

# СОЦИОЛОГИЧЕСКИЕ ИССЛЕДОВАНИЯ В ОБРАЗОВАНИИ

УДК 377+004

DOI: 10.17853/1994-5639-2023-7-155-171

## ONLINE QUALITY ASSURANCE SYSTEM IN VOCATIONAL SCHOOLS USING THE WEBSITE: A USER SATISFACTION PERSPECTIVE

S. Hadi<sup>1</sup>, W. M. Wijaya<sup>2\*</sup>, R. Utari<sup>3</sup>, W. Wijayanti<sup>4</sup>, C. S. A. Jabar<sup>5</sup>

Universitas Negeri Yogyakarta, Yogyakarta, Indonesia.

E-mail: <sup>1</sup>samsul\_hd@uny.ac.id; <sup>2</sup>widiamw@uny.ac.id; <sup>3</sup>rahmania\_utari@uny.ac.id; <sup>4</sup>wiwik\_wijayanti@uny.ac.id; <sup>5</sup>cepi\_safruddin@uny.ac.id

\*Corresponding author

**Abstract.** *Introduction.* This study was conducted to identify the factors that influence user satisfaction to determine the quality of the website (online system) for quality assurance in vocational education from the user's point of view and to provide the best recommendations for improving the quality of the vocational school quality assurance online system.

*Aim.* This study aims to analyse the quality of the vocational school quality assurance website that affects user satisfaction using the WebQual model.

*Methodology and research methods.* This research used structural equation modelling – partial least square (PLS-SEM) analysis. The purposive sampling technique was chosen to determine the sample of respondents from operators or users of the quality assurance website from 36 vocational schools in Yogyakarta Province, Indonesia.

*Results.* Based on the analysis results, it was found that the service interaction quality factor significantly influenced the e-service quality of the vocational school website for quality assurance, which then directly affected website user satisfaction.

*Practical significance.* This research has implications for developing vocational school website for quality assurance to optimise the website function. This research also has implications for schools to facilitate performance reporting through quality assurance website.

**Keywords:** website quality, quality assurance, user satisfaction, school improvement, school performance, online quality assurance system.

**For citation:** Hadi S., Wijaya W. M., Utari R., Wijayanti W., Jabar C. S. A. Online quality assurance system in vocational schools using the website: A user satisfaction perspective. *Obrazovanie i nauka = The Education and Science Journal*. 2023; 25 (7): 155–171. DOI: 110.17853/1994-5639-2023-7-155-171

# ОНЛАЙН-СИСТЕМА ОБЕСПЕЧЕНИЯ КАЧЕСТВА В ПРОФЕССИОНАЛЬНО-ТЕХНИЧЕСКИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ С ИСПОЛЬЗОВАНИЕМ ВЕБ-САЙТА: УДОВЛЕТВОРЕННОСТЬ ПОЛЬЗОВАТЕЛЕЙ

С. Хади<sup>1</sup>, В. М. Виджайя<sup>2</sup>, Р. Утари<sup>3</sup>, В. Виджаянти<sup>4</sup>, К. С. А. Джабар<sup>5</sup>

Государственный университет Джокьякарты, Джокьякарта, Индонезия.

E-mail: <sup>1</sup>samsul\_hd@uny.ac.id; <sup>2</sup>widiamw@uny.ac.id; <sup>3</sup>rahmania\_utari@uny.ac.id; <sup>4</sup>wiwik\_wijayanti@uny.ac.id; <sup>5</sup>cepi\_safruddin@uny.ac.id

**Аннотация.** Введение. Это исследование было проведено с целью выявления факторов, влияющих на удовлетворенность пользователей, чтобы определить качество веб-сайта, обеспечивающего качество образования в профессионально-технических учебных заведениях, и выработать наилучшие рекомендации по улучшению этой онлайн-системы.

**Цель.** Это исследование направлено на анализ качества веб-сайта по обеспечению качества образования в профессионально-технических учебных заведениях, который влияет на удовлетворенность пользователей с использованием модели WebQual.

