

Evaluation of Employee Payroll Website Quality Using the WebQual 4.0 Model at SPBU 23.301.34

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ABSTRACT

The rapid adoption of web-based information systems in human resource management has increased the importance of evaluating website quality from the user perspective. This study aims to evaluate the quality of the employee payroll website at SPBU 23.301.34 using the WebQual 4.0 model, which consists of usability, information quality, and service interaction quality, as well as user satisfaction. A quantitative approach was employed using a descriptive and verificative research design. Data were collected through questionnaires distributed to all active users of the payroll website, totaling 24 respondents, supported by observations and interviews. The collected data were analyzed using descriptive statistics, validity and reliability testing, and mean value analysis for each indicator and dimension. The results indicate that the overall quality of the payroll website is categorized as good. The usability and information quality dimensions obtained the highest mean scores, indicating that the website is easy to use and provides clear, accurate, and understandable payroll information. In contrast, service interaction quality received the lowest score, mainly related to system response speed and occasional technical issues during peak usage periods. Despite these limitations, user satisfaction remained at a moderately satisfied to satisfied level, demonstrating that the website provides practical benefits for employees. These findings suggest that the payroll website contributes to improving transparency and efficiency in payroll administration. However, improvements in system performance, stability, and data update processes are recommended to further enhance user experience and service quality.

INTRODUCTION

The rapid development of information technology in the current digital era has transformed the way organizations manage business processes, including administration and human resource management. Information technology no longer functions merely as a supporting tool, but has become a strategic component to improve service quality, operational efficiency, and information transparency (Arfian dkk., 2021). Websites represent one form of information technology implementation that is widely utilized by organizations as a primary medium for presenting and distributing information effectively and efficiently to both internal and external users (Sebayang, 2022).

An application is a software program developed to facilitate users in performing specific tasks by providing structured features and functions. In practice, applications are designed to support activities such as transaction recording, goal planning, and data analysis, thereby helping users manage their work more effectively and efficiently (Subiksa dkk., 2025). In an organizational context, the use of applications is not limited to public services or marketing purposes, but also encompasses internal systems such as payroll, attendance, and employee administration.

PT Pertamina SPBU 23.301.34 Palembang is one of the business units that has adopted information technology in its employee administrative processes. One form of this implementation is the use of a fingerprint-based attendance system to record employee attendance, which is then integrated with a web-based payroll system. The payroll website is capable of automatically importing attendance data from fingerprint Excel files, calculating salaries and deductions in an integrated manner, and providing self-service features that allow employees to independently access their salary details and attendance records. This condition indicates that information technology plays a significant role in improving operational efficiency and information transparency within the SPBU environment.

However, although the web-based payroll system has been used in daily operations, a systematic evaluation of the website's quality from the end-user perspective has never been conducted. In fact, website quality directly affects user comfort, trust, and satisfaction in utilizing the system. Therefore, a structured study is required to assess the quality of the payroll website used at SPBU 23.301.34.

The Webqual 4.0 model is one of the most widely used methods for measuring website quality based on user perceptions through three main dimensions: usability, information quality, and service interaction quality (Abigail Athallah, Muhammad, Kraugusteeliana, 2022). Various previous studies have demonstrated that this model is effective



for evaluating website quality across different service contexts. Research conducted by (Muttakin dkk., 2022), for example, analyzed the quality of a government service website at the Pekanbaru City Land Office, which frequently experienced technical issues such as access failures and errors in certain menus. The results showed that all three Webqual 4.0 dimensions had a positive and significant effect on user satisfaction, although the usability aspect still required improvement, particularly in terms of ease of access and interface clarity.

Similarly, a study by (Minarwati & Hidayah, 2022) on the STMIK El Rahma website using the Webqual 4.0 model found that usability was the most dominant factor influencing user satisfaction, while information quality and service interaction quality still had room for improvement. These findings were further supported (Putri, Meidyan Permata, Herawati, Permata Sari, 2022), who examined the quality of the GTASS website at PT Tiga Putra Kreasi Palembang using a modified Webqual 4.0 model. Their results indicated that service interaction quality had a significant effect on user satisfaction, and that all Webqual variables simultaneously contributed to overall user satisfaction.

