THE EFFECT OF EDUCATION LEVEL, WORK PERIOD AND INFORMATION TECHNOLOGY ON SERVICE QUALITY AND JOB SATISFACTION AS AN INTERVENING VARIABLE IN VILLAGE DEVICES ON KUNDUR ISLAND KARIMUN DISTRICT

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Abstract

The purpose of this study was to determine and analyze the effect of education level, years of service and information technology on service quality and job satisfaction as an intervening variable for village officials on Kundur Island, Karimun Regency. The method used was a questionnaire and distributed to 122 respondents. Statistical data analysis using SEM PLS (structural equation modelling) and using path analysis to examine the pattern of the relationship between the influence of the dependent and independent variables, both direct and indirect effects with smart pls 3.0 software. The research results showed education level has a direct effect on job satisfaction with a p-value of 0.000, tenure has an indirect effect on job satisfaction with a p-value of 0.000, job satisfaction has a direct effect on service quality with a p-value of 0.000, tenure has a direct effect on job satisfaction with a p-value of 0.000, job satisfaction has a direct effect on service quality with a p-value of 0.000, information technology has a direct effect on service quality with a p-value of 0.000, job satisfaction mediates the relationship between education level and service quality with a p-value of 0.000, job satisfaction mediates the relationship between tenure and service quality with a p-value of 0.000, and job satisfaction mediates the relationship between information technology and service quality with a p-value of 0.000.

Keywords: Level of education, years of service, information technology, quality of service, and job satisfaction.

1. INTRODUCTION

Public service is a series of activities in the context of fulfilling service needs in accordance with statutory regulations for every citizen and resident for goods, services and/or administrative services provided by public service providers. All citizens and residents hope to get good service by every public service that exists in every agency or unit that plays a role in providing these services.

Service quality is a form of consumer assessment of the level of service received and the level of service expected. If the service received or perceived is as expected, then the quality of service is perceived as good and satisfactory. Factors that can affect service quality include level of education, years of service, information technology and job satisfaction.

Quality human resources with high education affect job satisfaction. With education, an employee is able to complete the assigned tasks. Higher education determines the placement of the right person in the right place. The level of education is the stage of education that is determined based on the level of development of students, the goals achieved, and the abilities developed. Education in Indonesia recognizes three levels of education, namely basic education, secondary education, and higher education.

In education there is a continuous process that goes on and not just for a moment. However, education can also be referred to as an effort to increase one's general knowledge,
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including mastery of theory to decide issues related to activities to achieve organizational goals. It has become a habit; many employees are motivated to continue their education to a higher level by expecting a promotion to get a salary or greater incentives.

Tenure is also the most important component in explaining employee job satisfaction. Employee job satisfaction in an organization is a support for the success of HR management. The working period is the result of absorption from various human activities, so as to be able to grow skills that appear automatically in the actions taken by employees in completing work. The longer employees work at the agency, the higher their desire to continue to increase job satisfaction.

Working time according Nitisemito (2014) is the length of time an employee contributes his energy to a particular organization.

2. FORMULATION OF THE PROBLEM
1. How does the level of education directly affect the job satisfaction of village officials on Kundur Island.
2. How does the tenure directly affect the job satisfaction of village officials on Kundur Island.
3. How information technology has a direct effect on job satisfaction of village officials on Kundur Island.
4. How job satisfaction directly affects the quality of service to village officials on Kundur Island.
5. How does the level of education directly affect the quality of service to village officials on Kundur Island.
6. How does the period of service directly affect the quality of service to village officials on Kundur Island.
7. How does information technology directly affect the quality of service to village officials on Kundur Island.
8. How does the level of education indirectly affect the quality of service through job satisfaction of village officials on Kundur Island.
9. How does tenure indirectly affect service quality through job satisfaction to village officials on Kundur Island.
10. How information technology has an indirect effect on service quality through job satisfaction for village officials on Kundur Island.

3. RESEARCH METHOD
This study measures the results of field studies with the distribution of respondents based on 5 variables namely: level of education, years of service, information technology, quality of service, and job satisfaction. Data analysis using PLS Smart 3.0 aims to prove the results of research with 2 models, namely the outer model consisting of convergent validity and discriminant validity, and the inner model consisting of a determinant test with R square, and the path coefficient test, namely the results of direct and indirect influence tests.

