needed, but it must still be equipped with reliable human resources. Advanced technology will not mean much if it is not balanced with employees who are able to operate well. Therefore, the bureaucracy requires human resources in this case, quality ASN to achieve the expected goals. ASN plays an important role in providing public services. By improving the knowledge and skills of ASN, public services can be improved and public satisfaction can increase.

2. Research Methods

The type of research used in this study is an explanatory research type, which aims to determine the relationship between two or more variables (Sugiyono, 2012). This study aims to explain hypothesis testing with the intention of justifying or strengthening the hypothesis with the hope that it can ultimately strengthen the theory used as a basis. In this case, it is to test the influence of knowledge quality, skill quality, ICT mastery and HR performance.

3. Results and Discussion

Respondent Description

This section presents a statistical overview of the respondents' conditions. This respondent description provides some brief information about the conditions of the respondents being studied.The research was carried out by distributing research questionnaires from 25 to 27

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June 2024 to 50 respondents.ASN employees of the Regional Secretariat of West Kotawaringin Regency.The results of the distribution of the research questionnaire obtained 50 questionnaires that were completely filled out and could be processed. The description of the respondents in this case can be presented according to the following respondent characteristics:

Respondent Description Table

No	Characteristics	Total Sample n=50	
		Amount	Percentage (%)
1.	**Gender**		
	Man	27	54.0
	Woman	23	46.0
2.	**Age**		
	25 - 30 years	10	20.0
	31 - 40 years	22	44.0
	41 - 50 years	14	28.0
	51 - 60 years	4	8.0
3.	**Education**		
	High School/Vocational School	5	10.0
	Diploma	10	20.0
	S1	31	62.0
	S2	4	8.0
4.	**Years of service**		
	0 - 10 years	9	18.0
	11 - 20 years	21	42.0
	21 - 30 years	20	40.0
4.	**Space group**		
	I	15	30.0
	II	26	52.0
	III	5	10.0
	IV	4	8.0

Source: Processed primary data, 2024

Data presentation in tables report the majority of respondents in this study were men, namely 27 people (54.0%). Most respondents were aged 31-40 years, namely 22 people (44.0%). The last education of the majority of respondents was S1, namely 31 people (62.0%). Most respondents were included in ASN with Group II, namely 26 people (52.0%).

Outer Loading Calculation Results of Skill Quality Construct

	Outer Loading
Basic Literacy Skill	0.853
Technical Skill	0.722
Interpersonal Skill	0.722
Problem Solving	0.845

The table above shows where all the loading values of the Skill Quality indicator factors have values greater than the critical limit of 0.700. Thus, the Skill Quality variable (X2) can be formed or explained well or can be said to be convergently valid by the Basic Literacy Skill, Technical Skill, Interpersonal Skill, Problem Solving indicators.

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1. Evaluation of the Measurement Model of Information and Communication Technology (ICT) Mastery Variables

In this study, the measurement of the Information and Communication Technology (ICT) Mastery variable is reflected through five indicators, namely: Intensity of technology use, Availability of experts, Investment in technology, Ease of exchanging information, Ease of access for collaboration. Evaluation of the outer model or measurement model can be seen from the outer loading value of each indicator of the Information and Communication Technology (ICT) Mastery variable as follows:

Table of Results of Calculation of Outer Loading of Information and Communication Technology (ICT) Mastery Construct

	Outer Loading
Intensity of technology use,	0.817
Availability of experts,	0.824
Investment in technology,	0.793
Ease of exchanging information,	0.794
Ease of access for collaboration	0.849

The table above shows where all the loading values of the Information and Communication Technology (ICT) Mastery indicator factors have values greater than the critical limit of 0.700. Thus, the Information and Communication Technology (ICT) Mastery variable (Y1) can be formed or explained well or can be said to be convergently valid by the indicators of Intensity of technology use, Availability of experts, Investment in technology, Ease of exchanging information, Ease of access for collaboration.

Based on the results testing convergent validity on each variable, it can be concluded that all indicators are declared valid, so they can be used to explain the variables in this study.