Based on the above discussion, it can be concluded that website quality particularly in the dimensions of usability, information quality, and service interaction quality plays an important role in shaping user (Yulianto & Ismail, 2021). However, no studies have been found that specifically evaluate the quality of employee payroll websites within the SPBU environment, particularly at SPBU 23.301.34 Palembang. Therefore, this study aims to evaluate the quality of the employee payroll website at SPBU 23.301.34 using the Webqual 4.0 model based on end-user perceptions, as well as to provide recommendations for improvement to enhance service quality and user experience of the web-based payroll system.

LITERATURE REVIEW

The literature review on website quality emphasizes the central role of web-based systems as digital media for delivering information and services. In general, a website is defined as a collection of interconnected pages containing digital content such as text, images, audio, video, and animations that can be accessed via the internet (Sebayang, 2022). A website is also viewed as a set of interrelated web pages used to present data in an attractive digital format, enabling users to obtain information quickly and efficiently (Syaifuddin, Aditya, 2023). From this perspective, a website functions not only as a data repository but also as an interactive medium for communication, promotion, and public services, whose effectiveness is strongly influenced by design quality, ease of navigation, and the relevance of the information provided (Dakhilul Arifin dkk., 2021).

Websites can be classified into several types based on their objectives and functions, including information portals, commercial websites (e-commerce), educational platforms, personal websites, and organizational or corporate websites (Purwandani & Syamsiah, 2021). Along with the advancement of information technology, the role of websites has evolved from merely presenting static information to becoming interactive media that support various online (Hariyanto, Dirgahayu, Teduh & Prihantoro P, 2020), such as service registration, permit applications, and administrative transactions. One example of this application is an employee payroll website, which is generally integrated into a Human Resource Information System (HRIS). In this context, the website is used to manage employee data, calculate salaries, allowances, deductions, and overtime, as well as generate payroll reports automatically, thereby improving the effectiveness, accuracy, and transparency of payroll administration (Sebayang, 2022).

Website quality reflects the extent to which a website is able to deliver services, information, and user experiences that satisfy its users. This quality is not determined solely by visual appearance but also by aspects such as usability, the accuracy and relevance of information, and system reliability in delivering services. (Purwandani & Syamsiah, 2021) state that website quality can be measured through three main aspects: usability, information quality, and service interaction quality. Users' perceptions of interface design, access speed, data security, information accuracy, and ease of navigation are critical factors influencing their assessment of a website (Yulianto & Ismail, 2021).

One widely used approach for evaluating website quality from the user's perspective is the Webqual method (Suharto & Hariadi, 2021). This method is designed to assess how well a website meets user expectations and supports their activities when interacting with the system. Webqual 4.0, as an extension of previous versions, focuses on three main dimensions usability, information quality, and service interaction quality which are grounded in information systems and Human Computer Interaction (HCI) (Purwandani & Syamsiah, 2021). Usability relates to ease of use and clarity of navigation; information quality refers to the accuracy, clarity, completeness, and relevance of content; while service interaction quality reflects aspects such as security, trust, responsiveness, and user comfort in interacting with the system. The integration of these three dimensions enables a more comprehensive evaluation of website quality and its relationship with user satisfaction.

In empirical research, these constructs are commonly measured using a Likert scale, which converts qualitative perceptions into quantitative data. Respondents express their level of agreement with researcher-developed statements ranging from "strongly disagree" to "strongly agree," allowing attitudes, opinions, and perceptions to be statistically analyzed (Putri, Meidyan Permata, Herawati, Permata Sari, 2022). The collected data are then processed and analyzed using software such as PLS with a Partial Least Squares (PLS) approach (Wijaya & Widjaja, 2022). PLS is suitable for models involving latent variables and can be applied to relatively small sample sizes without requiring normally distributed data, while also supporting validity testing, reliability testing, and structural relationship analysis among

variables (Trinita, Hertati, Simanjuntak, 2024). Validity tests are conducted to ensure that each item accurately measures the intended construct, whereas reliability tests such as Cronbach’s Alpha and Composite Reliability are used to assess the internal consistency of the measurement instrument (Putri, Meidyan Permata, Herawati, Permata Sari, 2022; Yulianto & Ismail, 2021).

