


**THE EFFECT OF INFORMATION TECHNOLOGY UTILIZATION AND EMPLOYEE
COMPETENCE ON EMPLOYEE PERFORMANCE WITH JOB SATISFACTION AS THE
INTERVENING VARIABLE IN THE ACEH IRRIGATION SERVICE**

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 31 March 2023</p> <p>Accepted 28 June 2023</p>	<p>Purpose: This research examines the influence of the use of information technology and employee competence on employee performance, with job satisfaction as an principal adaptable at the Aceh Irrigation Service located in Jl. Ir. H. Mohd Thaher No. 18 Lueng Bata, Banda Aceh.</p>
<p>Keywords:</p> <p>Technology Utilization; Competence; Employee Performance.</p> <div data-bbox="172 958 480 1200" style="text-align: center;">  </div>	<p>Theoretical framework: A hypothesis is a tentative hypothesis that needs to be answered and aims to find information that must be collected and analyzed. This is an interim question or the most likely hypothesis that should still be verified.</p> <p>Design/methodology/approach: The method chosen to analyze the data must be subject to the pattern of investigation and the variables studied. Testing models and hypotheses using structural equation modeling (SEM) from the statistical software package AMOS. In measurement models, researchers determine variables to measure constructs.</p> <p>Findings: The results indicate that Technology utilization and competence affected Employees' job satisfaction at the Aceh Irrigation Service.</p> <p>Research, Practical & Social implications: The systematic process used is the Structural Equation Model (SEM). Technology utilization, competency, and job satisfaction affect the performance of Aceh Irrigation Service employees. In this study, job satisfaction somewhat umpire the relationship among technology utilization and technology and influences the performance of Aceh Irrigation Service employees.</p> <p>Originality/value: The object of this study is civil servants at the Aceh Irrigation Service, and the samples are 138 employees at the Aceh Irrigation Service.</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i7.2564</p>

**O EFEITO DA UTILIZAÇÃO DA TECNOLOGIA DA INFORMAÇÃO E DA COMPETÊNCIA DOS
FUNCIONÁRIOS NO DESEMPENHO DOS FUNCIONÁRIOS, TENDO A SATISFAÇÃO NO
TRABALHO COMO VARIÁVEL INTERVENIENTE NO SERVIÇO DE IRRIGAÇÃO DE ACEH**

RESUMO

Objetivo: Esta pesquisa examina a influência do uso da tecnologia da informação e da competência dos funcionários no desempenho dos funcionários, tendo a satisfação no trabalho como principal variável adaptável

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no Aceh Irrigation Service, localizado em Jl. Ir. Mohd Thaher No. 18 Lueng Bata, Banda Aceh. H. Mohd Thaher No. 18 Lueng Bata, Banda Aceh.

Estrutura teórica: Uma hipótese é uma hipótese provisória que precisa ser respondida e visa encontrar informações que devem ser coletadas e analisadas. Essa é uma pergunta provisória ou a hipótese mais provável que ainda deve ser verificada.

Projeto/metodologia/abordagem: O método escolhido para analisar os dados deve estar sujeito ao padrão de investigação e às variáveis estudadas. Teste de modelos e hipóteses usando a modelagem de equações estruturais (SEM) do pacote de software estatístico AMOS. Nos modelos de medição, os pesquisadores determinam variáveis para medir os construtos.

Conclusões: Os resultados indicam que a utilização da tecnologia e a competência afetaram a satisfação no trabalho dos funcionários do Aceh Irrigation Service.

Implicações sociais, práticas e de pesquisa: O processo sistemático usado é o Modelo de Equação Estrutural (SEM). A utilização da tecnologia, a competência e a satisfação no trabalho afetam o desempenho dos funcionários do Aceh Irrigation Service. Neste estudo, a satisfação com o trabalho de certa forma ajuda a estabelecer a relação entre a utilização da tecnologia e a tecnologia e influencia o desempenho dos funcionários do Aceh Irrigation Service.

Originalidade/valor: O objeto deste estudo são os funcionários públicos do Serviço de Irrigação de Aceh, e as amostras são 138 funcionários do Serviço de Irrigação de Aceh.

Palavras-chave: Utilização de Tecnologia, Competência, Desempenho do Funcionário.

EL EFECTO DEL USO DE LA TECNOLOGÍA DE LA INFORMACIÓN Y LA COMPETENCIA DE LOS EMPLEADOS EN EL RENDIMIENTO DE LOS EMPLEADOS CON LA SATISFACCIÓN LABORAL COMO VARIABLE INTERVINIENTE EN EL SERVICIO DE RIEGO DE ACEH

RESUMEN

Objetivo: Esta investigación examina la influencia del uso de la tecnología de la información y la competencia de los empleados en el rendimiento de los empleados, con la satisfacción laboral como principal variable de adaptación en el Servicio de Riego de Aceh, situado en Jl. Sr. Mohd Thaher nº 18 Lueng Bata, Banda Aceh. H. Mohd Thaher No. 18 Lueng Bata, Banda Aceh.