2. Evaluation of Human Resource Performance Variable Measurement Model

In this study, the measurement of HR Performance variables is reflected through eight indicators, namely: quality, quantity, timeliness, effectiveness (Cost Effectiveness), independence (Need for Supervision), and work commitment (Interpersonal Impact). Evaluation of the outer model or measurement model can be seen from the outer loading value of each HR Performance variable indicator as follows:

Outer Loading Calculation Results Table of HR Performance Constructs

	Outer Loading
Quality,	0.808
Quantity,	0.796
Timeliness,	0.759
Effectiveness (Cost Effectiveness),	0.726
Independence (Need for Supervision)	0.743
Work Commitment (Interpersonal Impact).	0.831

The table above shows where all the loading values of the HR Performance indicator factors have values greater than the critical limit of 0.700. Thus, the HR Performance variable (Y2) can be formed or explained well or can be said to be convergently valid by the indicators of

quality (Quality), quantity (Quantity), timeliness (Timeliness), effectiveness (Cost Effectiveness), independence (Need for Supervision), and work commitment (Interpersonal Impact).

Reliability Test

Reliability measurement can be done using 3 (three) methods, namely:

a. *Composite Reliability*.

Composite reliability shows the degree that indicates common latent (unobserved), so that it can show the block indicator that measures the internal consistency of the construct forming indicators, the accepted limit value for the Composite reliability level is 0.7.(Ghozali and Latan 2015)

b. *Average Variance Extracted*(AVE)

If the AVE value > 0.5 then the indicator used in the study is reliable, and can be used for research. It is better if the AVE measurement value is greater than 0.50.(Ghozali and Latan 2015).

c. *Cronbach's alpha*

If the Cronbach alpha value > 0.70 then the construct can be said to have good reliability.

The results of composite reliability, Cronbach's Alpha, and AVE between constructs and their indicators can be seen in the following table:

Reliability Test Results Table

	Cronbach's alpha	***Composite reliability***	***Average variance extracted (AVE)***
ICT	0.874	0.908	0.665
HR Performance	0.869	0.902	0.605
Knowledge	0.875	0.905	0.615
Skill	0.797	0.867	0.621

Source: Processed primary data (2024)

The table shows the results of the reliability test of each construct can be said to be good. This is evidenced by the AVE value of each construct > 0.5, the composite reliability and cronbach alpha values of each construct > 0.7. Referring to Chin's opinion in Ghozali (2011) then the results of the composite reliability of each construct can be used in the analysis process to show whether there is a relationship in each construct, because the results obtained have a value > 0.70, from the results above all variables have a composite reliability value > 0.7 meaning that they have a good reliability value and can be used for further research processes. Reliable shows that the indicators used in real research are in accordance with the real conditions of the research object.

The results of the evaluation of convergent validity and discriminant validity of the variables and the reliability of the variables, it can be concluded that the indicators as measuring variables, are each valid and reliable measuring instruments.

Goodness of fit evaluation

PLS analysis is a variance-based SEM analysis with the aim of testing model theories that focus on prediction studies. Several measures to state that the proposed model is acceptable are R square, and Q square.(Hair et al. 2019).

a. R square

R square shows the magnitude of the variation of endogenous variables that can be explained by other exogenous or endogenous variables in the model. Interpretation of R square according to Chin (1998) quoted (Abdillah, W., & Hartono 2015) are 0.19 (low influence), 0.33 (medium influence), and 0.67 (high influence). The following results of the determination coefficient (R2) of the endogenous variables are presented in the following table.

R-Square Value Table

	R-square
ICT	0.624
HR Performance	0.718

The coefficient of determination (R-square) obtained from the model is 0.624, meaning that the variableMastery of Information and Communication Technology (ICT)can be explained 62.4% by the Knowledge and Skill Quality variables. While the remaining 37.6% is influenced by other variables outside the research. The R square value (0.625) is above the value0.67, meaning the variable*Knowledge*and Skill Qualityhas a big influence on the variable of Mastery of Information and Communication Technology (ICT).

