

Analysis of Software Quality Testing "Competence" at PT Mutuagung Lestari Based on Alternative Functional Suitability & Usability ISO/IEC 25010

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Abstract— *COMPETENCE* is one of the recruitment application systems to support the auditor competencies management at PT Mutuagung Lestari. The *COMPETENCE* development process has entered the system testing stage before launch. In this study, system testing was conducted by evaluating the quality of *COMPETENCE* software to analyze the extent of system readiness before launch based on the ISO/IEC 25010 approach. Researchers use the Weighted Product method to determine the quality characteristics of the most relevant ISO/IEC 25010 evaluation model to perform. Weighted Product calculations show that functional suitability and usability are the best evaluation alternatives to do. Functional suitability is intended to evaluate the suitability of functions available in *COMPETENCE*. Usability testing is conducted by providing task scenario and USE Questionnaire to evaluate the usefulness of *COMPETENCE* system functions against user needs and satisfaction. Evaluation parameters are created in questionnaire form and provided to respondents through Google Form. The respondents to this study numbered 20 people including auditor candidates, administrator and development team of. To evaluate the feasibility of research questionnaires conducted validity tests and reliability tests using Susing SPSS version 22. Based on the results of calculations, functional conformity testing characteristics obtain a final value of 83% and usability testing characteristics obtain a final value of 82%. The functional suitability and usability of the *COMPETENCE* system can be expressed to be very satisfactory.

Keywords— *Weighted Product, Functional Suitability, Usability, ISO/IEC 25010.*

I. INTRODUCTION

One of recruitment application system is *COMPETENCE* which is the derivative modules of the MutuApps application system for the management of personnel competence at PT Mutuagung Lestari. PT Mutuagung Lestari needs to increase auditor personnel to support business development so that recruitment application is needed. *COMPETENCE* is made to attract more auditors and make initial selection automatically. *COMPETENCY* enters the system testing stage to measure the suitability of the application system that has been made with with the purpose of the system being created.

One model that can be used to evaluate the quality of application systems is ISO/IEC 25010. Gustriansyah in 2020 conducted research about quality evaluation based on the sub-characteristics of the ISO/IEC 25010 standard in laboratory applications and obtained the results that all application functions had run as expected or had valid values. Another study by Joy in 2020 on the evaluation of the quality

measurement of exposure notification system software Staysafe.ph using ISO 25010. This study examines how conformity functions in the *Exposure Notification System* help provide solutions for reducing the spread of the covid-19 virus, responsive notifications for public health officials, accurate contact tracking, and the implementation of the *Social Distancing System*. Panduwiyasa research in 2020 obtained the results that the implementation of *odoo-based open source* ERP system in accounting modules has an average functional quality value of 4, based on ASQ assessment and Standardization ISO / IEC 25010: 2011.

Research conducted by Peters in 2020 has developed a new ISO 25010 quality model by adding 3 subfactors namely carrying capacity and search capability to complement usability and archiving features to complement security features to evaluate the quality of ERP systems in higher education institutions. Research conducted by Savitri in 2017 showed that with the application of GQM methods in functional conformity evaluation based on ISO/IEC 25010 can improve quality scores in each college and be tailored to the needs and objectives of the college.

One tool for evaluating quality is the measurement of usability or usability of the system is USE Questionnaire. Hariyanto's 2020 research shows that USE Questionnaire is a valid and reliable tool for assessing the usability of e-learning systems. Another study was conducted by Hendra in 2020 on the use of task scenario methods and USE Questionnaire in evaluating the usability of KBKu applications. The results of the study showed that the KBku Application has an excellent level of convenience with the final value of the task scenario is 98% and for use questionnaire testing obtained results of 96%.

In order to give recommendation which criteria are most relevant to conduct quality testing in using a decision support system with Weighted Product method. The research of Nasiem in 2020 explained that the Weighted Product method has a more accurate calculation process in the implementation of white pick applications to help choose the appropriate university, especially for the Pekanbaru region. Aminudin in 2018 conducted research using Weighted Product method in the development of the decision-making system, the employee performance assessment index in the revenue office has been very good so that the evaluation is more objective and effective.

In this study, an evaluation of the quality of *COMPETENCE* software at PT Mutuagung Lestari was

conducted to analyze the extent of system readiness before it was launched based on the ISO/IEC 25010 model approach. Based on the description above, the expected objectives of this study are to determine the weight or alternative characteristics of quality evaluation in COMPETENCE testing, carry out an testing f functional suitability and usability system od based on the ISO /IEC 25010 approach, and analyze the results of quality evaluation testing for COMPETENCE application systems.

II. RESEARCH METHODS

Researchers used the Weighted Product method to weight quality characteristics at ISO/IEC 25010. Quality testing is carried out for the characteristics of functional suitability and usability in ISO/IEC 25010 at the time of pre-launching the COMPETENCE application system. The quality measurement involved 20 respondents consist of auditor candidate, the system development team and the application management team with a questionnaire evaluation. Questionnaires are distributed to respondents through GoogleForm.

The first stage is weighting, the second stage is to conduct functional testing and usability testing of COMPETENCE and the third stage is to analyze the results of iso/IEC 25010 testing evaluation results.