Various previous studies applying Webqual 4.0 across different contexts provide an important foundation for evaluating payroll websites. (Muttakin dkk., 2022) evaluated a government service website at the Pekanbaru City Land Office and found that usability, information quality, and service interaction quality had positive and significant effects on user satisfaction, although the usability aspect still required improvement, particularly regarding ease of access and interface clarity. (Minarwati & Hidayah, 2022) examined the STMIK El Rahma website and reported that usability was the most dominant factor influencing user satisfaction, while information quality and service interaction quality required further enhancement. Meanwhile, (Putri, Meidyan Permata, Herawati, Permata Sari, 2022) analyzed the GTASS website at PT Tiga Putra Kreasi Palembang using a modified Webqual 4.0 model and found that service interaction quality had a significant partial effect on user satisfaction, while all variables simultaneously influenced satisfaction, with usability obtaining the highest score. These findings demonstrate that the Webqual 4.0 model is both relevant and robust for measuring website quality and underscore the strategic role of usability, information quality, and service interaction quality in shaping user satisfaction. Within this framework, the evaluation of the employee payroll website at SPBU 23.301.34 can be directed toward identifying aspects that already meet user needs as well as those that still require improvement.

METHOD

Research Design

This study adopts a quantitative approach aimed at evaluating the quality of the employee payroll website at SPBU 23.301.34 based on the Webqual 4.0 model. The research is both descriptive and verificative in nature, as it not only describes the current condition of the website quality but also examines the level of user satisfaction with respect to the measured Webqual dimensions. Data were collected using a cross-sectional design, conducted at a single point in time through the distribution of questionnaires to active users of the payroll website.

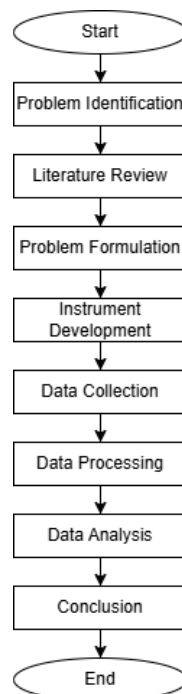


Fig. 1 Research Procedure

The research was carried out systematically, beginning with problem identification through preliminary observations of the existing payroll system and the issues experienced by users. The next stage involved a literature review to strengthen the theoretical foundation related to Webqual 4.0, website quality, user satisfaction, and payroll information systems. Based on the results of the observations and literature review, the research problem formulation and research instruments were developed, referring to the Webqual 4.0 dimensions and the context of website usage at SPBU 23.301.34.

After the research instruments were finalized, data collection was conducted through questionnaires and interviews. The collected data were then processed and analyzed to obtain an overview of the website quality, the level

of user satisfaction, and recommendations for improvement that can be implemented by the system administrators.

Population and Sample

The population of this study consisted of all active users of the Employee Payroll Website at SPBU 23.301.34. Based on the available data, the total population (N) comprised 24 employees who act as end users of the system.

Given that the population size was relatively small and entirely accessible, a total sampling technique was applied. Under this approach, all members of the population were included as research respondents, resulting in a sample size (n) equal to the population, namely 24 respondents. The use of total sampling was intended to minimize sampling error and to ensure that the evaluation of website quality accurately represents the perceptions of all system users.

Data Collection Techniques

The research data were collected using three primary techniques: observation, interviews, and questionnaires. Observation was conducted by directly examining the use of the payroll website by employees and administrative staff. Through this activity, the researcher obtained a realistic overview of system usage workflows, the most frequently accessed features, and the issues encountered in daily operations. The findings from the observation were used as supporting material in the development of the research instruments and the interpretation of the Webqual 4.0 evaluation results.

Semi-structured interviews were conducted with the supervisor responsible for managing the payroll system. An interview guide was prepared to explore information related to the website development process, technical and non-technical issues (such as access speed and system errors), and expectations regarding future feature development. The interview results were used to enrich the analysis, particularly for the usability and service interaction quality dimensions.

Questionnaires served as the primary instrument for collecting quantitative data on users' perceptions of the payroll website quality. The instrument was developed based on the three Webqual 4.0 dimensions usability, information quality, and service interaction quality as well as an additional variable, user satisfaction. The questionnaire was distributed online using Google Forms to 24 employees who were active users of the website. Each statement was measured using a five-point Likert scale, ranging from "strongly disagree" (score 1) to "strongly agree" (score 5).