**Методология и методы исследования.** В этом исследовании использовалось моделирование структурных уравнений – частичный метод наименьших квадратов (PLS-SEM). Был применен метод целевой выборки для определения респондентов из операторов или пользователей веб-сайта из 36 профессиональных школ в провинции Джокьякарта, Индонезия.

**Результаты.** На основе результатов анализа было установлено, что фактор качества взаимодействия с сервисом существенно повлиял на качество электронных услуг на веб-сайте для обеспечения качества образования в профессионально-техническом учебном заведении, что затем непосредственно сказалось на удовлетворенности пользователей веб-сайта.

**Практическая значимость.** В исследовании приводятся рекомендации для разработки и оптимизации веб-сайтов, обеспечивающих качество образования в профессионально-технических учебных заведениях. Это исследование также может быть полезным для школ в плане облегчения отчетности о результатах деятельности через веб-сайты обеспечения качества образования.

**Ключевые слова:** качество сайта, обеспечение качества, удовлетворенность пользователей, улучшение школы, успеваемость в школе, онлайн-система обеспечения качества образования.

**Для цитирования:** Хади С., Виджайя В. М., Утари Р., Виджаянти В., Джабар К. С. А. Он-лайн-система обеспечения качества в профессионально-технических учебных заведениях с использованием веб-сайта: удовлетворенность пользователей // Образование и наука. 2023. Т. 25, № 7. С. 155–171. DOI: 110.17853/1994-5639-2023-7-155-171

# SISTEMA EN LÍNEA PARA EL ASEGURAMIENTO DE LA CALIDAD EN INSTITUCIONES EDUCATIVAS VOCACIONALES Y TÉCNICAS CON EL USO DE UNA PÁGINA WEB: SATISFACCIÓN DEL USUARIO

S. Hadi<sup>1</sup>, W. M. Wijaya<sup>2</sup>, R. Utari<sup>3</sup>, W. Wijayanti<sup>4</sup>, C. S. A. Jabar<sup>5</sup>

Universidad Estatal de Yogyakarta, Yogyakarta, Indonesia.

E-mail: <sup>1</sup>samsul\_hd@uny.ac.id; <sup>2</sup>widiamw@uny.ac.id; <sup>3</sup>rahmania\_utari@uny.ac.id; <sup>4</sup>wiwik\_wijayanti@uny.ac.id; <sup>5</sup>cepi\_safruddin@uny.ac.id

**Abstracto.** *Introducción.* Este estudio se llevó a cabo para identificar los factores que afectan la satisfacción del usuario, determinar la calidad del sitio web que brinda educación de calidad en las instituciones vocacionales y técnicas, a fin de generar las mejores recomendaciones para mejorar este sistema en línea.

*Objetivo.* El estudio tiene como objetivo analizar la calidad del sitio web para el aseguramiento de la calidad de la educación en las instituciones de formación vocacional, lo que afecta la satisfacción del usuario con el uso del modelo WebQual.

*Metodología, métodos y procesos de investigación.* Para este estudio se utilizaron modelos de ecuaciones estructurales: método de mínimos cuadrados parciales (PLS-SEM). Se aplicó un método de muestreo dirigido para identificar a los encuestados de operadores o usuarios de sitios web de 36 escuelas vocacionales en la provincia de Yogyakarta, Indonesia.

*Resultados.* Con base en los resultados del análisis, se encontró que el factor de calidad de la interacción con el servicio afectó significativamente la calidad de los servicios electrónicos en el sitio web para garantizar la calidad de la educación en una institución de educación vocacional, lo que a su vez afectó directamente la satisfacción del sitio web de los usuarios.

*Significado práctico.* Con el estudio se ofrecen recomendaciones para el desarrollo y optimización de los sitios web que garanticen la calidad de la educación en las escuelas de formación vocacional. Este estudio también puede ser útil para que las escuelas faciliten la presentación de informes sobre el rendimiento a través de sitios web de control de calidad.

**Palabras claves:** calidad del sitio, aseguramiento de la calidad, satisfacción del usuario, mejora escolar, rendimiento escolar, sistema en línea para el aseguramiento de la calidad de la educación.