Marco teórico: Una hipótesis es una pregunta tentativa a la que hay que responder y cuyo objetivo es encontrar información que hay que recopilar y analizar. Se trata de una pregunta tentativa o la hipótesis más probable que aún está por verificar.

Diseño/metodología/enfoque: El método elegido para analizar los datos debe estar sujeto al modelo de investigación y a las variables estudiadas. Comprobación de modelos e hipótesis mediante modelos de ecuaciones estructurales (SEM) del paquete de software estadístico AMOS. En los modelos de medición, los investigadores determinan variables para medir los constructos.

Conclusiones: los resultados indican que el uso de la tecnología y la competencia afectaron a la satisfacción laboral de los empleados del Servicio de Riego de Aceh.

Implicaciones sociales, prácticas y para la investigación: El proceso sistemático utilizado es el Modelo de Ecuaciones Estructurales (SEM). La utilización de la tecnología, la competencia y la satisfacción laboral afectan al rendimiento de los empleados del Servicio de Riego de Aceh. En este estudio, la satisfacción laboral ayuda en cierto modo a establecer la relación entre la utilización de la tecnología y la tecnología e influye en el rendimiento de los empleados del Servicio de Riego de Aceh.

Originalidad/valor: El objeto de este estudio son los funcionarios del Servicio de Riego de Aceh, y las muestras son 138 empleados del Servicio de Riego de Aceh.

Palabras clave: Utilización de la Tecnología, Competencia, Rendimiento de los Empleados.

INTRODUCTION

Employee performance happens as a outcome of the quality and quantity of work done by an worker in the performance of obligations under a given accountability. (Mangkunegara, 2013). Performance improvement is the most significant thing desired by employees and the

organization. Organizations need optimal employee performance to increase work results and corporate profits.

Today, the unstoppable development of technology and information has changed the social life structure of society. It has stimulated the emergence of movements to reform the old governance system that seemed slow, complicated, and not transparent towards a sound, fast, easy, transparent, and progressive governance system based on qualified information technology (Latif, 2021).

The Aceh Irrigation Service is a regional apparatus that implements elements of the Aceh government in water resources management. The Aceh Irrigation Service was formed based on the Aceh Qanun number 13 of 2016. Based on the Regulation of the Governor of Aceh Number 109 of 2016, the Aceh Irrigation Service has to carry out administrative affairs, preparation of annual work programs, medium and long term, preparation of technical policies for managing water resources, carrying out tasks in the field of irrigation, swamps, beaches, rivers, lakes, and reservoirs as well as the operation and maintenance of water resources, the implementation of supervision and control over tasks in water resources management, the implementation of guidance, leadership, and control of functions in water resources management, the implementation of research, assessment, and development of resource networks water supply, implementing coordination with other related agencies or institutions in water resources management, fostering UPTD and implementing coordination with other agencies and institutions in the public works and spatial planning.

Information technology utilization is significantly affected by the human resources (H.R.) owned by the organization. Knowledge and competence possessed by H.R. are necessary for maximizing information technology utilization in an organization. Information technology utilized optimally can facilitate the implementation of tasks by each individual in the organization.

According to the observations of researchers at the Aceh Irrigation Service, one phenomenon still occurring is the uneven distribution of competence according to the field of work, which raises problems in managing functions in each field. Then, there is no overall utilization of technology in each area of work at the Aceh Irrigation Service, so the work has not been realized quickly. Understanding information technology agencies apply is not going well because employees do not have sufficient knowledge and skills.

LITERATURE REVIEW

Performance

According to Donni (2017), Performance is the result produced by the function or activity of a particular task over a given period of time. The result of the work is the result of acquired skills, skills, and aspirations. So, performance is about the job, the results from the job, and what and how to do it. According to Abdullah (2014), Employee performance is one of the benchmarks for determining the success or failure of company goals. Meanwhile, Mangkunegara (2013) said. Employee performance is the quality and quantity of work outcomes attained in tasks under a given responsibility.

Job Satisfaction

According to Sutrisno (2016), Job satisfaction is a pleasant or unpleasant state of mind where employees see their work. Job satisfaction reflects a person's feelings towards his or her work. It appeared in the positive attitude of the employees towards the work and everything in the work environment. Hasibuan & Hasibuan (2016) Job satisfaction is the attitude of happiness and love toward work reflected in work morale, discipline, and performance. Employee perceptions of jobs and positions greatly affect the company.