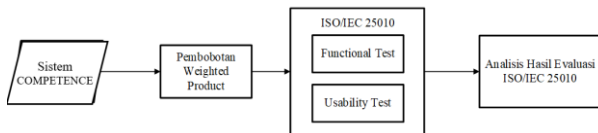


Figure 1 Flow of Research Methodology

The initial stage begins by calculating the weighting of testing quality criteria based on ISO/IEC 25010 using the Weighted Product method to select the most relevant criteria for testing the COMPETENCE system. The calculation steps of the Weighted Product method are:

1. Determine criteria as a reference for decision making.
2. Calculate the match rating of each alternative on each criterion with equations:

$$W_j = \frac{w_j}{\sum w_j} \tag{2.1}$$

W_j states the weight on a criterion and $\sum W_j$ is the amount of weight for the entire criterion.

3. Determines the weight normalization value by multiplying the entire attribute for an alternative by the weight as the positive rank for the profit attribute and the negative rank weight for the cost attribute.
4. Calculates preference values for each alternative with equations:

$$S_i = \prod_{j=1}^n X_{ij}^{w_j} \tag{2.2}$$

S_i states an alternative preference analogous to a vector S , x states the value of the criterion, w states the weight of the criterion, i states the alternative, j states the criterion, n states the number of criteria.

5. Calculates vector values for each alternative with the equation:

$$V_i = \frac{\prod_{j=1}^n x_{ij}^{w_j}}{\prod_{j=1}^n (x_j)^{w_j}} \text{ atau } V_i = \frac{S_i}{\sum S_i} \tag{2.3}$$

V states an alternative preference analogous to vector V , x states the value of the criterion, w states the weight of the criterion, i states the alternative, j states the criterion, n states the number of criteria.

6. Looking for an ideal alternative value is to summarize Vector Value V while making recommendation conclusions.

The second stage is to perform functional and usability testing on the COMPETENCE system. Functional testing is aimed at evaluating the suitability of functions available on the system by providing questions according to the functions used by the respondent. While usability testing is done by providing a number of task scenarios to respondents to react to the system tested and evaluate using *USE Quesionnaire (Usefulness, Ease of Use, Ease of Learning, Satisfaction)*

Questionnaires given to respondents conducted validity tests and reliability tests using SPSS to ensure that questionnaires compiled were valid and reliable to be used as evaluation tools in this study. The validity test is measured by a calculated r value and the reliability test is performed with the Alpha Cronbach equation.

The final stage of the study is to conduct an analysis of the results of the questionnaire assessment using statistical methods to get conclusions of the functional suitability and usability of the COMPETENCE application system with the following likert calculations:

TABLE 1. Likert Calculation

No	Interval %	Conclusion
1	0 – 19.99	Very bad
2	20 – 39.99	Bad
3	40 – 59.99	Enough
4	60 – 79.99	Satisfying
5	80 – 100	Very Satisfying

III. RESULT AND DISCUSSION

3.1 Weighting of COMPETENCE quality characteristics testing

In this study, the quality evaluation characteristics of ISO/IEC 25010 were used as an alternative in weighting calculations. R1 for *Functional Suitability*, R2 for *Performance Efficiency*, R3 for *Compatibility*, R4 for *Usability*, R5 for *Reliability*, R6 for *Security*, R7 for *Maintainability*, and R8 for *Portability*. The decision-making criteria are taken based on the needs of the implementation of testing and the weight of each criterion is determined based on the level of competence system interest at PT Mutuagung Lestari, namely C1 for conformity to accreditation standards, C2 is urgent to be done, C3 is the benefit of testing results, C4 is testing can be done, and C5 for testing resource support.

TABLE 2. Decision Making Criteria & Weights

Code	Kind	Weight
C1	Advantage	3
C2	Advantage	5
C3	Advantage	3
C4	Advantage	4
C5	Cost	4

The first calculation is to find the match rating of each alternative on each criterion with equation 2.1 and determine the value of weight normalization by performing a positive rank for profit attributes and negative rank weights for cost attributes so that the following results are obtained:

TABLE 3. Results of match rating calculation and weight normalization value

Kriteria	Wj	Wj ternormalisasi
C1	0.158	0.158
C2	0.263	0.263
C3	0.158	0.158
C4	0.211	0.211
C5	0.211	-0.211

The next step is calculate the preference value for each alternative by using the equation 2.2 so that the following results are obtained:

TABLE 4. Results of preference value calculation

Alternatif	C1^Wj	C2^Wj	C3^Wj	C4^Wj	C5^Wj	Si
R1	1.2447	1.5274	1.2893	1.2602	0.8642	2.6695
R2	1.1157	1.3352	1.2447	1.1571	1.0000	2.1455
R3	1.1157	1.2001	1.1894	1.0000	1.0000	1.5925
R4	1.1894	1.5274	1.2893	1.2602	0.8642	2.5510
R5	1.1157	1.0000	1.1894	1.1571	1.0000	1.5355
R6	1.2893	1.2001	1.2893	1.2602	0.7935	1.9950
R7	1.2447	1.0000	1.1894	1.0000	0.8642	1.2794
R8	1.1157	1.2001	1.1157	1.0000	1.0000	1.4938

The final stage in weighting is determining the value of each alternative V vector to obtain a recommendation of system testing characteristics with equation 2.3 and summarize the result of the V value.

TABLE 5. The calculation of vector values and their alternative sequences

Alternatif	Nama Alternatif	Vi	Urutan
R1	Functional Suitability	0.1749	1
R2	Performance Efficiency	0.1406	3
R3	Compatibiliy	0.1043	5
R4	Usability	0.1671	2
R5	Reliability	0.1006	6
R6	Security	0.1307	4
R7	Maintainability	0.0838	8
R8	Portability	0.0979	7

Based on the results of *weighted product* calculations obtained the highest Vi value for alternative R1 of 0.1749, namely *Functional Suitability* and alternative R4 of 0.1671, namely *Usability*.