Research Variables and Instruments

The variables in this study were developed based on the Webqual 4.0 model, which consists of three main dimensions of website quality and one user satisfaction variable,

Usability (Usability Quality) this dimension measures the extent to which the website is easy to learn and use, the interface is not confusing, menus and features are easy to locate, and navigation between pages is clear and well structured.

Information Quality this dimension evaluates the clarity of payroll slip information display, the accuracy and consistency of the information with actual data, the timeliness of the displayed data, and the extent to which the information is easy for users to understand.

Service Interaction Quality this dimension includes the website's response speed during use, the frequency of errors or system disruptions, the security of login and data access processes, and the system's ability to assist users in completing their tasks.

User Satisfaction this variable measures the overall level of user satisfaction with the payroll website, including user comfort, trust, and the intention to continue using the system.

Table 1. Research Variables

Variable Type	Variable	Indicator Code	
Independent Variables	Usability	U1	
		U2	
		U3	
		U4	
	Information Quality	I1	
		I2	
		I3	
		I4	
	Service Interaction Quality	S1	
		S2	
		S3	
		S4	
	Dependent Variable	User Satisfaction	US1



Table 1 presents the research variables and indicator codes used in this study. The independent variables consist of three WebQual 4.0 dimensions, namely usability (U1–U4), information quality (I1–I4), and service interaction quality (S1–S4). User satisfaction (US1) is treated as the dependent variable to capture the overall evaluation of the payroll website. These indicator codes were used to structure the questionnaire and to calculate the mean scores for each construct.

Each dimension was operationalized into several statement indicators included in the questionnaire. Respondents' responses to these indicators were used to calculate the scores for each dimension and to evaluate the overall quality of the website.

Data Analysis Techniques

The questionnaire data were compiled using data processing software and analyzed through descriptive analysis and measurement model analysis. Descriptive analysis was used to describe respondent characteristics and response trends by calculating the mean values for each indicator and each Webqual 4.0 dimension (usability, information quality, and service interaction quality), as well as user satisfaction.

Subsequently, validity and reliability tests were conducted to ensure the adequacy of the measurement instrument. Validity testing assessed the ability of the indicators to measure the intended constructs, while reliability testing examined the internal consistency among items. The tests were performed using PSPP software by referring to outer loading values, Average Variance Extracted (AVE), Cronbach's Alpha, and Composite Reliability.

The quantitative analysis results were then linked with findings from observations and interviews to obtain a comprehensive understanding of the payroll website quality at SPBU 23.301.34. Based on these results, conclusions and practical, applicable recommendations for improvement were formulated.

RESULT

Primary Data Analysis

The primary data analysis in this study was conducted based on the results of questionnaire responses from 24 respondents, as well as findings obtained from interviews and field observations. These data were processed to describe users' perceptions of the payroll website quality based on the Webqual 4.0 dimensions and the level of user satisfaction.

Website Interface

The payroll website examined in this study is a web-based system used by employees to access salary-related information. The website contains several main menus, such as payroll summaries and detailed salary slips, which facilitate users in obtaining information independently and in a well-structured manner.