Technology Utilization

According to Primayana et al., (2014), information technology utilization is a technology used to manage data, process, store, and compile to produce quality, relevant, accurate, and timely information in decision-making (Khdair et. al 2022).

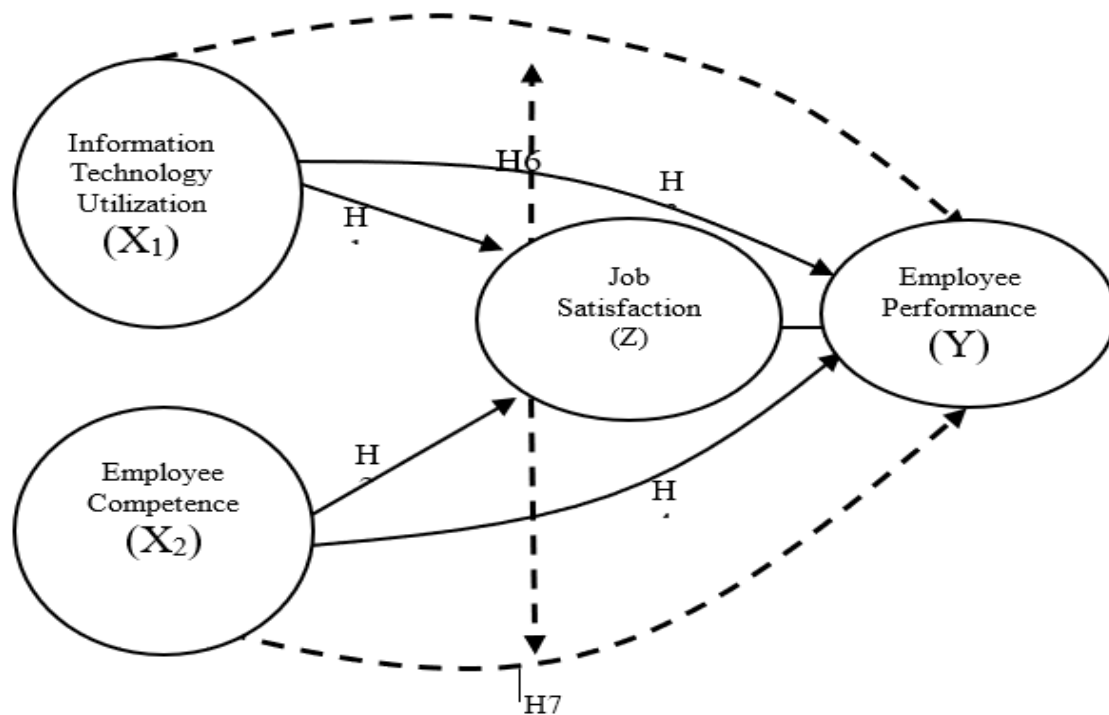
Competence

According to Wibowo (2016), Competence is the ability to perform or perform a task or task based on skills and knowledge supported by the work attitude demanded by the job. Skills have an important role because, in general, efficiency involves a person's essential ability to function. (Moeheriono, 2014).

Conceptual Framework

Based on the following theoretical studies, we convey the conceptual framework as follows:

Figure 1. Conceptual Framework



Source: Prepared By Author (2023)

A hypothesis is a tentative hypothesis that needs to be answered and aims to find information that must be collected and analyzed. This is an interim question or the most likely hypothesis that should still be verified. Based on the above structure and previous research, the hypotheses of this study are as follows:

H1 = Information technology utilization affects job satisfaction at the Aceh Irrigation Service.

H2 = Employee competence influences job satisfaction at the Aceh Irrigation Service.

H3 = Information technology utilization affects employee performance at the Aceh Irrigation Service.

H4 = Employee competence influences employee performance at the Aceh Irrigation Service.

H5 = Job satisfaction affects employee performance at the Aceh Irrigation Service.

H6 = Job satisfaction can mediate information technology utilization on employee performance at the Aceh Irrigation Service.

H7 = Job satisfaction can mediate employee competence on employee performance at the Aceh Irrigation Service.

METHODOLOGY

Location and Object

The survey was conducted at the Aceh Irrigation Service Service located at JL IRH Mohammed Thaher No. 18 Lueng Bata-Banda Aceh, which was aimed at the Aceh Irrigation Service Office and government employees working in UPTD.

Type and Source of Data

This study used preliminary information obtained by distributing questionnaires among prospective respondents. In addition, secondary data were used as supporting data provided by third parties (Aceh irrigation offices, libraries, and online media) in this study.

Population and Sample

Population is a generalization field that consists of objects or subjects based on specific qualities determined by researchers. (Sugiyono, 2013). The population of this study is civilian employees of the Aceh Irrigation Service, totaling 261.