3.2 COMPETENCE Testing Evaluation

In this study there were three questionnaires including: functional suitability questionnaire for auditors, functional suitability questionnaire for administrators and usability questionnaire. After it distributed to respondents, the feasibility evaluation of the results of the questionnaire fills with validity tests and reliability tests before the analysis process is carried out. The results of the validity test and the reliability test of the research questionnaire are as follows:

1. Functional questionnaires for auditors have 45 question parameters with a total of 16 people as auditor candidates. The table r value for this questionnaire is 0.497 and all parameters are declared valid because they have a calculated r value > of the table's r value can be seen in table 6. Test results reliability for Cronbach's Alpha value of 0.993.

TABLE 6. Results of functional testing questionnaire validity test for auditors

Q	Nilai r Hitung	Keterangan
Q1	0.885	Valid
Q2	0.891	Valid
Q3	0.833	Valid
Q4	0.843	Valid
Q5	0.838	Valid
Q6	0.961	Valid
Q7	0.951	Valid
Q8	0.779	Valid
Q9	0.951	Valid
Q10	0.943	Valid
Q11	0.706	Valid
Q12	0.828	Valid
Q13	0.824	Valid
Q14	0.88	Valid
Q15	0.894	Valid
Q16	0.875	Valid
Q17	0.88	Valid
Q18	0.875	Valid
Q19	0.824	Valid
Q20	0.894	Valid
Q21	0.804	Valid
Q22	0.844	Valid
Q23	0.844	Valid
Q24	0.844	Valid
Q25	0.804	Valid
Q26	0.838	Valid
Q27	0.844	Valid
Q28	0.884	Valid
Q29	0.884	Valid
Q30	0.804	Valid
Q31	0.834	Valid
Q32	0.835	Valid
Q33	0.848	Valid
Q34	0.848	Valid
Q35	0.835	Valid
Q36	0.903	Valid
Q37	0.931	Valid
Q38	0.959	Valid
Q39	0.959	Valid
Q40	0.931	Valid
Q41	0.938	Valid
Q42	0.931	Valid
Q43	0.959	Valid
Q44	0.959	Valid
Q45	0.938	Valid

2. Functional questionnaire for administrator has 63 question parameters with the number of respondents is 9 people as system administrator and the value of r tables for this questionnaire is 0.666. The results of the validity test calculation are shown in table 7 where there are 20 invalid parameters. Invalid parameters will be removed and will not be included in subsequent calculations. The cause of invalid parameters, among others, because the questions are made less clear so as to make respondents confused when answering or because the respondent's answers are inconsistent. The functional questionnaire reality test for administrators was conducted on only 43 valid parameters with Cronbach's Alpha value of 0.993.
3. The usability evaluation questionnaire has 30 question parameters with a total of 20 respondents consisting of candidate auditors and application system administrators.

The table r value for this questionnaire is 0.444 and based on the results of the validity test in table 8 all evaluation questionnaire assessment parameters have value r calculate > from the value of r table. Reliability test result for Cronbach's Alpha value of 0.975.

TABLE 7. Functional test results for administrators

Q	Nilai r Hitung	Keterangan
Q1	0.584	Tidak Valid
Q2	0.663	Tidak Valid
Q3	0.357	Tidak Valid
Q4	0.438	Tidak Valid
Q5	0.304	Tidak Valid
Q6	0.746	Valid
Q7	0.641	Tidak Valid
Q8	0.161	Tidak Valid
Q9	0.641	Tidak Valid
Q10	0.532	Tidak Valid
Q11	0.415	Tidak Valid
Q12	0.681	Valid
Q13	0.584	Tidak Valid
Q14	0.709	Valid
Q15	0.668	Valid
Q16	0.747	Valid
Q17	0.709	Valid
Q18	0.747	Valid
Q19	0.702	Valid
Q20	0.668	Valid
Q21	0.512	Tidak Valid
Q22	0.656	Tidak Valid
Q23	0.656	Tidak Valid
Q24	0.656	Tidak Valid
Q25	0.548	Tidak Valid
Q26	0.625	Tidak Valid
Q27	0.656	Tidak Valid
Q28	0.667	Valid
Q29	0.749	Valid
Q30	0.706	Valid
Q31	0.854	Valid
Q32	0.865	Valid
Q33	0.949	Valid
Q34	0.949	Valid
Q35	0.715	Valid
Q36	0.651	Tidak Valid
Q37	0.865	Valid
Q38	0.886	Valid
Q39	0.886	Valid
Q40	0.905	Valid
Q41	0.9	Valid
Q42	0.715	Valid
Q43	0.831	Valid
Q44	0.886	Valid
Q45	0.854	Valid
Q46	0.741	Valid
Q47	0.787	Valid
Q48	0.73	Valid
Q49	0.752	Valid
Q50	0.767	Valid
Q51	0.949	Valid
Q52	0.923	Valid
Q53	0.545	Tidak Valid
Q54	0.923	Valid
Q55	0.905	Valid
Q56	0.715	Valid
Q57	0.864	Valid
Q58	0.786	Valid
Q59	0.923	Valid
Q60	0.905	Valid
Q61	0.949	Valid
Q62	0.949	Valid
Q63	0.949	Valid

