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Quality Measurement of Accurate-5 Accounting Software Using the Iso 9126 Model (Study on Accurate Workshop for D3 Computerized Accounting STMIK Mardira Students)

Hasanah T. Amijaya[1], Ramlan[2], Ganjar N. Fajar[3]
Program Studi Komputerisasi Akuntansi STMIK Mardira Indonesia Bandung[1,2,3]
e-mail: hastie@stmik-mi.ac.id[1], ramlan@stmik-mi.ac.id[2], ganjar@stmik-mi.ac.id[3]

Abstract

This study aims to evaluate the degree of excellence of the Accurate-5 accounting software by employing the ISO-9126 model, which assesses six dimensions (primary characteristics) and associated attributes (secondary characteristics) of software quality. The researchers measured a sample of 41 participants who attended a workshop at STMIK Mardira Indonesia Bandung using the Accurate-5 software. The researchers gathered primary data using a questionnaire that utilized the Likert scale. The validity test results supported the validity of the items, as a value greater than 0.316 was found. The reliability test results demonstrated that all attributes have a high level of reliability, as each item had a Cronbach's alpha value greater than 0.7.

The software quality evaluation findings utilizing the ISO 9126 standard indicate that all dimensions and attributes satisfy the "Good" criteria. The researchers found that the attributes of Compliance, Installability, and Coexistence satisfy the criteria of "Very Good." Based on the data, we can infer that the Accurate-5 software complies with the ISO 9126 standard as it achieved an average percentage score of 77.53%, indicating that it meets the "Good" criteria.

Keywords : *information systems, auditor competence, audit quality*

INTRODUCTION

The swift advancement of software within the realm of technology and information systems has significantly altered the administration of an enterprise (Rapina et al., 2020). Software constitutes a fundamental component of information systems. Narimawati et al. (2021) state that high-quality software fulfills requirements and expectations while providing significant.

There exist various fundamental aspects of software quality, specifically: According to Mustafa (2017) and Wang et al. (2019), the degree to which the software product satisfies the needs and expectations of customers or users is the satisfaction level.

Product value pertains to the degree to which a software product is deemed valuable by different stakeholders concerning the competitive landscape, as posited by Mohd Ali et al. (2020) and Tripathi et al. (2019).

According to Aheleroff et al. (2021) and Caputo et al. (2019), the critical attributes of a software product are the degree to which it possesses the desired combination of properties, including but not limited to reliability, portability, and maintainability.

According to Li et al. (2020) and Qiao et al. (2020), flaws in software products can result in operational flaws that impair their functionality in the intended environment.

The concept of process quality pertains to the development process of the final product. It

involves the notion that individuals who possess desirable qualities engage in effective practices (de Souza Cardoso et al., 2020; Qin et al., 2022).

In order to measure the quality of the equipment, standardized and enforced measuring tools are needed, namely ISO 9126. (DARJAN et al., 2019)

LITERARUR REVIEW

The topic of discussion pertains to software and the process of software development.

As per the IEEE standard, software refers to a set of instructions, protocols, records, and information pertaining to a computer system's functioning.

Software development, also known as software engineering, involves the systematic, disciplined, and measurable application of approaches to software development, operation, and maintenance. This condition includes the study and application of engineering principles to software.

The ISO/IEC 9126 model is a framework used to evaluate software quality.

The ISO/IEC 9126 model, introduced in 1991 and published in 2001 in Geneva, Switzerland, is among the software quality measurement models. The ISO/IEC 9126 model endeavors to mitigate certain cognitive biases that may arise during software development due to an ambiguous delineation of the project's software development goals.

The Accurate-5 Accounting Application

Accurate-5 accounting software is a dedicated accounting application that PT developed. Cipta Piranti Sejahtera (CPSoft) in version 5 was released in late 2015. This software has the potential to be utilized by a multitude of small and medium-sized enterprises.

According to Erawati et al. (2018) and Tajima & Sencer (2019), Accurate-5 accounting software possesses several benefits, including its high level of precision, user-friendly interface, ability to handle multiple currencies, and bilingual support for both English and Indonesian languages. These features have generated considerable interest among users.