In this study, a proportional layered random sampling technique was used to sample from non-homogeneous populations of employees in a stratified manner in each predetermined case. The number of samples required is 138 ($6 \times 23 = 138$). This is consistent with the size of the research concept indices, where the research indicators are 23.

Methods of Data Analysis

Research requires data analysis and interpretation to answer questions to uncover specific social phenomena. Data analysis is a data simplification process that is easy to read and interpret. The method chosen to analyze the data must be subject to the research pattern and the variables studied. Model and hypothesis testing uses structural equation modeling (SEM) from the AMOS statistics software package. In measurement models, researchers determine variables to measure constructs. In addition, the researchers determined a set of matrices that show perceived correlations between structures or variables. The equation is as follows.

$$\text{Job Satisfaction (KK)} = \beta_1 \text{KP} + \beta_2 \text{PTI} + z_1$$

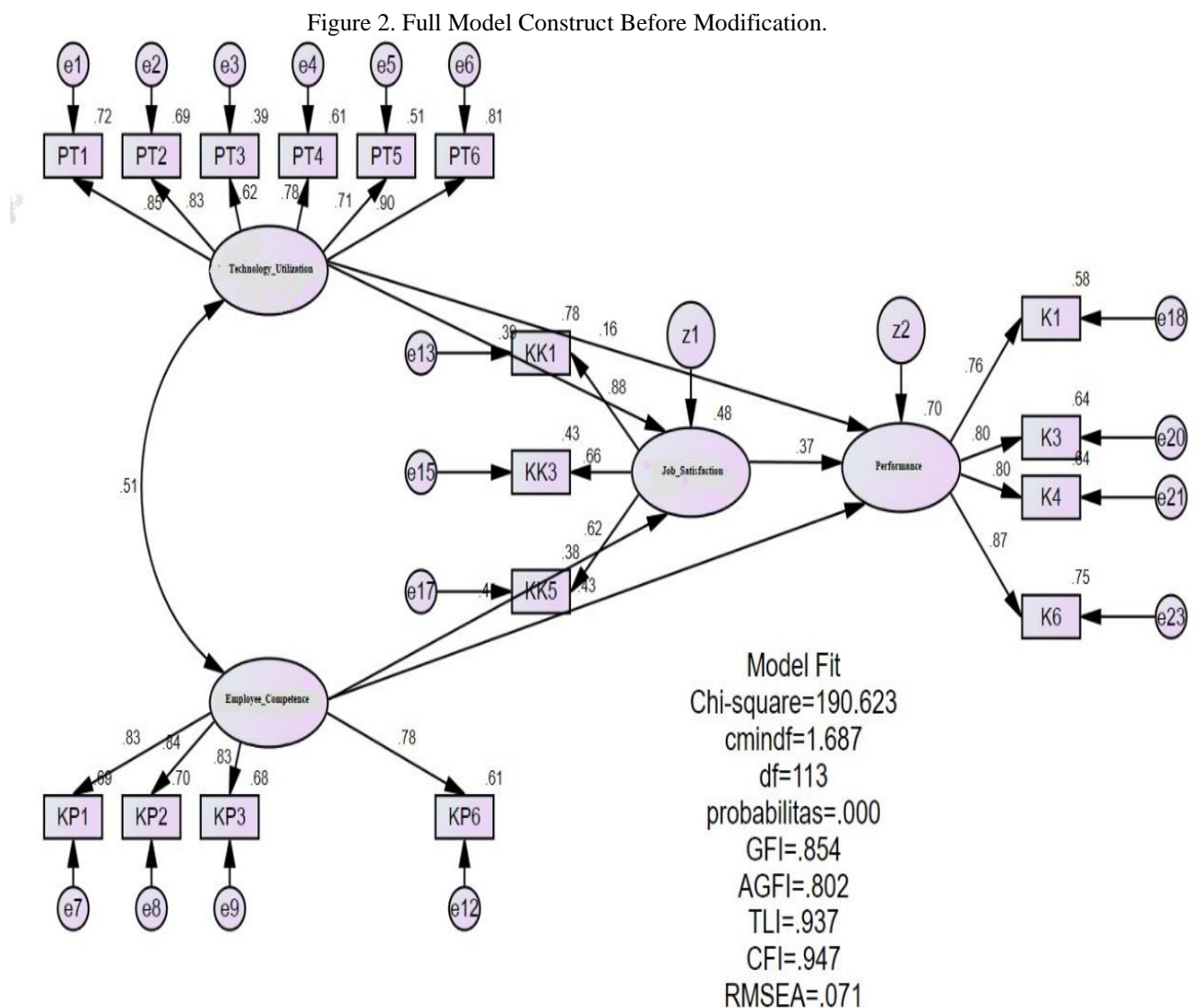
$$\text{Performance (K)} = \beta_1 \text{KP} + \beta_2 \text{PTI} + \beta_3 \text{KK} + z_2$$

RESULTS AND DISCUSSION

Prior to data analysis, data were tested for validation testing/confirmation factor analysis (CFA), construct reliability tests, and SEM estimation tests. This indicates that all data have passed the above test.