TABLE 8. Results of usability questionnaire validity test

Q	Nilai r Hitung	Keterangan
Q1	0.684	Valid
Q2	0.684	Valid
Q3	0.621	Valid
Q4	0.773	Valid
Q5	0.699	Valid
Q6	0.715	Valid
Q7	0.734	Valid
Q8	0.707	Valid
Q9	0.919	Valid
Q10	0.926	Valid
Q11	0.848	Valid
Q12	0.824	Valid
Q13	0.801	Valid
Q14	0.919	Valid
Q15	0.926	Valid
Q16	0.731	Valid
Q17	0.718	Valid
Q18	0.882	Valid
Q19	0.670	Valid
Q20	0.846	Valid
Q21	0.749	Valid
Q22	0.827	Valid
Q23	0.706	Valid
Q24	0.769	Valid
Q25	0.700	Valid
Q26	0.657	Valid
Q27	0.701	Valid
Q28	0.752	Valid
Q29	0.701	Valid
Q30	0.666	Valid

TABLE 9. Auditor's conformity questionnaire results

Q	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	Rata-rata	Max Score	Act Score	%
Q1	4	5	4	5	4	4	5	3	4	4	3	5	4	3	3	4	4.00	80.00	64.00	80%
Q2	4	5	4	4	5	4	5	3	4	4	3	5	4	3	3	4	4.00	80.00	64.00	80%
Q3	4	5	3	5	4	4	5	3	4	4	3	5	4	3	3	4	3.94	80.00	63.00	79%
Q4	4	5	3	5	5	4	5	3	4	4	3	5	4	3	3	4	4.00	80.00	64.00	80%
Q5	4	5	3	4	4	4	5	3	4	4	3	5	4	3	3	4	3.88	80.00	62.00	78%
Q6	5	5	4	5	5	4	5	3	4	4	3	5	4	3	3	4	4.13	80.00	66.00	83%
Q7	5	5	4	4	5	4	5	3	4	4	3	5	4	3	3	4	4.06	80.00	65.00	81%
Q8	4	5	4	5	3	4	5	3	4	4	3	5	4	3	3	4	3.94	80.00	63.00	79%
Q9	5	5	4	4	5	4	5	3	4	4	3	5	4	3	3	4	4.06	80.00	65.00	81%
Q10	5	5	4	4	4	4	5	3	4	4	3	5	4	3	3	4	4.00	80.00	64.00	80%
Q11	5	5	2	4	4	4	4	3	4	4	3	4	4	3	3	4	3.75	80.00	60.00	75%
Q12	5	5	3	4	5	4	4	3	4	4	3	4	4	3	3	4	3.88	80.00	62.00	78%
Q13	5	5	5	4	5	4	4	3	4	4	3	4	4	3	3	4	4.00	80.00	64.00	80%
Q14	5	5	4	4	5	4	4	3	4	4	3	4	4	3	3	4	3.94	80.00	63.00	79%
Q15	5	5	4	4	4	4	4	3	4	4	3	4	4	3	3	4	3.88	80.00	62.00	78%
Q16	5	5	4	5	5	4	4	3	4	4	3	4	4	3	3	4	4.00	80.00	64.00	80%
Q17	5	5	4	4	5	4	4	3	4	4	3	4	4	3	3	4	3.94	80.00	63.00	79%
Q18	5	5	4	5	5	4	4	3	4	4	3	4	4	3	3	4	4.00	80.00	64.00	80%
Q19	5	5	3	5	5	4	4	3	4	4	3	4	4	3	3	4	3.94	80.00	63.00	79%
Q20	5	5	4	4	4	4	4	3	4	4	3	4	4	3	3	4	3.88	80.00	62.00	78%
Q21	5	5	5	4	4	4	5	4	5	4	3	5	4	4	3	4	4.25	80.00	68.00	85%
Q22	5	5	5	4	5	4	5	4	3	5	4	4	4	3	4	4	4.31	80.00	69.00	86%
Q23	5	5	5	4	5	4	5	4	5	4	3	5	4	4	3	4	4.31	80.00	69.00	86%
Q24	5	5	5	4	5	4	5	4	3	5	4	4	4	3	4	4	4.31	80.00	69.00	86%
Q25	5	5	5	4	4	4	5	4	5	4	3	5	4	4	3	4	4.25	80.00	68.00	85%
Q26	5	5	5	5	4	4	5	4	5	4	3	5	4	4	3	4	4.31	80.00	69.00	86%
Q27	5	5	5	4	5	4	5	4	5	4	3	5	4	4	3	4	4.31	80.00	69.00	86%
Q28	5	5	5	5	4	5	4	5	4	4	3	5	4	4	3	4	4.38	80.00	70.00	88%
Q29	5	5	5	5	5	4	5	4	5	4	3	5	4	4	3	4	4.38	80.00	70.00	88%
Q30	5	5	5	4	4	4	5	4	5	4	3	5	4	4	3	4	4.25	80.00	68.00	85%
Q31	5	5	4	5	4	4	5	4	3	4	3	4	4	3	3	4	4.00	80.00	64.00	80%
Q32	5	5	4	4	4	4	5	4	3	4	3	4	4	3	3	4	3.94	80.00	63.00	79%
Q33	5	5	4	5	5	4	5	4	3	4	3	4	4	3	3	4	4.06	80.00	65.00	81%
Q34	5	5	4	5	5	4	5	4	3	4	3	4	4	3	3	4	4.06	80.00	65.00	81%
Q35	5	5	4	4	4	4	5	4	3	4	3	4	4	3	3	4	3.94	80.00	63.00	79%
Q36	5	5	5	5	4	4	5	4	4	4	3	5	4	3	3	4	4.19	80.00	67.00	84%
Q37	5	5	4	4	4	4	5	4	4	4	3	5	4	3	3	4	4.06	80.00	65.00	81%
Q38	5	5	4	5	5	4	5	4	4	4	3	5	4	3	3	4	4.19	80.00	67.00	84%
Q39	5	5	4	5	5	4	5	4	4	4	3	5	4	3	3	4	4.19	80.00	67.00	84%
Q40	5	5	4	4	4	4	5	4	4	4	3	5	4	3	3	4	4.06	80.00	65.00	81%
Q41	5	5	4	5	4	4	5	4	4	4	3	5	4	3	3	4	4.13	80.00	66.00	83%
Q42	5	5	4	4	4	4	5	4	4	4	3	5	4	3	3	4	4.06	80.00	65.00	81%
Q43	5	5	4	5	5	4	5	4	4	4	3	5	4	3	3	4	4.19	80.00	67.00	84%
Q44	5	5	4	5	5	4	5	4	4	4	3	5	4	3	3	4	4.19	80.00	67.00	84%
Q45	5	5	4	5	4	4	5	4	4	4	3	5	4	3	3	4	4.13	80.00	66.00	83%
Nilai akhir rata-rata																				82%