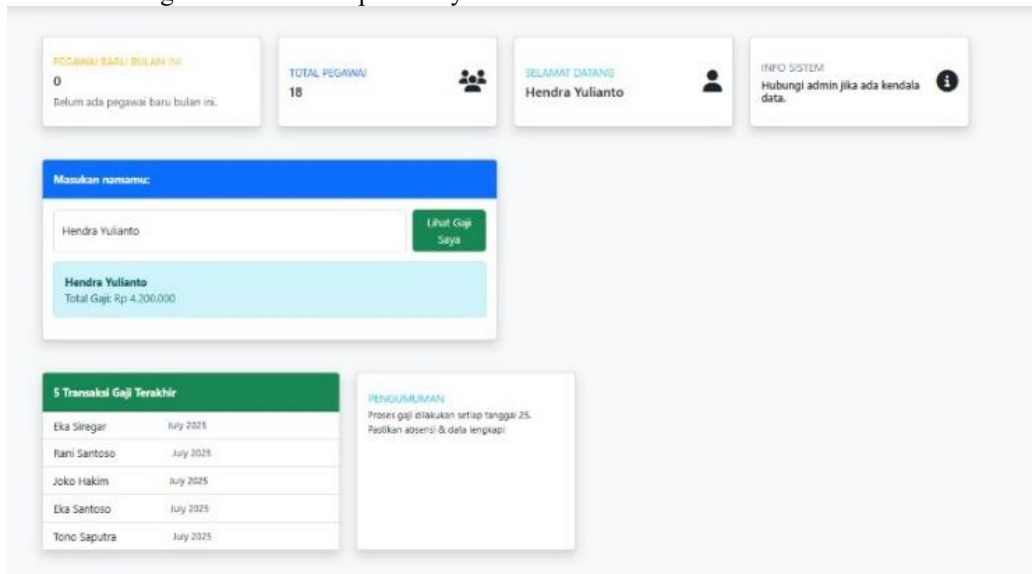


Fig. 2 Payroll Website Interface

Illustrates the main interface of the payroll website, which provides access to payroll summaries and salary slip details. This interface enables employees to retrieve salary-related information independently in a structured format.

Respondent Characteristics

The characteristics of respondents in this study include gender, age, highest educational attainment, and payroll website usage frequency. These characteristics were analyzed to identify variations in responses based on demographic and usage-related factors.

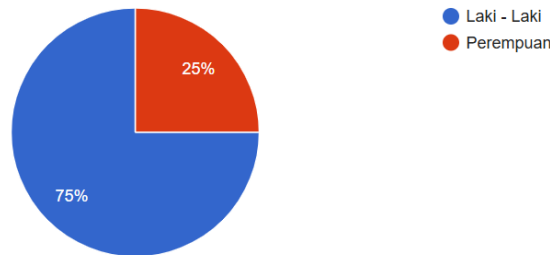


Fig. 3 Gender Distribution of Respondents

Based on the respondent characteristics data, the majority of respondents were male, totaling 18 individuals or 75% of the total sample. Meanwhile, 6 respondents, representing 25%, were female. Thus, it can be concluded that most study participants were male, although female respondents also contributed significantly to the sample.

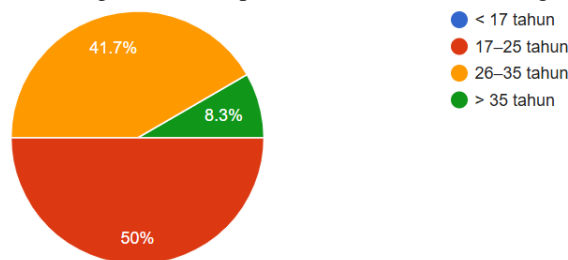


Fig. 4 Age Distribution of Respondents

Based on the age distribution, the majority of respondents were within the 17-25 years age range, consisting of 12 individuals or 50% of the total respondents. This was followed by the 26-35 years age group, which included 10 respondents or 41.7%. Furthermore, the age group above 35 years accounted for 2 respondents or 8.3%, while no respondents were under 17 years old. Overall, the respondents were predominantly young adults, indicating that the study sample was dominated by younger generations.

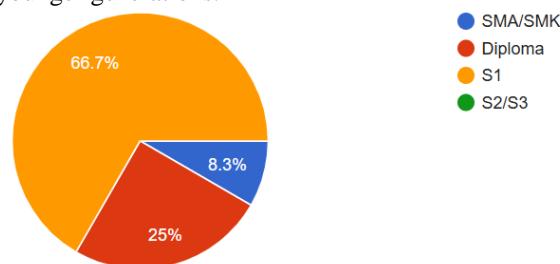


Fig. 5 Educational Background of Respondents

In terms of highest educational attainment, most respondents held a bachelor's degree (S1), accounting for 66.7% of the total sample. This was followed by diploma graduates at 25% and senior high school/vocational school (SMA/SMK) graduates at 8.3%. No respondents held a master's or doctoral degree (S2/S3). This composition suggests that the majority of payroll website users have a relatively uniform and higher educational background.