Complete Model Tests Before Modification

The goal of the full model SEM test is to see how well the basic model formed in this study meets the fit criteria so that the model can describe the research phenomenon. The full SEM model can be seen in Figure 2 below:



Source: Prepared By Author (2023)

To see the goodness of fit results before model modification, detailed calculation results, and the model evaluation refer to Table 1 below:

Table 1. The Goodness of Fit Index for Full Model Before Modification

The Goodness of Fit Index	Analysis Results	Cut-off Value	Model Evaluation
X ² Chi-Square	190,623	< Df, $\alpha = 5\%$ (138,811)	Marginal
Probability	0,000	$\geq 0,05$	Marginal
GFI	0,854	$\geq 0,90$	Marginal Fit
AGFI	0,802	$\geq 0,90$	Marginal
CFI	0,947	$\geq 0,90$	Fit
	0,937	$\geq 0,95$	Marginal Fit
CMIN/DF	1,687	≤ 2	Fit
RMSEA	0,071	$\leq 0,08$	Fit

Source: prepared by Author (2023)

Based on Table 2 above, the results of the fit index analysis show that there are still marginal values. This needs to be corrected by adding the errors suggested by Covariance to improve the fair quality superiority mentioned in Table 2:

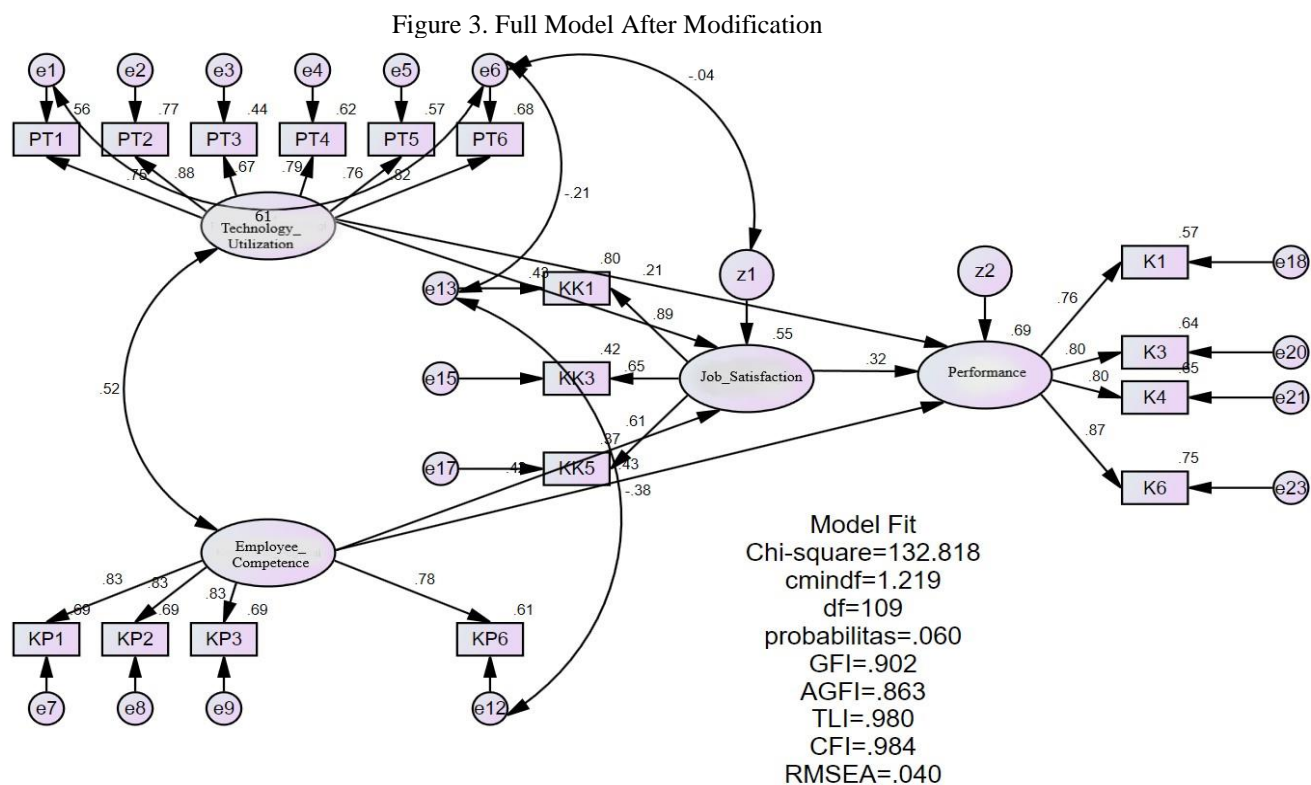
Table 2. Modification Indice.