**Para citas:** Hadi S., Wijaya W. M., Utari R., Wijayanti V., Jabar C. S. A. Sistema en línea para el aseguramiento de la calidad en las instituciones educativas vocacionales y técnicas con el uso de una página web: Satisfacción del usuario. *Obrazovanie i nauka = Educación y Ciencia.* 2023; 25 (7): 155–171. DOI: 110.17853/1994-5639-2023-7-155-171

## Introduction

In today's digital era, the realisation of information has become an inseparable part of human activities. The realisation of this information is also inseparable from the role of Internet technology as a tool to facilitate and accelerate the transfer of information. According to data from Datareportal, 98% of Indonesians have access to the Internet. This shows that most Indonesian people use the Internet in their activities [1]. During and after the COVID-19 pandemic, there have been changes or shifts in the configuration of Internet use, especially in public services. Previously, public services were mostly carried out directly, but now public services have been integrated with Internet services. One of Internet use in public services is using website media.

A website is a collection of web pages that contain information stored on a server and displayed in hypertext form [2]. Another role of the website is to provide services to users online and provide information quickly that can be accessed any-time, anywhere [3]. Educational institutions in Indonesia currently use the website to deliver information. Websites are used to improve services to users [4] and ensure easy access to information for internal and external users [5].

One form of website implementation in educational institutions is the quality assurance system in the form of a vocational school quality assurance website developed by the Indonesian Ministry of Education and Culture. This website is intended to view vocational school performance reports, making monitoring school performance results easier. Utilisation of the website exists to meet the information needs of computerised institutions to improve service quality [6]. Website quality is a critical factor that must be considered because the website is like an institutional image in cyberspace [7]. Other studies also state that website quality is the most critical element that users see and evaluate to decide whether they will revisit it or not [8].

Some researchers explain that websites are closely related to design [9], usability, and information content [10]. Furthermore, according to S. Barnes & R. Vidgen, website quality can be measured using three factors: usability, information quality, and service interaction quality [11]. However, another study found that the website quality did not meet user expectations due to an unattractive appearance, the long time to access the website, and difficulties in communicating with the website administrator [12]. In addition, other problems that arise in the use of vocational school website for quality assurance include difficulty logging in, calculating the quality report card cannot be continued, after reinstalling the screen display turns black, download constraints, failed registration and synchronisation failed to connect to the database [13]. These problems need to be considered because the suitability of user expectations is the key to the sustainability of a website because user satisfaction with the information obtained from the websites, they visit affects the website success [14].

In our modern world, websites have become essential, and people have adapted to accommodate the changes. Website usage has been a key subject for many years in research on online systems [12, 15]. With cutting-edge technologies such as websites, new opportunities are presented, and the adoption and approval of this promising new technology have become a significant matter for practitioners and academics. Thus, it is critical to comprehend which elements contribute to website quality and user satisfaction.

Multiple studies have examined variables influencing website quality [12, 15, 16]. In this context, this study introduces a WebQual 4.0 model, which uses the existing framework and integrates the user satisfaction variable. The primary goal of this study is to develop a more comprehensive understanding of factors that affect website quality and user satisfaction. In this study, the WebQual 4.0 model was applied to examine the quality of the vocational school website for quality assurance and user satisfaction.

## Literature Review

### ***Quality Assurance in Vocational School***

Quality is defined as the highest level of excellence, which refers to high expectations of the product or service. New quality challenges constantly arise in education. Therefore, many schools measure the quality of their education by financial measures and other inputs. However, quality eventually became a broader concept with positive connotations. Further understanding of quality can be understood through references to the United National Educational, Scientific and Cultural Organisation (UNESCO); about the universal concept of quality relating to the current and future needs of students, which is maintained through the efforts of educational institutions. Quality is also found in input because students are involved in creating it. Six dimensions of quality proclaimed by UNESCO include students, environment, content, process, results, and responsiveness [17].

Quality assurance in education is a more complex process involving monitoring, supervision, review, assessment, and implementation of the curriculum to produce high-quality learning that meets standards. It is necessary for national development as an action taken by educational institutions [18]. To achieve quality assurance, educational institutions must establish a programme to ensure product or service standards. This can be achieved through procedures for minimising errors, which allow management to focus on work scheduling, process monitoring, and evaluation procedures [19]. In addition, the programme should include documenting operational strategies and communicating decisions to all parties involved.