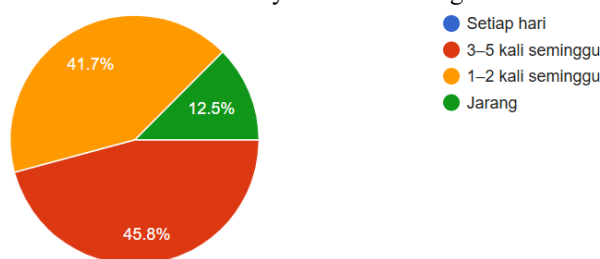


Fig. 6 Payroll Website Usage Frequency of Respondents

Based on usage frequency, none of the respondents accessed the payroll website on a daily basis. Most respondents used the website 3–5 times per week (45.8%), followed by those who accessed it 1–2 times per week (41.7%), while 12.5% reported using the website only occasionally. These findings indicate that the payroll website is utilized regularly by employees, particularly during periods related to payroll processing.

Validity Test Results

The validity test was conducted to determine the extent to which each indicator in the research instrument is capable of measuring the intended variable. Validity testing was performed by comparing the calculated correlation coefficient (r-value) of each indicator with the critical r-table value of 0.404. An indicator is considered valid if its calculated r-value exceeds the r-table value.

Table 2. Instrument Validity Test Results

	Indicator	r-calculated	r-table	Information
Usability	U2	0,841	0,404	VALID
	U3	0,723	0,404	VALID
	U4	0,671	0,404	VALID
Information Quality	I1	0,520	0,404	VALID
	I2	0,799	0,404	VALID
	I3	0,696	0,404	VALID
	I4	0,545	0,404	VALID
Service Interaction Quality	S1	0,734	0,404	VALID
	S2	0,733	0,404	VALID
	S3	0,418	0,404	VALID
	S4	0,423	0,404	VALID

Based on the validity test results, all indicators for the Usability, Information Quality, and Service Interaction Quality variables have calculated r-values greater than the r-table value. Therefore, all indicators used in this study are declared valid and suitable for use as measurement instruments in data collection, as they are able to accurately represent the constructs of the variables under investigation.

Reliability Test Results

The reliability test was conducted to determine the level of consistency and stability of the research instrument in measuring the study variables. Reliability testing was performed using the Cronbach's Alpha method on all indicators, totaling 12 items, with valid data obtained from 24 respondents.

Case Processing Summary

Cases	N	Percent
Valid	24	92,3%
Excluded	2	7,7%
Total	26	100,0%

Fig. 7 Case Processing Summary

Reliability Statistics

Cronbach's Alpha	N of Items
,54	12

Fig. 8 Cronbach' Alpha

The test results indicate a Cronbach's Alpha value of 0.54. This value suggests that the research instrument demonstrates an acceptable level of reliability, and therefore can be used for research purposes. Accordingly, the instrument is considered capable of producing relatively consistent measurement results when applied under similar conditions.

Mean Values per Indicator

Based on the results of the mean value calculations for each WebQual 4.0 indicator, respondents' perceptions of the quality of the payroll website under study can be identified.

Table 3. Mean Values per WebQual 4.0 Indicator

Variable	Indicator	Mean	Category
Usability	U1	5,00	Very Good
	U2	3,96	Good
	U3	4,29	Very Good
	U4	4,67	Very Good
Information Quality	I1	4,71	Very Good
	I2	4,71	Very Good
	I3	4,54	Very Good

	I4	4,96	Very Good
Service Interaction Quality	S1	2,88	Fair
	S2	3,04	Fair
	S3	4,75	Very Good
	S4	4,67	Very Good
User Satisfaction	US1	4,17	Good

For the Usability variable, indicators U1, U3, and U4 achieved a very good category, while indicator U2 was categorized as good. These results indicate that, in general, the website is easy to use, has a clear interface, and supports user comfort in operating the system.

The Information Quality variable showed very good results across all indicators. The high mean values for indicators I1 through I4 suggest that the information presented on the payroll website is perceived as accurate, relevant, easy to understand, and trustworthy by users.

For the Service Interaction Quality variable, indicators S1 and S2 were categorized as fair, whereas indicators S3 and S4 achieved very good ratings. These findings indicate that although service interaction quality is generally satisfactory, certain aspects still require improvement, particularly those related to communication ease and service responsiveness.

Meanwhile, the User Satisfaction indicator obtained a mean value categorized as good. This result suggests that, overall, users are satisfied with the payroll website, although there remains room for improvement in service quality to further enhance user satisfaction.

Mean Values per Dimension

Based on the mean values for each WebQual 4.0 dimension and user satisfaction, it can be concluded that the overall quality of the payroll website falls within a good category. The Usability, Information Quality, and Service Interaction Quality dimensions show average values that reflect positive user perceptions of the quality of the system being used.