METHOD

Variable operationalization

The process of Variable Operationalization involves the deconstruction of research variables into sub-variables or dimensions, as well as the identification of measurement attributes. The ISO/IEC 9126 Software Quality Model was employed as the variable in the present investigation.

This paper discusses the various dimensions and attributes of the ISO/IEC 9126 Software Quality Model.

The present software quality model exhibits distinct sub-variables or dimensions that are its primary characteristics.

Functionality

The capacity of software to offer functionalities that fulfill both explicit and implicit user requirements within specific usage contexts, i.e., the software's ability to address user needs.

Reliability

Software products' capacity to sustain their performance level within predetermined parameters for a specific duration

Usability

The usability of software products refers to their capacity to be comprehended, acquired, utilized, and aesthetically pleasing within specific usage contexts, as well as the level of effort required for their use.

Efficiency

This refers to the capacity of software products to deliver the intended level of performance concerning the resources consumed, subject to specific circumstances.

Maintainability

Software products can be altered, encompassing the rectification, restoration, or customization of software in response to changes in the environment and functional prerequisites and specifications. This modification process entails a certain degree of effort.

Portability

The portability of software products across different environments and components that interact with each other to support the execution of computer programs.

Functionality Dimension	
Attribute	Explanation
Suitability	Software has the ability to provide a set of functions suitable for specific tasks and user goals
Accuracy	The software is able to provide precise, accurate results that really suit your needs
Security	The software is capable of preventing unwanted access, facing hackers and authorizing data modifications.
Interoperability	Software is capable of interacting with one or more specific systems
Compliance	The software is able to meet the standards and requirements according to applicable regulations
Reliability Dimension	
Maturity	The software is capable of avoiding failures as a result of software errors
Fault tolerance	The software is able to maintain its performance in the event of a software error
Recoverability	The software is capable of rebuilding performance levels when system failures occur including data and network connections
Usability Dimension	
Understandibility	Easy software to understand
Learnability	Easy software to learn
Operability	Easy software to operate
Atrtactiveness	Software is able to attract users
Efficiency Dimension	
Time Behaviour	The software is able to provide the appropriate response and processing time when performing its functions
Resource Utilization	Software is able to use the resources it has when performing the specified function
Maintainability Dimension	

Adaptabil lityy	The device is able to analyze deficiencies or causes of failure
Changeab ility	The device is capable of certain modifications
Stability	The device is capable of minimizing unexpected effects of software modifications
Testability	The device is capable of being modified and validated by other software
Portability Dimension	
Adaptabil ity	The device is able to adapt to different environments
Instability	The device is easy to install in different environments
Conforma nce	The device is capable of coexisting with other software with various resources
Replacea bility	The device can be used as a substitute for other software

The concepts of population and sample are fundamental in statistical analysis. Population refers to the entire group of individuals or objects with common characteristics.

The present study pertains to the population and sample of participants who attended the Accurate-5 accounting software workshop at STMIK Mardira Indonesia Bandung, comprising 41 individuals.

Software quality assessment is based on a set of characteristics known as software quality dimensions. Software quality can be assessed based on six dimensions: functionality, reliability, usability, efficiency, maintainability, and portability. The software's quality is contingent upon meeting distinct characteristics across various dimensions.

The dimension of functionality evaluates the software's ability to execute its intended operations effectively. This dimension has characteristics of precision, sufficiency, security, and appropriateness. Accuracy indicates how correctly the software performs its intended task. Adequacy denotes the degree to which the software can fulfill the user's needs and expectations. Security relates to how well the software system can protect itself against external attacks. Conformity refers to how well the software can meet the needs and expectations of its users.

The dimension of reliability pertains to the software's ability to perform its functions dependably and consistently. Reliability, availability, fault tolerance, and recovery attributes define this dimension. The frequency of software failures constitutes the concept of reliability. The degree to which the software can be utilized without time constraints defines the term "availability." The software's ability to withstand and manage errors within its system characterizes the concept of fault tolerance. The software's ability to recover promptly from errors defines error recovery.

Usability is a metric that evaluates how simple it is for users to use the software. This dimension encompasses usability, learning rate, user satisfaction, and accessibility. The concept of usability pertains to the degree of ease a user can interact with software. Their learning speed determines the rate at which a user acquires proficiency in the software. The degree of user satisfaction reflects how content the user is with

their software interaction. The term "accessibility" pertains to the ease users can access the software.