Functional testing of COMPETENCE is carried out based on the functions owned by the application system so that questionnaires shared with respondents are different. Based on the results of the functional questionnaire by the auditor spelled out in table 9 obtained a final value of 82%. Functional evaluation questionnaires by administrators are only calculated based on valid evaluation parameter based on validity tests spelled out in table 10 obtained final value of 84%. The final result of functional conformity testing is 83%.

TABLE 10. Administrator conformity questionnaire results

Q	R1	R2	R3	R4	R5	R6	R7	R8	R9	Rata-rata	Max Score	Act Score	%	Validitas
Q6	4	4	5	5	4	5	5	5	4	4.56	45.00	41.00	91%	Valid
Q12	4	4	5	5	3	4	5	3	4	4.11	45.00	37.00	82%	Valid
Q14	4	4	5	5	4	4	5	3	4	4.22	45.00	38.00	84%	Valid
Q15	4	4	5	5	4	4	4	3	4	4.11	45.00	37.00	82%	Valid
Q16	4	4	5	5	4	5	5	3	4	4.33	45.00	39.00	87%	Valid
Q17	4	4	5	5	4	4	5	3	4	4.22	45.00	38.00	84%	Valid
Q18	4	4	5	5	4	5	5	3	4	4.33	45.00	39.00	87%	Valid
Q19	3	4	5	5	3	5	3	4	4.11	45.00	37.00	82%	Valid	
Q20	4	4	5	5	4	4	4	3	4	4.11	45.00	37.00	82%	Valid
Q28	4	4	5	5	5	5	5	5	4	4.67	45.00	42.00	93%	Valid
Q29	4	3	5	5	5	5	5	4	4.56	45.00	41.00	91%	Valid	
Q30	4	3	5	5	5	4	3	4	4.11	45.00	37.00	82%	Valid	
Q31	4	3	5	5	4	5	4	3	4.11	45.00	37.00	82%	Valid	
Q32	4	3	5	5	4	4	4	3	4	4.00	45.00	36.00	80%	Valid
Q33	4	3	5	5	4	5	5	4	4.33	45.00	39.00	87%	Valid	
Q34	4	3	5	5	4	5	4	4	4.33	45.00	39.00	87%	Valid	
Q35	4	3	5	5	4	4	4	5	4.22	45.00	38.00	84%	Valid	
Q37	4	3	5	5	4	4	3	4	4.00	45.00	36.00	80%	Valid	
Q38	4	3	5	5	4	5	3	4	4.22	45.00	38.00	84%	Valid	
Q39	4	3	5	5	4	5	3	4	4.22	45.00	38.00	84%	Valid	
Q40	4	3	5	5	4	4	4	4	4.11	45.00	37.00	82%	Valid	
Q41	4	3	5	5	4	5	4	4	4.22	45.00	38.00	84%	Valid	
Q42	4	3	5	5	4	4	5	4	4.22	45.00	38.00	84%	Valid	
Q43	4	3	5	5	4	5	5	4	4.44	45.00	40.00	89%	Valid	
Q44	4	3	5	5	4	5	3	4	4.22	45.00	38.00	84%	Valid	
Q45	4	3	5	5	4	5	4	3	4.11	45.00	37.00	82%	Valid	
Q46	4	3	4	5	4	5	4	3	4	4.00	45.00	36.00	80%	Valid
Q47	4	3	4	5	4	5	4	4	4.11	45.00	37.00	82%	Valid	
Q48	4	3	4	5	3	5	4	4	4.00	45.00	36.00	80%	Valid	
Q49	4	3	4	5	3	5	5	4	4.11	45.00	37.00	82%	Valid	
Q50	4	3	4	5	3	4	4	4	3.89	45.00	35.00	78%	Valid	
Q51	4	3	5	5	4	5	4	4	4.33	45.00	39.00	87%	Valid	
Q52	4	3	5	5	4	4	5	4	4.22	45.00	38.00	84%	Valid	
Q54	4	3	5	5	4	4	5	4	4.22	45.00	38.00	84%	Valid	
Q55	4	3	5	5	4	4	4	4	4.11	45.00	37.00	82%	Valid	
Q56	4	3	5	5	2	4	4	4	3.89	45.00	35.00	78%	Valid	
Q57	4	3	5	5	3	4	5	4	4.11	45.00	37.00	82%	Valid	
Q58	4	3	5	5	4	5	4	4	4.33	45.00	39.00	87%	Valid	
Q59	4	3	5	5	4	4	5	4	4.22	45.00	38.00	84%	Valid	
Q60	4	3	5	5	4	4	4	4	4.11	45.00	37.00	82%	Valid	
Q61	4	3	5	5	4	5	5	4	4.33	45.00	39.00	87%	Valid	
Q62	4	3	5	5	4	5	4	4	4.33	45.00	39.00	87%	Valid	
Q63	4	3	5	5	4	5	4	4	4.33	45.00	39.00	87%	Valid	
Nilai akhir rata-rata											84%			