4. RESULTS AND DISCUSSION
4.1. Outer Model
Convergent Validity

Table 1. Average Variance Extracted (AVE)

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Rata-rata Varians Dikstrak (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kepuasan Kerja (Z)</td>
<td>0.505</td>
</tr>
<tr>
<td>Kualitas pelajaran (Y)</td>
<td>0.562</td>
</tr>
<tr>
<td>Masa kerja (X2)</td>
<td>0.508</td>
</tr>
<tr>
<td>Teknologi Informasi (X3)</td>
<td>0.566</td>
</tr>
<tr>
<td>Tingkat Pendidikan (X1)</td>
<td>0.569</td>
</tr>
</tbody>
</table>
In this study there were 5 variables with a number of indicators between 55 with a scale of 1 to 5. Based on the results of testing the measurement model shown in Figure 4.1 and Table 4.5, and Table 4.6 it can be explained as follows:

1) Educational Level construct, the indicator has a loading factor above 0.5, and AVE 0.569.
2) The construct of working period, the indicator has a loading factor above 0.5, and AVE 0.508.
3) In the Information Technology construct, indicators have a loading factor above 0.5, and AVE 0.566.
4) The Job Satisfaction Construct, the indicator has a loading factor above 0.5, and AVE 0.505.
5) The service quality construct has a loading factor above 0.5 and AVE 0.562.

Based on the results of the factor loading above, it can be concluded that the construct has good convergent validity.

4.2. Discriminate Validity

Discriminant validity is the level of differentiation of an indicator in measuring the construct of the instrument. To test discriminant validity can be done with composite reliability, Cronbach alpha and coloniality.

Composite Reliability is the part that is used to test the value of the reliability of indicators on a variable. A variable can be declared to meet composite reliability if it has a composite reliability value of > 0.7. The following is the composite reliability value of each variable used in this study:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kepuasan Kerja (Z)</td>
<td>0.917</td>
</tr>
<tr>
<td>Kualitas pelayanan (Y)</td>
<td>0.856</td>
</tr>
<tr>
<td>Masa kerja (X2)</td>
<td>0.917</td>
</tr>
<tr>
<td>Teknologi Informasi (X3)</td>
<td>0.935</td>
</tr>
<tr>
<td>Tingkat Pendidikan (X1)</td>
<td>0.935</td>
</tr>
</tbody>
</table>

After testing the construct validity, the next test is the construct reliability test as measured by the composite reliability of the indicator block that measures the composite reliability construct used to display good reliability. A construct is declared reliable if the composite reliability value is > 0.6. According to Hair et al. (2014) the coefficient of composite reliability must be greater than 0.7 even though a value of 0.6 is still acceptable. However, the internal consistency test is not absolutely necessary if construct validity has been met, because a valid construct is a reliable one, otherwise a reliable construct is not necessarily valid (Cooper and Schindler, 2014).

The reliability test with the composite reliability above can be strengthened by using the Cronbach alpha value. A variable can be declared reliable or meets cronbach alpha if it has a cronbach alpha value > 0.7. The following is the Cronbach alpha value of each variable:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kepuasan Kerja (Z)</td>
<td>0.901</td>
</tr>
<tr>
<td>Kualitas pelayanan (Y)</td>
<td>0.847</td>
</tr>
<tr>
<td>Masa kerja (X2)</td>
<td>0.900</td>
</tr>
<tr>
<td>Teknologi Informasi (X3)</td>
<td>0.923</td>
</tr>
<tr>
<td>Tingkat Pendidikan (X1)</td>
<td>0.923</td>
</tr>
</tbody>
</table>

Based on the above data in table 4.8, it can be seen that the Cronbach alpha value of each research variable is > 0.7. Thus these results can indicate that each research variable has met the requirements for the Cronbach alpha value, so it can be concluded that all variables have a high level of reliability.

The collinearity test is to prove whether the correlation between latent/construct variables is strong or not. The value used to analyze it is by looking at the Variance Inflation Factor (VIF) value (Hair, et. al 2014; Garson, 2016). If the VIF value > 5.00, it means that there is a collinearity problem, and conversely there is no collinearity problem if the VIF value is < 5.00.
Table 4. Colonierity

<table>
<thead>
<tr>
<th></th>
<th>Z</th>
<th>Y</th>
<th>X2</th>
<th>X3</th>
<th>X1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kepuasan Kerja (Z)</td>
<td></td>
<td></td>
<td>4.550</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kualitas pelayanan (Y)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masa kerja (X2)</td>
<td>3.536</td>
<td>3.546</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teknologi Informasi (X3)</td>
<td>3.755</td>
<td>4.640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tingkat Pendidikan (X1)</td>
<td>1.952</td>
<td>2.261</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the above data in table 4.9, it can be seen that the Colonierity value of each research variable is <0.5. Thus, these results can indicate that there is no collinearity problem, each research variable has met the requirements for the collinearity value.