Efficiency is a metric used to evaluate the effectiveness with which software executes its designated tasks. This dimension encompasses response time, resource utilization, and execution speed. "response time" refers to the duration between the user's input and the software's reaction. The measurement of the amount of resources utilized by software is commonly referred to as resource usage. The speed of execution denotes the rate at which the software can accomplish its designated task.

The ease with which software can be maintained pertains to the dimension of maintainability. Error analysis, modification, stability, and testing characterize this dimension. The analysis of errors shows the degree of susceptibility of the software to being scrutinized for inaccuracies. The degree of ease with which alterations can be made to the software defines the term "modification." The software's ability to maintain its performance and functionality over an extended duration consistently constitutes "stability." The level of testability of the software is indicated by the tests conducted.

The dimension of portability relates to how easily software can be transferred to various platforms. Adaptability, installation, and coexistence characterize this dimension. The software's ability to adjust and function effectively across various platforms defines its degree of adaptability. The installation process demonstrates the ease with which the software can be installed across various platforms. The ability of software to operate seamlessly alongside other software programs on a shared platform defines the concept of coexistence.

To ensure software quality, it is imperative to meet all the dimensions of software quality. The software development process necessitates careful consideration of each dimension's distinct characteristics. By considering all aspects of software quality, it is possible to develop software that exhibits high quality and effectively fulfills the requirements of its users.

Methodology for Data Analysis

he present study employs a descriptive analysis approach as its chosen method of data analysis. The data collection methodology involved using a questionnaire, a widely accepted tool for gathering data. Respondents were presented with a predetermined set of written statements, and the data was subsequently analyzed using SPSS. The closed-ended questionnaire in this study employed the Likert scale as the response format. The present investigation involves the administration of two questionnaires to participants aimed at assessing their perceptions and expectations regarding the quality of the Accurate-5 application. The questionnaires will employ a Likert scale, ranging from 1 to 5.

The present study aims to investigate the performance of the Likert scale

The Likert scale assigns a numerical value to each response option, with a score of 1 representing Strongly Disagree (SD), a score of 2 representing Strongly Agree (SA), a score of 3 representing Somewhat Agree (SA), a score of 4 representing Agree (A), and a score of 5 representing Strongly Agree (SA).

In a research project, a "research object" refers to the subject or entity researchers study.

The investigation's focus is on the participants in the Accurate-5 workshop that STMIK Mardira Indonesia Bandung's D3 Computerized Accounting Study Program organized.

The present study aims to assess the validity and reliability of the test.

A validity test is a metric that assesses the precision of an instrument in generating data that aligns with the intended measurement. The item's validity was assessed using the Corrected Item Total Correlation technique, correlating each item's score with the overall item score. Subsequently, the correlation coefficient is juxtaposed with the r-table, scrutinized at a significance level of 0.05, utilizing a two-tailed test based on the sample size (n) of 41 or degrees of freedom (df) of 39. The r-table derived from the data analysis yields a value of 0.316. be considered an entity when treated as a single, distinct unit.

Calculation of Value and Weight Criteria

The value of each questionnaire item that has been processed and calculated using the following formula:

$$\text{Prosentase} = \frac{\sum \text{skor aktual}}{\sum \text{skor ideal x } 100\%}$$

Information :

Percentage: Total weight value (in percent)
∑ actual score: answers of all respondents
∑ ideal score: the highest score (value).
100 : Fixed number

The comparative analysis involves the evaluation of the computed values of individual questionnaire items against both the real score weight value and the optimal score weight value. The factual score is derived through a comprehensive computation of the participants' responses based on the assigned metrics. In contrast, the optimal score is attained by multiplying the maximum value by the total number of questionnaires and respondents.

The calculation results are confirmed by the following criteria:

Total Value Weight (%)	Criteria
0 - 20	Not very good
21 - 40	Not good
41 - 60	Enough
61 - 80	Good
81 - 100	Very good

In order to obtain the value of how big which states quantitatively from the software quality questionnaire model expressed in percent.