TABLE 11. COMPETENCE Task Scenario

No	Skenario Tugas	Pengguna
T1	Melakukan registrasi akun	Auditor
T2	Login kedalam sistem, kemudian logout dan login kembali	Auditor dan Administrator
T3	Mengajukan permohonan (apply) skema sertifikasi	Auditor
T4	Mengisi data log audit untuk skema yang diajukan	Auditor
T5	Mengupload persyaratan dokumen sesuai skema	Auditor
T6	Mengerjakan soal online examination	Auditor
T7	Menerima pemberitahuan progress aplikasi yang diajukan	Auditor
T8	Melakukan review data auditor yang sudah apply	Administrator
T9	Membuat konfigurasi online test berdasarkan database soal	Administrator
T10	Memberikan informasi interview/pemberitahuan sejauh mana progress aplikasi	Administrator

TABLE 12. Task scenario verification results

No	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20
T1	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
T2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
T3	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
T4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
T5	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
T6	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
T7	x	x	x	x	v	x	x	x	x	v	v	v	v	v	v	v	v	v	v	v
T8	v	v	v	v	v	v	v	v	v	-	-	-	-	-	-	-	-	-	-	-
T9	v	v	v	v	v	v	v	v	v	-	-	-	-	-	-	-	-	-	-	-
T10	v	x	v	v	v	v	x	v	x	-	-	-	-	-	-	-	-	-	-	-

COMPETENCE usability test uses use questionnaires by first assigning task scenarios to respondents in order to interact on the application system being tested. Task scenarios are differentiated by user from the auditor and administrator side according to the functionality of the application system developed.

After the respondent has finished performing the specified scenario task, then the verification process is carried out. The

results of verification of scenario tasks that have been done to 20 respondents can be seen in table 12 with the provision v if successful and x if the scenario task fails to be performed.

TABLE 13. Results of usability questionnaire

Q	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	Rata-rata	Max Score	Act Score	%
Q1	4	5	5	4	5	4	5	4	3	4	4	4	4	5	4	3	4	4	3	4	4.10	100	82	82%
Q2	4	5	5	4	5	4	5	4	3	4	4	4	4	5	4	3	4	4	3	4	4.10	100	82	82%
Q3	4	5	5	5	5	5	4	3	4	4	4	4	4	5	4	3	4	4	3	4	4.20	100	84	84%
Q4	5	5	5	5	3	4	4	3	4	4	4	4	4	5	4	3	4	4	3	4	4.05	100	81	81%
Q5	5	5	5	5	3	4	4	3	4	4	4	4	4	5	4	3	4	5	3	4	4.15	100	83	83%
Q6	5	5	5	4	3	4	4	3	4	4	4	4	4	5	4	3	4	5	3	4	4.10	100	82	82%
Q7	5	5	4	5	3	4	4	3	4	4	4	4	4	5	4	3	4	5	3	4	4.10	100	82	82%
Q8	5	5	4	4	5	3	4	4	3	4	4	4	4	5	4	3	4	3	4	3.95	100	79	79%	
Q9	4	5	4	5	4	4	5	4	3	4	5	4	3	5	4	4	4	3	4	4.15	100	83	83%	
Q10	5	5	4	5	4	4	5	4	3	4	5	4	3	5	5	4	4	4	3	4	4.20	100	84	84%
Q11	4	5	4	5	3	4	5	4	3	4	5	4	3	5	4	4	4	3	4	4.10	100	82	82%	
Q12	4	5	3	3	3	3	4	4	3	4	5	4	3	5	4	4	4	3	4	3.95	100	79	79%	
Q13	4	5	3	4	3	4	5	4	3	4	5	4	3	5	3	4	4	3	4	3.95	100	79	79%	
Q14	4	5	4	5	4	4	5	4	3	4	5	4	3	5	4	4	4	3	4	4.15	100	83	83%	
Q15	5	5	4	5	4	4	5	4	3	4	5	4	3	5	4	4	4	3	4	4.20	100	84	84%	
Q16	4	5	2	4	4	4	5	4	3	4	5	4	3	5	5	4	4	4	3	4	4.00	100	80	80%
Q17	4	5	2	4	3	3	4	4	3	4	5	4	3	5	5	4	4	3	4	3.85	100	77	77%	
Q18	5	5	4	4	3	4	4	3	4	4	5	4	3	5	5	4	4	4	3	4	4.05	100	81	81%
Q19	4	5	2	4	3	4	4	4	3	4	5	4	3	5	4	4	4	3	4	3.95	100	79	79%	
Q20	5	5	5	5	4	4	5	4	4	5	4	3	5	5	4	4	4	3	4	4.20	100	86	86%	
Q21	4	5	5	3	4	5	4	4	5	4	3	5	4	4	4	3	4	4	3	4	4.20	100	84	84%
Q22	4	5	5	4	4	5	4	4	5	4	4	5	4	4	4	4	3	4	4	4.25	100	85	85%	
Q23	4	5	5	4	4	5	4	4	5	4	4	3	4	4	4	4	3	4	4	4.15	100	83	83%	
Q24	5	5	5	4	3	4	4	4	4	4	5	4	3	4	4	4	4	3	4	4.05	100	81	81%	
Q25	5	5	4	5	4	3	4	4	4	4	5	4	4	4	4	4	5	4	3	4	4.15	100	83	83%
Q26	4	5	4	4	3	4	4	4	4	4	5	4	4	4	4	4	4	3	4	4.05	100	81	81%	
Q27	4	5	4	4	3	4	4	4	4	4	5	4	4	4	4	4	5	4	3	4	4.05	100	81	81%
Q28	4	5	4	5	4	4	4	4	4	4	5	4	4	4	4	4	5	4	3	4	4.20	100	84	84%
Q29	4	5	4	4	5	3	4	4	3	4	5	4	4	4	4	4	5	4	3	4	4.05	100	81	81%
Q30	4	5	4	4	4	4	5	4	4	4	5	4	4	4	4	4	5	4	3	4	4.15	100	83	83%
Nilai rata-rata usability COMPETENCE																						82%		