R square valueHR performance of 0.718 means that HR performance can be explained 71.8% by the variables Knowledge, Skill Quality, and Mastery of Information and Communication Technology (ICT), while the remaining 28.2% is influenced by other variables outside the research. The R square value (0.718) is above the value0.67, meaning the variable*Knowledge*, Skill Quality, and Mastery of Information and Communication Technology (ICT)has a high influence on HR performance.

b. Q Square

Q-Square (Q2)describes the measure of prediction accuracy, namely how well each change in the exogenous/endogenous variable is able to predict the endogenous variable.Q-Square predictive relevance for structural models is a measure of how well the observed values are generated by the model and also the estimates.the parameters.Size. Q square above 0 indicates the model has good predictive relevance or model prediction suitability. Q square values are categorized into 3 categories, namely small, medium and large, Q square values of 0.02 - 0.15 are stated as small, Q square values of 0.15 - 0.35 are stated as medium and Q square values >0.35 are stated as large(Mirza Soetirto, Muldjono, and Syarief Hidayatulloh 2023).

The results of the Q-Square value calculation for the structural model of this study are as follows:

Q-square Value Table

	SSO	SSE	Q^2 (=1-SSE/SSO)
ICT	250,000	150,901	0.396
HR Performance	300,000	181,077	0.396
Knowledge	300,000	300,000	0.000
Skill Quality	200,000	200,000	0.000

MarkQ-square (Q2) for the variable Mastery of Information and Communication Technology (ICT) is 0.396 and HR Performance is 0.396 which shows a Q square value above 0.35. This means that the model can be said to have good predictive relevance. This indicates that the estimated parameter values produced by the model are in accordance with the observation values or stated that the structural model fits the data or has good suitability.

Analysis of Influence between Variables and Discussion

This section presents the results of testing the research hypothesis that has been proposed in the previous chapter. To determine whether a hypothesis is accepted or not by comparing t count with t table with the condition that if t count > t table, then the hypothesis is accepted. The value of t table for a significance level of 5% = 1.96. For more details in the section below. The results of testing the influence of each variable in this study can be presented as follows:

Path Coefficients Table

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ICT -> HR Performance	0.324	0.337	0.133	2.432	0.015
Knowledge -> ICT	0.448	0.454	0.108	4.137	0.000
Knowledge -> HR Performance	0.278	0.273	0.111	2,502	0.012
Skill -> ICT	0.433	0.435	0.099	4.371	0.000
Skill -> HR Performance	0.355	0.343	0.131	2,716	0.007

Source: Primary data processing with Smart PLS 4.1.0 (2024)

Based on the results of data processing in the table, the testing of each hypothesis of this study can be explained as follows:

1. **Hypothesis Testing**

H1: The better the quality of knowledge possessed, the better the mastery of ICT.

In testing hypothesis 1, the original sample estimate value was obtained at 0.448. This value proves that Knowledge has a positive effect on Mastery of Information and Communication Technology (ICT), the results of which are also strengthened by the results of the t-test which obtained a calculated t value (4.137) > t table (1.96) and p (0.000) < 0.05, so it can be said that there is a positive and significant influence of Knowledge on Mastery of Information and Communication Technology (ICT). Thus, the first hypothesis can be accepted.

The results of the study indicate that knowledge has a positive and significant influence on the mastery of Information and Communication Technology (ICT). Knowledge is measured

using indicators such as adaptability, practical application, expansion potential, truth, innovation, and justification, while ICT mastery is indicated by the intensity of technology use, availability of experts, investment in technology, ease of exchanging information, and ease of access for collaboration.

The data description shows that in the knowledge variable, the indicator with the highest mean value is truth, while in the ICT mastery variable, the indicator with the highest mean value is ease of exchanging information. This shows that the more accurate the knowledge possessed, the easier the process of exchanging information. This means that true and accurate knowledge can increase the effectiveness of communication and collaboration in the use of technology.

