

Design and Build a Population Administration Data Collection Application System Using the Zachman Framework

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Abstract—The purpose of this study is to determine how the application of the Zachman Framework in designing a population administration data collection system in Kadaleman village, because the current process is still carried out conventionally so that data storage is irregular. In analyzing the system using the Zachman Framework approach with a Planner, Owner, Designer, and Builder perspective and perspective issues, namely What, How, Where, Who, and When. For system modeling using UML. Data was collected by using observation, interview, literature study, and distributing questionnaires involving 35 respondents. Measurement of data using a Likert scale, with correlation test analysis using Spearman rho. The implementation of a web-based prototype system with the results of the usability value test on the system application shows that the system has met the aspects of learnability, efficiency, memorability, errors, and satisfaction. The results of the correlation analysis of the Zachman Framework model on the system built have a very strong correlation, which implies that the system built through the Zachman Framework approach can be realized and implemented.

Keywords— population, administration, spearman rho, zachman framework

INTRODUCTION

Documents The current progress of communication and information technology demands that the work system be more effective, efficient and accountable both in the business world and in government [1]. The need for information in a complex work system encourages an agency to take various ways in providing a service, including services in the use of population information in Village Government agencies that can help the performance of the village government to be better. Through the use of information technology, the village government must be able to provide fluency in providing services and information to the community [2] - [4]. Looking at the times, of course, in terms of service to the community, one must follow technological developments [5], which has now entered the era of globalization. One of the government activities in terms of population administration data collection includes recording a form of incidence of birth, death, moving and coming. Because the village is given the authority to regulate and manage the interests of the local community for welfare or social services [6], [7]. Seeing the above problems, the researcher provides a solution, namely by designing a village population administration data collection application system using the Zachman Framework approach, while this approach is taken because it is able to present an analysis based on various stakeholder perspectives [9], especially village officials as the object of the study. This study is compiled based on references that have related research methods and objects, including [10] - [13], where the research has the same topic and output platform, but has different application development methods, namely the waterfall model and object oriented analyst. The next research is [14], with the same topic but for an android-based platform. Subsequent research is [15] - [19] which generally have the same output platform, topic, and method used, but the difference is in the perspective review, process, and object data taken. With this village population administration data collection application system, it is hoped that the performance of village officials will be more effective, efficient, and accountable.

METHODOLOGY

In this study, the method used to analyze the system design is using the Zachman Framework [20] - [22], where the elements of the perspective issue that will be described in each column consist of what, how, where, who, and when. Meanwhile, the first dimension is based on the perspective of the Scope, Business Model, System Model and Technology Model.

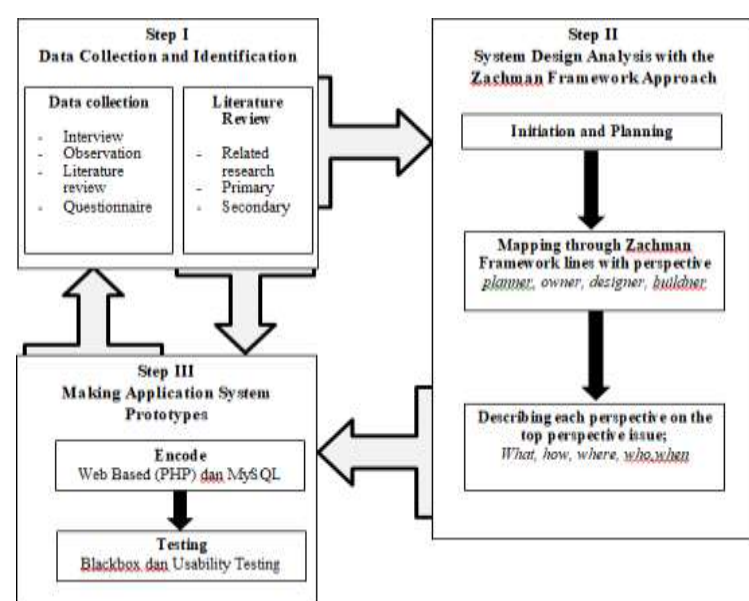


Fig 1. Research Stages

Details of data collection include : Observation, carried out by directly reviewing the ongoing population administration data collection process. Interview, conducted by asking questions to the Village Secretary who fully understands the activities related to the ongoing population administration data collection process in the village. Questionnaires, carried out by distributing a set or list of questions that have been made, which must be filled in or answered [23], [24], by village officials as respondents. The calculation of the score of each respondent uses a Likert scale, namely the answer is given a score of 1 (one) which is equal to

strongly disagree up to 5 (five) which means strongly agree [25] -[27]. Literature study, conducted to examine the theories underlying the research [28], in order to find the right solution for processing and analyzing data so that it can be translated into a two-dimensional matrix of the Zachman Framework. The literature study was conducted by studying various books, journals related to enterprise architecture with the Zachman Framework. In addition, literature studies are also carried out by studying documents related to the population administration data collection process. The analysis model and system design used in this study are Unified Modeling Language (UML) [29], [30], including use case diagrams, activity diagrams, sequence diagrams, and class diagrams.