The User Satisfaction dimension has the highest mean value compared to the other dimensions, indicating that users are generally satisfied with the performance and benefits of the payroll website. The relatively low standard deviation values across all dimensions suggest that respondents' perceptions are fairly consistent and do not exhibit significant differences in assessment.

Table 4. Mean Values per WebQual 4.0 Dimension and User Satisfaction

Dimension	N	Mean	Std. Dev	Min	Max
Usability	24	0,288	0,058	4,907	0,000
Information Quality	23	0,174	0,072	2,434	0,015
Service Interaction Quality	24	0,294	0,076	3,924	0,000
User Satisfaction	24	0,658	0,039	17,054	0,000

The payroll website evaluated in this study can be considered to have met the quality aspects of an information system based on the WebQual 4.0 approach. Nevertheless, improvements are still required in certain aspects of service interaction to further enhance the user experience in an optimal manner.

DISCUSSION

The results indicate that the overall quality of the employee payroll website at SPBU 23.301.34 is categorized as good. Based on the WebQual 4.0 evaluation, all three dimensions—usability, information quality, and service interaction quality received positive responses from users, although with varying levels of assessment. Usability achieved the highest score, followed by information quality, while service interaction quality received the lowest score. Nevertheless, the level of user satisfaction ranged from moderately satisfied to satisfied, indicating that the payroll website provides tangible benefits for employees.

The usability dimension was rated very positively, reflecting that the website is easy to understand and operate, with clear menus, features, and navigation. This suggests that the interface design aligns well with users' needs and work habits. However, minor improvements in visual consistency and layout organization could further enhance user comfort.

In terms of information quality, payroll information was perceived as clear, detailed, and transparent, which strengthens users' trust in the system. However, respondents noted that data updates were not always timely, particularly when payroll corrections or schedule changes occurred. This highlights the need for improved data synchronization to ensure information remains up to date.

Compared to the other dimensions, service interaction quality received the lowest evaluation. Users reported issues related to slow system response, occasional errors, and access disruptions during peak periods, especially near payroll processing times. Although data security was considered adequate, system stability and performance remain



areas requiring improvement to optimize user experience.

Overall, user satisfaction is influenced not only by ease of use and information clarity but also by system reliability and performance. These findings are consistent with previous studies emphasizing usability and information quality as key determinants of user satisfaction, while service interaction quality often requires further attention. Therefore, maintaining existing strengths while prioritizing system performance improvements is essential for sustainable use of the payroll website.

CONCLUSION

This study aimed to evaluate the quality of the employee payroll website at SPBU 23.301.34 using the WebQual 4.0 model, which includes usability, information quality, service interaction quality, and user satisfaction. The findings show that the overall website quality is good, with usability and information quality obtaining the highest mean values. This indicates that users perceive the website as easy to use and that payroll and attendance information is presented clearly and understandably. In contrast, service interaction quality received the lowest score, particularly concerning system response speed and occasional technical disruptions. Despite this, user satisfaction remains at a moderately satisfied to satisfied level, suggesting that the website has been beneficial for employees.

The results imply that the payroll website contributes to improving transparency and efficiency in payroll administration at SPBU 23.301.34. Employees can access salary slips and attendance records directly without relying on administrative recaps, enabling faster and more organized access to payroll information. However, the relatively lower score for service interaction quality indicates that system performance and stability still require improvement to prevent slow access and system errors.

Based on these findings, several improvements are recommended. System performance optimization and capacity enhancement should be prioritized to reduce response time and minimize disruptions, particularly during peak payroll periods. More regular data updates are also necessary to ensure the accuracy and timeliness of displayed information. Additionally, improving visual layout consistency and adding features such as payroll notifications or downloadable PDF salary slips could further enhance the usefulness of the website.

This study has several limitations. The sample size was limited to 24 respondents from a single SPBU, which restricts the generalizability of the findings. Moreover, the evaluation relied solely on questionnaire responses. Future research is recommended to involve larger samples across multiple SPBU units or similar organizations and to incorporate additional methods, such as system usage analysis or comparisons with other payroll applications, to provide a more comprehensive understanding of website quality and user behavior.

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