RESULTS AND DISCUSSION

Validity and Reliability Test

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
F11	81,39	160,294	,764	,937
F12	81,56	162,952	,661	,939
F13	81,37	160,288	,727	,938
F14	81,68	156,972	,756	,937
F15	81,12	165,110	,586	,940
R11	81,41	168,999	,478	,941
R12	81,61	168,494	,406	,943
R13	81,39	169,894	,340	,944
U11	81,37	166,788	,563	,940
U12	81,49	166,706	,631	,940
U13	81,39	163,794	,651	,939
U14	81,27	164,401	,586	,940
E1	81,39	159,344	,759	,937
E2	81,39	164,644	,725	,938
M11	81,37	161,338	,726	,938
M12	81,61	168,394	,504	,941
M13	81,56	163,952	,615	,940
M14	81,61	157,294	,770	,937
P11	81,68	156,972	,756	,937
P12	80,93	165,470	,533	,941
P13	81,10	162,790	,642	,939
P14	81,46	160,405	,711	,938

The results of validity and reliability tests using SPSS as follows:

For all sub-characteristics (attributes of Model ISO 9126) above, the validity test has a value greater than 0.316, so the item is declared valid. As for the reliability test, Cronbach's alpha value for all attributes (items) is more significant than 0.7 to declare all items reliable.

Calculation of Value and Criteria

Dimensions And Attribute	Actual Score	Ideal Score	% Total Score	Criteria
Functionality	**793**	**1025**	**77,37**	**Good**
• *Suitability*	160	205	78,05	Good
• *Accuracy*	153	205	74,03	Good
• *Security*	161	205	78,54	Good
• *Interoperability*	148	205	72,20	Very good
• *Compliance*	171	205	83,41	
Reliability	**470**	**615**	**76,42**	**Good**
• *Maturity*	159	205	77,56	Good
• *Fault tolerance*	151	205	73,66	Good
• *Recoverability*	160	205	78,05	
Usability	**642**	**820**	**78,29**	**Good**
• *Understandibility*	161	205	78,54	Good
• *Learnability*	156	205	76,10	Good
• *Operability*	160	205	78,05	Good
• *Attractiviness*	165	205	80,49	
Efficiency	**320**	**420**	**78,04**	**Good**
• *Time Behaviour*	160	205	78,05	Good
• *Resource Behavioury*	160	205	78,05	Good
Maintainability	**616**	**820**	**75,12**	**Good**
• *Analyzability*	161	205	78,54	Good
• *Changeability*	151	205	73,66	Good
• *Stability*	153	205	74,63	Good
• *Testability*	151	205	73,66	Good
Portability	**656**	**820**	**80,00**	**Good**
• *Adaptability*	148	205	72,20	Very good
• *Instalability*	179	205	87,32	Very good
• *Coexistence*	172	205	83,90	Good
• *Replaceability*	157	205	76,59	

Upon application of the criteria table for calculation and conversion, the findings indicate that all dimensions and attributes of the ISO 9126 standard have satisfied the "GOOD" criteria, except the Compliance, Installability, and Coexistence attributes, which have achieved the "VERY GOOD" criteria.

CONCLUSION

According to the ISO 9126 standards, the software quality measurement results indicate that all dimensions meet the "Good" criteria with a corresponding percentage. The percentage of attributes that meet the "Good" criteria is noteworthy, particularly concerning the Compliance, Installability, and Coexistence attributes, which satisfy the "Very Good" criteria.

The mean observed percentage of Accurate-5 software indicating that it satisfies the ISO 9126 standards with a "Good" rating on average.

Evaluating software quality is crucial to achieving successful development and user contentment. This process relies on six fundamental dimensions: functionality, reliability, usability, efficiency, maintainability, and portability. The dimensions above encompass various facets of software, such as its accurate execution denoting functionality, consistent and trustworthy performance indicating reliability, ease of use representing usability, efficient task completion signifying efficiency, simple upkeep reflecting maintainability; and capacity to function on multiple platforms indicating portability. Realizing these dimensions ensures exceptional software quality, supporting its ability to effectively and consistently satisfy user requirements and expectations. Hence, it is imperative to adopt an all-encompassing methodology that meticulously examines every aspect of software development, resulting in software that exhibits superior performance and satisfies the changing requirements of its users.

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