			M.I.	Par Change
e8	<-->	z2	5.963	.068
e9	<-->	z2	4.690	-.064
e12	<-->	z1	5.072	-.069
e6	<-->	z1	6.060	-.065
e5	<-->	z2	4.273	-.076
e5	<-->	e6	5.522	-.097
e4	<-->	Employee_Competence	4.199	-.094
e3	<-->	e5	5.876	.131
e2	<-->	z2	11.407	.105
e2	<-->	e6	4.807	-.076
e2	<-->	e5	5.860	.114
e2	<-->	e3	5.904	.112
e1	<-->	e6	29.459	.187
e1	<-->	e5	4.622	-.102
e1	<-->	e3	5.974	-.113
e1	<-->	e2	5.338	-.092
e13	<-->	e12	6.113	-.108
e13	<-->	e6	6.160	-.093
e15	<-->	z2	4.042	.082
e17	<-->	e4	4.740	.104
e17	<-->	e13	4.261	.095
e23	<-->	e8	5.403	.077
e20	<-->	e3	5.230	.105

Source: Prepared By Author (2023)

Full Model Test After Modification

To improve fit wellness, the change index needs to be revised by adding the errors suggested by Amos (Ghozali, 2013). Below is an image of the modified complete model of the study as shown in Figure 3 as follows:



Source: Prepared By Author (2023)

The well-being of fit results after model changes, detailed computation results, and model explained in Table 3 as follows.:

Table 3. The goodness of Fit Index for the Full Model After Modification

The Goodness of Fit Index	Analysis Results	Cut-off Value	Model Evaluation
X ² Chi-Square	132,818	< Df, α = 5% (138,811)	Fit
Probability	0,060	≥ 0,05	Fit
GFI	0,902	≥ 0,90	Fit
AGFI	0,863	≥ 0,90	Marginal Fit
CFI	0,984	≥ 0,90	Fit
TLI	0,980	≥ 0,95	Fit
CMIN/DF	1,219	≤ 2	Fit
RMSEA	0,040	≤ 0,08	Fit

Source: Prepared By Author (2023)

The goodness of fit analysis results reveals that after modification to all criteria, the values set are better than before, and the AGFI value is considered suitable, which means that the model is fit enough and decent to use (Talab et. al. 2023).

Direct Effects

The effect of external variables (information technology use and employee efficiency) on intermediate variables (job satisfaction) and endogenous variables (performance) are shown in Table 4:

Table 4. Direct Effect Tests Results

Variables			Estimate	S.E.	C.R.	P
Job_Satisfaction	<--	Information Technology _Utilization	.280	.070	3.998	***
Job_Satisfaction	<--	Employee_Competence	.306	.081	3.797	***
Performance	<--	Information Technology _Utilization	.180	.083	2.177	.029
Performance	<--	Employee_Competence	.408	.100	4.091	***
Performance	<--	Job_Satisfaction	.417	.172	2.427	.015

Source: Prepared By Author (2023)

- a. and reveals that efficiency affects employee performance in Aceh irrigation services. The direct effect of technology use on job satisfaction, an estimated value of 0.280 and a value less than 0.000 or 0.05, indicates a significant effect. Thus, H1 was adopted and it was concluded that the use of information technology affected job satisfaction in Aceh irrigation services.
- b. The direct effect of employee efficiency on job satisfaction, with an estimated value of 0.306 and a significant value less than 0.000 or 0.05, indicates a significant effect. Thus, H2 is adopted and it is concluded that efficiency affects job satisfaction in Aceh irrigation services.
- c. The direct effect of using technology on performance, with an estimated value of 0.180 and a value less than 0.029 or 0.05, indicates a significant effect. Thus, H3 is adopted and reveals that the use of information technology affects the performance of the employee in the Aceh irrigation service.
- d. The direct effect of employee efficiency on employee performance indicates a significant effect, with an estimated value of 0.408 and less than 0.000 or 0.05. Thus, H4 is adopted and stated that efficiency affects the performance of the employee in the Aceh irrigation service.

- e. The direct effect of job satisfaction on employee performance indicates a significant effect, with an estimated value of 0.417 and a significant value of 0.015, or less than 0.05. Thus, H5 is taken
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s. The direct effect of job satisfaction on employee performance indicates a significant effect, with an estimated value of 0.417 and a significant value of 0.015, or less than 0.05. Thus, H5 is taken

Direct, Indirect, and Total Influences

To see mediation effects need first to know the direct, indirect, and total impact. The test results using Amos obtained results as shown in Table 5.