TABLE 14. Auditor's functional testing questionnaire

No.	Atribut	Q	Pertanyaan
1	Ketersediaan fungsional	Q1	Fungsi untuk melakukan registrasi dan melengkapi data diri
		Q2	Fungsi untuk mengajukan permohonan aplikasi jabatan dan skema
		Q3	Fungsi untuk melakukan online examination
		Q4	Fungsi untuk melakukan re-take exam
		Q5	Fungsi untuk pemberitahuan progress aplikasi yang diajukan

TABLE 15. Administrator functional testing questionnaire

No	Atribut	Q	Pertanyaan
1	Ketersediaan fungsional	Q1	Fungsi untuk informasi registrasi dan aplikasi yang diajukan auditor
		Q2	Fungsi untuk menyeleksi persyaratan dokumen auditor (approval, reject)
		Q3	Fungsi untuk membuat bank soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q4	Fungsi untuk membuat online test berdasarkan skema dan jabatan sesuai pengelompokan kategori soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q5	Fungsi untuk pengacakan soal
		Q6	Fungsi untuk menampilkan informasi progress pengajuan auditor
		Q7	Fungsi untuk integrasi data ke sistem sdm.mtuapps
2	Kelengkapan fungsional	Q8	Fungsi terkait informasi registrasi dan aplikasi yang diajukan auditor
		Q9	Fungsi terkait menyeleksi persyaratan dokumen auditor (approval, reject)
		Q10	Fungsi terkait membuat bank soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q11	Fungsi terkait membuat online test berdasarkan skema dan jabatan sesuai pengelompokan kategori soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q12	Fungsi terkait pengacakan soal
		Q13	Fungsi terkait menampilkan informasi progress pengajuan auditor
		Q14	Fungsi terkait integrasi data ke sistem sdm.mtuapps
3	Kesesuaian fungsi dengan tujuan penggunaan	Q15	Kesesuaian fungsi untuk informasi registrasi dan aplikasi yang diajukan auditor
		Q16	Kesesuaian fungsi untuk menyeleksi persyaratan dokumen auditor (approval, reject)
		Q17	Kesesuaian fungsi untuk membuat bank soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q18	Kesesuaian fungsi untuk membuat online test berdasarkan skema dan jabatan sesuai pengelompokan kategori soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q19	Kesesuaian fungsi untuk pengacakan soal
		Q20	Kesesuaian fungsi untuk menampilkan informasi progress pengajuan auditor
		Q21	Kesesuaian fungsi untuk integrasi data ke sistem sdm.mtuapps
4	Kepuasan Pengguna	Q22	Kemampuan fungsi untuk menampilkan informasi registrasi dan aplikasi yang diajukan auditor
		Q23	Kemampuan fungsi untuk menyeleksi persyaratan dokumen auditor (approval, reject)
		Q24	Kemampuan fungsi untuk membuat bank soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q25	Kemampuan fungsi untuk membuat online test berdasarkan skema dan jabatan sesuai pengelompokan kategori soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q26	Kemampuan fungsi untuk pengacakan soal
		Q27	Kemampuan fungsi untuk menampilkan informasi progress pengajuan auditor
		Q28	Kemampuan fungsi untuk integrasi data ke sistem sdm.mtuapps
5	Akurasi data yang dihasilkan	Q29	Akurasi data registrasi dan aplikasi yang diajukan auditor
		Q30	Akurasi data persyaratan dokumen auditor yang diseleksi (approval, reject)
		Q31	Akurasi data bank soal
		Q32	Akurasi data online test
		Q33	Akurasi pengacakan soal
		Q34	Akurasi data pemberitahuan progress pengajuan auditor
		Q35	Akurasi data yang terintegrasi ke sistem sdm.mtuapps
6	Presisi data yang dihasilkan	Q36	Presisi data registrasi dan aplikasi yang diajukan auditor
		Q37	Presisi data persyaratan dokumen auditor yang diseleksi (approval, reject)
		Q38	Presisi data bank soal
		Q39	Presisi data online test
		Q40	Presisi pengacakan soal
		Q41	Presisi data pemberitahuan progress pengajuan auditor
		Q42	Presisi data yang terintegrasi ke sistem sdm.mtuapps
7	Konsistensi data yang dihasilkan	Q43	Konsistensi data registrasi dan aplikasi yang diajukan auditor
		Q44	Konsistensi data persyaratan dokumen auditor yang diseleksi (approval, reject)
		Q45	Konsistensi data bank soal
		Q46	Konsistensi data online test
		Q47	Konsistensi pengacakan soal
		Q48	Konsistensi data pemberitahuan progress pengajuan auditor
		Q49	Konsistensi data yang terintegrasi ke sistem sdm.mtuapps
8	Kesesuaian fungsi sistem dengan peraturan sistem akreditasi dan sertifikasi	Q50	Fungsi untuk informasi registrasi dan aplikasi yang diajukan auditor sesuai skema akreditasi yang berlaku
		Q51	Fungsi untuk menyeleksi persyaratan dokumen auditor (approval, reject) dengan kualifikasi yang dipersyaratkan
		Q52	Fungsi untuk membuat bank soal (menambahkan, mengubah, menghapus dan menampilkan) dengan standar audit
		Q53	Fungsi untuk membuat online test berdasarkan skema dan jabatan sesuai pengelompokan kategori soal (menambahkan, mengubah, menghapus dan menampilkan) dengan skema yang dipilih
		Q54	Fungsi untuk pengacakan soal dengan bank soal yang telah dibuat
		Q55	Fungsi untuk menampilkan informasi progress pengajuan auditor dengan kecukupan kualifikasi personal
		Q56	Fungsi untuk integrasi data ke sistem sdm.mtuapps dengan kualifikasi yang diperoleh
9	Kesesuaian penggunaan fungsi dengan prosedur penggunaan	Q57	Fungsi untuk informasi registrasi dan aplikasi yang diajukan auditor
		Q58	Fungsi untuk menyeleksi persyaratan dokumen auditor (approval, reject)
		Q59	Fungsi untuk membuat bank soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q60	Fungsi untuk membuat online test berdasarkan skema dan jabatan sesuai pengelompokan kategori soal (menambahkan, mengubah, menghapus dan menampilkan)
		Q61	Fungsi untuk pengacakan soal
		Q62	Fungsi untuk menampilkan informasi progress pengajuan auditor
		Q63	Fungsi untuk integrasi data ke sistem sdm.mtuapps