4.3. Inner Model

The structural model in PLS is evaluated using $R^2$ for the dependent variable and the path coefficient value for the independent variable which is then assessed for its significance based on the $t$-statistic value of each path. The structural model of this research can be seen in the following figure:

![Image 1: Inner view of the model, 2022](image)

1. **$R^2$ Square**

Based on the data processing that has been done using the smartPLS 3.0 program, the $R$-Square value is obtained as follows:

Table 5. $R^2$ value

<table>
<thead>
<tr>
<th></th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kepuasan Kerja (Z)</td>
<td>0.780</td>
<td>0.775</td>
</tr>
<tr>
<td>Kualitas pelayanan (Y)</td>
<td>0.694</td>
<td>0.684</td>
</tr>
</tbody>
</table>

Based on the data in table 4.10 above, it can be seen that the $R$-Square value for the job satisfaction variable is 0.312. The acquisition of this value explains that the percentage of Job Satisfaction can be explained by the level of education, years of service and information technology of 31.2%. Then for the $R$-Square value obtained by the service quality variable of 0.616. This value explains that service quality can be explained by job satisfaction of 61.6%.

2. **Path Coefficient**

To assess the significance of the prediction model in testing the structural model, it can be seen from the $t$-statistic value between the independent variables and the dependent variable in the path coefficient table at the SmartPLS output below:
Table 6. Direct Influence

<table>
<thead>
<tr>
<th>Source Variable</th>
<th>Target Variable</th>
<th>Sampling Mean (O)</th>
<th>T Statistik (I O/STDEV I)</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kepuasan Kerja (Z)</td>
<td>Kualitas pelayanan (Y)</td>
<td>0.158</td>
<td>0.009</td>
<td>0.001</td>
</tr>
<tr>
<td>Masa kerja (X2)</td>
<td>Kepuasan Kerja (Z)</td>
<td>0.047</td>
<td>0.443</td>
<td>0.658</td>
</tr>
<tr>
<td>Masa kerja (X2)</td>
<td>Kualitas pelayanan (Y)</td>
<td>0.031</td>
<td>2.216</td>
<td>0.009</td>
</tr>
<tr>
<td>Teknologi Informasi (X3)</td>
<td>Kepuasan Kerja (Z)</td>
<td>0.645</td>
<td>6.292</td>
<td>0.000</td>
</tr>
<tr>
<td>Teknologi Informasi (X3)</td>
<td>Kualitas pelayanan (Y)</td>
<td>0.433</td>
<td>2.382</td>
<td>0.018</td>
</tr>
<tr>
<td>Tingkat Pendidikan (X1)</td>
<td>Kepuasan Kerja (Z)</td>
<td>0.260</td>
<td>3.635</td>
<td>0.000</td>
</tr>
<tr>
<td>Tingkat Pendidikan (X1)</td>
<td>Kualitas pelayanan (Y)</td>
<td>0.244</td>
<td>2.678</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Based on table 4.11 above, the relationship between study variables can be explained as follows:
1. The effect value of variable X1 on Z is 3.635 with a p-value of 0.000 (<0.05). Thus, H1 is accepted, namely the level of education has a direct effect on job satisfaction.
2. The effect value of variable X2 on Z is 0.443 with a p-value of 0.658 (> 0.05). Thus, H2 is rejected, i.e., working period does not have a direct effect on job satisfaction.
3. The effect value of variable X3 on Z is 6.292 with a p-value of 0.000 (<0.05). Thus, H3 is accepted, namely information technology has a direct effect on job satisfaction.
4. The value of the effect of variable Z on Y is 5.099 with a p-value of 0.001 (<0.05). Thus, H4 is accepted, namely job satisfaction has a direct effect on service quality.
5. The effect value of variable X1 on Y is 2.678 with a p-value of 0.008 (<0.05). Thus, H5 is accepted, namely the level of education has a direct effect on service quality.
6. The effect value of variable X2 on Y is 2.216 with a p-value of 0.009 (<0.05). Thus, H6 is accepted, namely work period has a direct effect on service quality.
7. The effect value of variable X3 on Y is 2.382 with a p-value of 0.018 (<0.05). Thus, H7 is accepted, namely information technology has a direct effect on service quality.