Table 5. Standardized Direct, Indirect & Total Effects

	Technology Utilization	Employee Competence	Job Satisfaction	Employee Performance
Direct Effects				
Job Satisfaction	0.280	0.306	-	-
Employee Performance	0.180	0.408	0.417	-
Indirect Effects				
Job Satisfaction	-	-	-	-
Employee Performance	0.128	0.117	-	-
Total Effects				
Job Satisfaction	0.280	0.306	-	-
Employee Performance	0.297	0.536	0.417	-

Source: Prepared By Author (2023)

Table 5. shows that the estimated direct effect of information technology on job satisfaction is 0.280, and performance is 0.180. Furthermore, the immediate effect of employee efficiency on job satisfaction is 0.306, and performance is 0.408. In addition, the direct effect of job satisfaction on performance is 0.417. This reveals that the estimate of the indirect effect of information technology use on employee performance is 0.128. Furthermore, the indirect effect of employee efficiency on employee performance is 0.117. It shows that the total impact estimate of information technology use on job satisfaction is 0.280, and performance is 0.297. Furthermore, the full effect of employee efficiency on job satisfaction is 0.306, and performance is 0.536. Therefore, the effect of job satisfaction on performance is 0.417.

Mediation Effect Results

The explanation of the relationship between predictor (X), mediator (M) and output (Y) is explained as follows:

Job satisfaction mediates the relationship between information technology utilization and employee performance

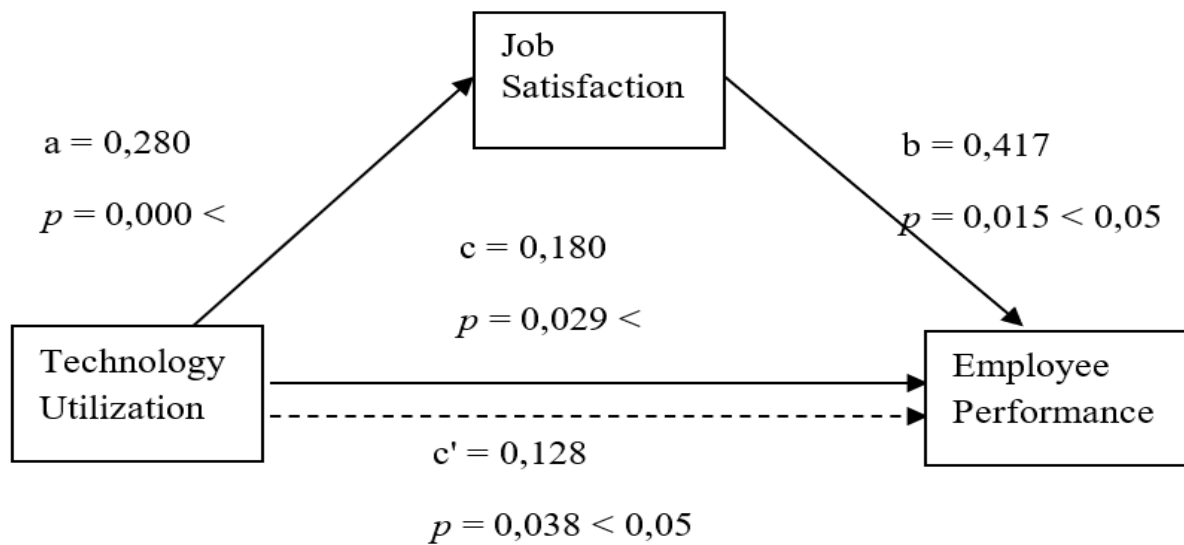
The effect of mediation (intervention) on the relationship between external variables (use of information technology) and endogenous variables (employee performance) is shown in the test results. To find out the significance of path C, it uses the Sobel test an interactive computational tool for mediation testing, which is the Sobel test, Aeroan. Produces experiments and Goodman tests. In this study, the test results used to look at test statistics, standard errors and p-values are the number or value of the Sobel test. Using online, the significance value of path C is in Figure 4:

Figure 4. Sobel Test Results for an Interactive calculation tool for Mediation tests Utilization of information technology – Job satisfaction - Employee performance.

Input:		Test statistic:	Std. Error:	p-value:
a	0.280	Sobel test: 2.07331706	0.05631555	0.03814278
b	0.417	Aroian test: 2.02749792	0.05758822	0.04261152
s _a	0.070	Goodman test: 2.12238992	0.05501345	0.03380501
s _b	0.172	Reset all	Calculate	

Source: Prepared By Author (2023)

Figure 5. Mediation Effect Test Results of Information Technology Utilization - Job Satisfaction - Employee Performance



Source: Prepared By Author (2023)

Information:

- a = Coefficient of information technology utilization effect → Job satisfaction
- b = Coefficient of Job satisfaction effect → Employee performance
- c = Coefficient of information technology utilization → Employee performance
- c' = Coefficient of Indirect Effect of information technology utilization → Job satisfaction → Employee performance
- p = Probability or significant value Based on Figure 4 and the Mediation Criteria (Baron & Kenny, 1986), the path Coefficients (a, b, c, and c') are significant.