On the other hand, the indicator with the lowest mean value in the knowledge variable is innovation, and in the ICT mastery variable, the indicator with the lowest mean value is the availability of experts. This finding suggests that low innovation capability may be related to low availability of experts. This means that the lack of innovation in an organization may hamper the development and availability of competent human resources in the field of technology, which in turn may affect the overall mastery and utilization of technology.

So it is concluded that ICT mastery will be better if supported by the ownership of quality knowledge. This result supports previous research which states that knowledge has a very significant role in influencing the mastery of information and communication technology (ICT) (Alford & Rosalind Jones., 2020; Hämäläinen et al., 2021; Maravilhas & Martins, 2019; Songkajorn et al., 2022).

2. **Hypothesis Testing**

H2: The better the quality of knowledge possessed, the better the performance of human resources.

In testing hypothesis 2, the original sample estimate value was obtained at 0.278. This value proves that Knowledge has a positive effect on HR Performance, the results of which are also strengthened by the results of the t-test which obtained a calculated t value (2.502) > t table (1.96) and p (0.012) < 0.05, so it can be said that there is a positive and significant influence of Knowledge on HR Performance. Thus, the second hypothesis can be accepted.

The results of the study indicate that knowledge has a positive and significant influence on human resource (HR) performance. Knowledge is measured through indicators such as adaptability, practical application, expansion potential, truth, innovation, and justification, while HR performance is measured using indicators of quality, quantity, timeliness, cost effectiveness, independence, and work commitment.

The data description shows that in the knowledge variable, the indicator with the highest mean value is truth, while in the HR performance variable, the indicator with the highest mean value is work quality. This shows that the more accurate the knowledge a person has, the higher the quality of the work they produce. In other words, correct and precise knowledge can improve the quality of HR work results.

On the other hand, the indicator with the lowest mean value in the knowledge variable is innovation, and in the HR performance variable, the indicator with the lowest mean value is punctuality. This finding indicates that low levels of innovation in knowledge are related to low punctuality in completing work. This means that lack of innovation can hinder time efficiency in completing tasks.

These results indicate that good knowledge of the Main Tasks and Functions has a positive effect on individual and organizational performance. These results support the results of previous studies, namely (Razzaq et al. 2019; Rivaldo and Nabella 2023; Singh 2018)

3. **Hypothesis Testing**

H3: The better the quality of skills possessed, the better the mastery of ICT.

In testing hypothesis 3, the original sample estimate value was obtained at 0.433. This value proves the Quality of Skills (Skill) has a positive influence on Mastery of Information and Communication Technology (ICT), the results of which are also strengthened by the results of the t-test which obtained a calculated t value (4.371) > t table (1.96) and p (0.000) < 0.05, so it can be said that there is a positive and significant influence on Skill Quality (Skill) on Mastery of Information and Communication Technology (ICT). Thus the third hypothesis can be accepted.

The results of this study prove that the quality of skills has a positive influence on the mastery of Information and Communication Technology (ICT). The quality of skills is measured through indicators such as basic literacy skills, technical skills, interpersonal skills, and problem solving, while ICT mastery is indicated by the intensity of technology use, availability of experts, investment in technology, ease of exchanging information, and ease of access for collaboration.

The data description shows that in the skill quality variable, the indicator with the highest mean value is problem solving, while in the ICT mastery variable, the indicator with the highest mean value is ease. This shows that good problem-solving skills can increase the ease of using technology. This means that skills in solving problems effectively can facilitate the process of using and integrating technology in an organization.

On the other hand, the indicator with the lowest mean value in the skill quality variable is technical skills, and in the ICT mastery variable, the indicator with the lowest mean value is the availability of experts. This finding suggests that improving technical skills can increase the availability of experts in the technology field. That is, improving technical skills among the workforce can improve the number and quality of experts available to manage and utilize technology.

So it is concluded that ICT mastery will be better if supported by quality skills. The results of this study support previous research, namely that the quality of skills also affects the ability to adapt to technological changes.(Goulart, Liboni, and Cezarino 2022; Jan O'Sullivan 2015; Marguna 2020; Pratiwi et al. 2020; Royle and Laing 2014; Sousa and Rocha 2019).