Table 7. Indirect Influence

<table>
<thead>
<tr>
<th>Source Variable</th>
<th>Target Variable</th>
<th>Sampling Mean (O)</th>
<th>T Statistik (I O/STDEV I)</th>
<th>P Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1°Z</td>
<td>Kualitas pelayanan (Y)</td>
<td>0.166</td>
<td>2.688</td>
<td>0.009</td>
</tr>
<tr>
<td>X2°Z</td>
<td>Kualitas pelayanan (Y)</td>
<td>0.056</td>
<td>2.388</td>
<td>0.006</td>
</tr>
<tr>
<td>X3°Z</td>
<td>Kualitas pelayanan (Y)</td>
<td>0.066</td>
<td>2.467</td>
<td>0.004</td>
</tr>
</tbody>
</table>

Based on the table above, the indirect influence relationship is described as follows.
1. The effect value of variable X1 on Y through Z is 2.688 with a p-value of 0.009 (<0.05). Thus, H8 is accepted, namely the variable Job satisfaction significantly mediates the relationship between the level of education on the quality of service. The type of mediation produced is full mediation or full mediation, because the existence of a mediator makes the value of the indirect effect (2.688) greater than the direct effect (2.678).
2. The effect value of variable X2 on Y through Z is 2.388 with a p-value of 0.006 (<0.05). Thus, H9 is accepted, namely the variable Job satisfaction significantly mediates the relationship between work experience and service quality. The type of mediation produced is full mediation or full mediation, because the existence of a mediator makes the value of the indirect effect (2.388) greater than the direct effect (2.216).
3. The effect value of variable X3 on Y through Z is 2.467 with a p-value of 0.004 (<0.05). Thus, H10 is accepted, namely the variable Job satisfaction significantly mediates the relationship between information technology and service quality. The type of mediation produced is full mediation or full mediation, because the existence of a mediator makes the value of the indirect effect (2.467) greater than the direct effect (2.382).
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5. CONCLUSIONS AND SUGGESTIONS
5.1. CONCLUSION
1. H1 is accepted, it is proven that the effect value of variable X1 on Z is 3.635 with a p-value of 0.000 (<0.05). Thus, the level of education has a direct effect on job satisfaction.
2. H2 is accepted, it is proven that the effect value of variable X2 on Z is 0.443 with a p-value of 0.658 (<0.05). Thus, the length of service does not have a direct effect on job satisfaction.
3. H3 is accepted, it is proven that the effect value of variable X3 on Z is 6,292 with a p-value of 0.000 (<0.05). Thus, information technology has a direct effect on job satisfaction.
4. H4 is accepted, it is proven that the influence value of variable Z on Y is 5,099 with a p-value of 0.01 (<0.05). Thus, job satisfaction has a direct effect on service quality.
5. H5 is accepted, it is proven that the effect value of variable X1 on Y is 2,678 with a p-value of 0.008 (<0.05). Thus, the level of education has a direct effect on service quality.
6. H6 is accepted, it is proven that the effect value of variable X2 on Y is 2,216 with a p-value of 0.009 (<0.05). Thus, the length of service directly affects the quality of service.
7. H7 is accepted, it is proven that the effect value of variable X3 on Y is 2,382 with a p-value of 0.018 (<0.05). Thus, information technology has a direct effect on service quality.
8. H8 is accepted, it is proven that the effect value of variable X1 on Y through Z is 2,688 with a p-value of 0.009 (<0.05). Thus, job satisfaction significantly mediates the relationship between education level and service quality.
9. H9 is accepted, it is proven that the effect value of variable X2 on Y through Z is 2,388 with a p-value of 0.006 (<0.05). Thus, job satisfaction significantly mediates the relationship between tenure and service quality.
10. H10 is accepted, it is proven that the effect value of variable X3 on Y through Z is 2,467 with a p-value of 0.004 (<0.05). Thus, job satisfaction significantly mediates the relationship between information technology and service quality.

5.2. SUGGESTIONS
Related to the research results, the following suggestions can be submitted:
1) To improve service quality, indicators of responsiveness and responsiveness need to be improved, so that service quality becomes better.
2) To increase job satisfaction, it is necessary to improve a supportive work environment and superiors who can guide and set an example and have a sense of pride in the work being done.
3) To improve education, it is necessary to carry out educational programs to improve skills so that the quality of service becomes better.
4) The working period has shown good results, but it is necessary to increase the indicators of knowledge and work skills, bearing in mind that technological progress is part of the job. needs to be maintained for employees who already have current jobs, because the experience of these employees can be exemplified for employees who have a short tenure.
5) Information technology must be considered and needs to be increased in indicators of suitability for tasks and long-term consequences. This is related to the length of service of employees so that they have a better understanding of the implementation and work related to technology.
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