auditors and some administrator accounts the notification function cannot be maximized to be sent to users or auditors. After verifying the task scenario, respondents were given a processory evaluation of usability with the results displayed in table 13 and a final value of 82%.

TABLE 16. Usability questionnaire testing

No	Pertanyaan
	USEFULNESS
1	Sistem ini membuat kegiatan saya lebih tepat guna
2	Sistem ini membuat saya lebih produktif
3	Sistem ini sangat bermanfaat
4	Sistem ini memberikan saya banyak kendali terhadap aktifitas saya
5	Sistem ini membuat hal-hal yang ingin saya selesaikan bisa menjadi lebih mudah
6	Menggunakan Sistem ini dapat menghemat waktu saya
7	Sistem ini sesuai dengan kebutuhan saya
8	Hasil proses dari sistem ini sesuai dengan yang saya harapkan
	EASE OF USE
9	Sistem ini mudah digunakan
10	Sistem ini sederhana untuk digunakan
11	Sistem ini mudah dipahami oleh saya
12	Langkah-langkah penggunaan sistem ini sangat sederhana
13	Sistem ini dapat melakukan penyesuaian
14	Menggunakan sistem ini tidak perlu upaya yang terlalu berat
15	Saya bisa menggunakan sistem ini tanpa instruksi tertulis
16	Saya tidak melihat adanya ketidak konsistenan selama menggunakan sistem ini
17	Pengguna yang jarang maupun yang sering menggunakan sistem ini akan suka menggunakan sistem ini
18	Kesalahan yang terjadi di sistem ini mudah dipulihkan secara cepat dan mudah
19	Saya selalu berhasil menggunakan sistem ini setiap saat
	EASE OF LEARNING
20	Saya mempelajari sistem ini dengan cepat
21	Saya mudah mengingat bagaimana menggunakan sistem ini
22	Penggunaan sistem ini mudah dipelajari
23	Saya cepat terampil menggunakan sistem ini
	SATISFACTION
24	Saya puas dengan sistem ini
25	Saya bersedia merekomendasikan sistem ini kepada teman
26	Menggunakan sistem ini sangat menyenangkan
27	Sistem ini bekerja sesuai dengan apa yang saya inginkan
28	Saya terkesan dengan sistem ini
29	Saya merasa sistem ini yang saya butuhkan
30	Saya senang menggunakan sistem ini

IV. CONCLUSION

Weighting calculations using Weighted Product can be used as a support to provide recommendation decisions for the selection of COMPETENCE software testing quality characteristics. Based on the Weighted Product calculation shown that Functional Suitability and Usability have the highest vector values of 0.1749 and 0.1671 so that it can be expressed as the most relevant characteristic alternative recommendations for testing in the current COMPETENCE.

Based on the results of research shown that COMPETENCE can be tested for quality with characteristics of functional conformity and usability with the approach of ISO / IEC 25010 during the pre-launching process. Functional conformity testing results get a final value of 83% and usability testing results get a final value of 82%. In the calculation of competence system likert has a very satisfactory functional conformity for all

Based on the results of the task scenario testing obtained the average result is 94% where there are still some failures when performing the task scenario, namely some notification functions that are still not received by users, especially for

functions it has both for auditors and administrators as system managers and also has very satisfactory uses based on questionnaires from respondents.

In the next research, it is expected that quality testing can be carried out for all evaluation characteristics based on ISO / IEC 25010 so that improvements in the development of COMPETENCE systems can be better identified and support the process of managing personnel competence.

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