4. **Hypothesis Testing**

H4: The better the quality of skills possessed, the better the performance of human resources.

In testing hypothesis 4, the original sample estimate value was obtained at 0.355. This value proves that Skill Quality has a positive effect on HR Performance, the results of which are also strengthened by the results of the t-test which obtained a calculated t value (2.716) > t table (1.96) and p (0.007) < 0.05, so it can be said that there is a positive and significant effect of Skill Quality on HR Performance. Thus, the fourth hypothesis can be accepted.

The results of the study indicate that the quality of skills has a positive influence on the performance of human resources (HR). The quality of skills is measured through indicators such as basic literacy skills, technical skills, interpersonal skills, and problem solving. Meanwhile, HR performance is evaluated by indicators of quality, quantity, timeliness, effectiveness, independence, and work commitment.

The data description reveals that in the skill quality variable, the indicator with the highest mean value is problem solving, while in the HR performance variable, the indicator with the highest mean value is work quality. This shows that good problem-solving skills contribute to improving the quality of work completion. In other words, the more skilled an individual is in dealing with and solving work-related problems, the higher the quality of the work produced.

On the other hand, the indicator with the lowest mean value in the skill quality variable is technical skills, and in the HR performance variable, the indicator with the lowest mean value is punctuality. This finding suggests that although technical skills may not always have a direct impact on punctuality, improving technical skills can improve the ability to complete work on time. That is, strengthening technical skills will improve the efficiency and timeliness of task completion.

So it is concluded that HR performance will be better if supported by quality skills. As research shows(Budi Santoso et al. 2022; Al Mamun, Fazal, and Muniady 2019; Syah Putra et al. 2020; Wihler et al. 2017).

5. **Hypothesis Testing**

H5: The better the mastery of ICT, the better the performance of human resources.

In testing hypothesis 5, the original sample estimate value was obtained at 0.324. This value proves that Mastery of Information and Communication Technology (ICT) has a positive effect on HR Performance, the results of which are also strengthened by the results of the t-test which obtained a calculated t value (2.432) > t table (1.96) and p (0.015) < 0.05, so it can be said that there is a positive and significant influence of Mastery of Information and Communication Technology (ICT) on HR Performance. Thus, the fifth hypothesis can be accepted.

So it is concluded that HR performance will be better if supported by quality ICT mastery. This result supports previous research which states that mastery of Information and Communication Technology (ICT) has a major influence on Human Resources (HR) performance.) (Gërguri-Rashiti et al. 2007; Katz 2021; Ominde, Ochieng, and Omwenga 2021).

The results of the study revealed that mastery of Information and Communication Technology (ICT) has a significant positive impact on human resource (HR) performance. ICT mastery is measured by indicators such as intensity of technology use, availability of experts, investment in technology, ease of exchanging information, and ease of access for collaboration. Meanwhile, HR performance is evaluated based on quality, quantity, timeliness, effectiveness, independence, and work commitment.

The data description shows that in the ICT mastery variable, the indicator with the highest mean value is the ease of exchanging information, while in the HR performance variable, the indicator with the highest mean value is the quality of work. This finding shows that the easier the process of exchanging information, the better the quality of the work produced. In other words, the ease of communication and collaboration driven by ICT mastery can significantly improve the quality of work results.

On the other hand, the indicator with the lowest mean value in the ICT mastery variable is the availability of experts, while in the HR performance variable, the indicator with the lowest mean value is punctuality. This shows that the low availability of experts can affect the timeliness of work completion. This means that to improve timeliness in completing tasks, companies need to ensure that there are enough experts who can support and accelerate the work process.

The overall results of the research hypothesis test can be summarized as follows:

4. Conclusion

Based on the differences in findings in research related to the role of knowledge on performance, the formulation of the problem that arises is "how is the role of Mastery of Information and Communication Technology in the influence of knowledge and skills on HR performance in the Regional Secretariat of West Kotawaringin Regency. The results of this study indicate that the Quality of Knowledge and Skills have an effect on Mastery of Information and Communication Technology (ICT) and have an impact on HR performance.

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