It indicates a partial mediation relationship. In other words, it accepts H6, which states that job satisfaction can mediate information technology utilization on employee performance at the Aceh Irrigation Service.

Job satisfaction mediates the relationship between employee competence and employee performance

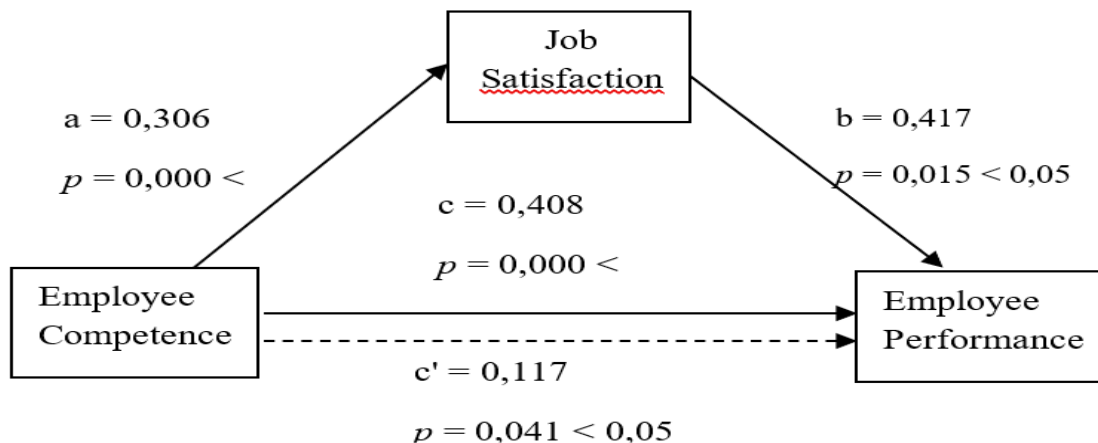
The results of the mediator (intervention) test appear as an illustration of the effect of the relationship between external variables (employee skills) and endogenous variables (employee performance). Use the Sobel test to find out the significance of path C. It is an interactive computational tool for mediation testing that produces the Sobel, Arwan, and Goodman tests. In this study, the test results used to look at test statistics, standard errors, and p-values are the number or value of the Sobel test. Using online, this indicates that the significance value of path C is shown in Figure 6:

Figure 6. Sobel Test Results of an Interactive calculation tool for Mediation tests for Employee Competence- Job Satisfaction - Employee performan

Input:		Test statistic:		Std. Error:	p-value:
a	0.306	Sobel test:	2.04038839	0.06253809	0.04131166
b	0.417	Aroian test:	1.99156682	0.06407116	0.04641861
s _a	0.081	Goodman test:	2.09298594	0.06096649	0.03635041
s _b	0.172	Reset all	Calculate		

Source: Prepared By Author (2023)

Figure 7. Mediation Effect Test Results of Employee Competency - Job Satisfaction - Employee Performance



Source: Prepared By Author (2023)

Information:

- a= Coefficient of Employee Competence effect
- b= Coefficient of 55 Job Satisfaction → Employee Performance
- c= Coefficient of Employee Competence effect → Employee Performance
- c'= Coefficient of Indirect Effect of Employee Competence → Job satisfaction → Employee Performance
- p= Probability or significant value

Based on Figure 7 and the mediation criteria (Baron and Kenny, 1986), the path coefficients (A, B, C, and C') are significant and indicate a partial mediation relationship. In other words, job satisfaction variables may mediate efficiency employees in employee performance in Aceh irrigation services.

CONCLUSIONS

The use of information technology affects the job satisfaction of Aceh irrigation service employees. Thus, it explains that the use of information technology affects job satisfaction. Employee efficiency affects employee job satisfaction in Aceh irrigation services, which means employee skills have a positive impact on job satisfaction. The use of information technology affects the performance of Aceh irrigation service employees, which means that the use of information technology positively affects the performance of the employee. Work efficiency affects the performance of Aceh irrigation service staff. This means that work efficiency has a positive impact on employee performance. Job satisfaction affects the performance of Aceh irrigation service staff. This indicates that job satisfaction has a positive impact on employee performance. Job satisfaction partially mediates the relationship between information technology use and the performance of Aceh irrigation service personnel. Job satisfaction partly mediates the relationship between work efficiency and the performance of Aceh irrigation service employees.

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