CONCLUSION

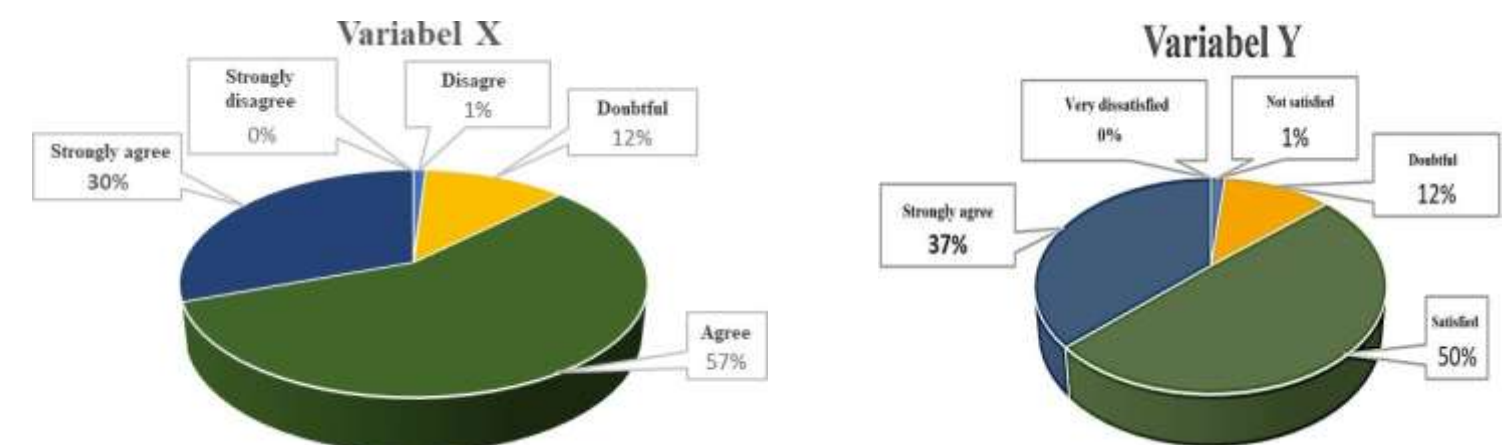
Based on the research that has been done, the results of the correlation analysis of the Zachman Framework model on the design of the village population administration data collection application system have a very strong correlation, so that its implementation will have positive implications. And from the results of the Usability test on the system that has been built, it shows that the system has met the very good aspects of learnability, efficiency, memory, errors, satisfaction.

RESULTS AND DISCUSSION

Based on the results of data collection that has been collected using observations, interviews and questionnaires, then the problem mapping process is carried out into the Zachman Framework and Designer Perspective At this stage, system modeling is carried out based on the designer's perspective to visually determine the specifications, construction, and documentation of system artifacts. The system modeling uses UML which consists of use case diagrams, activity diagrams, sequence diagrams and class diagrams.

IMPLEMENTATION

Evaluation of the System Questionnaire Test Results with the Zachman Framework the author conducts a closed questionnaire method, from the questionnaire filled in by the respondent where the X variable is the application of the Zachman Framework and the Y variable is the Village Population Administration Data Collection, then it is processed in the SPSS application version 25 and a frequency test is carried out on the respondent's answer. The following is the variable X questionnaire indicator which is described in tables 1 and 2 below.



Analysis of the Correlation Results of the X and Y Relationships

Correlations				
			<i>Zachman Framework</i>	Village Population Administration Data Collection
<u>Spearman's rho</u>	<i>Zachman Framework</i>	Correlation Coefficient	1,000	,729"
		Sig. (2-tailed)		,000
		N	20	20
	Village Population Administration Data Collection	Correlations Coefficient	,729"	1,000
		Sig. (2-tailed)	,000	
		N	20	20
**. Correlations is significant at the 0.01 level (2-tailed)				

Based on the table above, the results of the Spearman's rho test analysis as in table 10 above can be seen the correlation value between the Zachman Framework (Variable X) which is implemented in the Village Population Administration Data Collection System (Variable Y) obtained a correlation coefficient of 0.729, this value is at a value of +/- 0,76 - 0,99 which means that the correlation is very strong, the correlation coefficient is positive = 0.729 so that the variable relationship is unidirectional.

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