Quality education at the vocational school level has the potential to play an essential role in realising the vision of sustainable development. This potential is realised by providing high-quality secondary education that links economic well-being with culture, diversity, and resources. A vocational school quality assurance system has high-quality assurance if the expected standard of work allows students to complete their work according to pre-set standards. The output aspects of the quality of education in vocational schools include the quality of graduates based on graduate competency standards and industry needs, as well as graduate certification. The outcomes of the quality of education in vocational schools include the employment rate, graduates' independence, increasing graduates' ability, and the development of vocational school institutions.

### ***Online Quality Assurance System***

School quality assurance aims to control the process to ensure the quality of educational services and products [20]. It is important for all schools to understand that school quality assurance measures must focus on student learning and needs. Schools need a quality assurance system to carry out quality mapping, prepare quality improvement plans, implement quality improvement plans, conduct evaluations or internal audits, and establish education quality standards. In addition, schools need to consider stakeholders or influential people in education.

Stakeholders must use the school quality assurance system to create measures that meet educational needs [21]. This is because the current performance indicators are weak, so they need to be improved using a new system, such as an online quality assurance system. New system recommendations are made to identify and negotiate needs and turn them into practical actions [22]. A successful school needs a quality assurance system with a strong quality control system. This is because the quality of education in the system falls under a system-centered framework. That way, an online Quality assurance system can be a solution in school supervision and quality control functions.

## Methodology, Materials and Methods

### Research Design

This study used quantitative methods to identify the service quality factors offered by the vocational school website for quality assurance to influence user satisfaction. This website is a web-based application developed by the Indonesian Ministry of Education and Culture to see the performance achievements of vocational schools. This study uses the WebQual 4.0 method to measure the quality of the website in terms of service quality to see user satisfaction (Figure 1). WebQual was developed by S. Barnes & R. Vidgen based on quality function development (QFD), which includes usability, information quality, and service interaction quality [11].

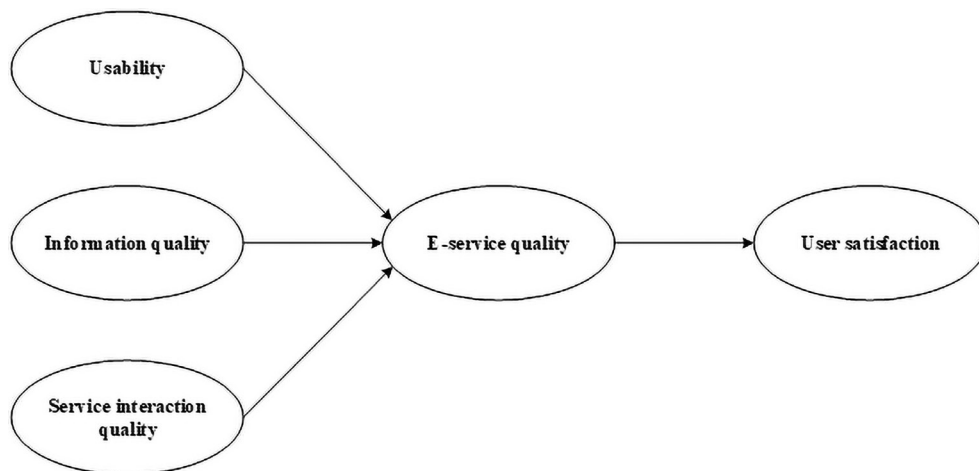


Fig. 1. Research model

The usability factor is related to website design, ease of accessing the website, ease of navigation, and a clear description of the website manager [12]. This factor focuses on the user's perception of using the website. The information quality factor is an essential key of a website that identifies whether the information presented to users is good or not [12]. In this factor, the quality of information is measured by

the relevance of information, accuracy, and timeliness of the website. The service interaction quality factor is related to the fulfilment of user expectations when surfing the website, user trust in using the website, and the ease with which users communicate with website managers [12]. S. Barnes & R. Vidgen describe the three concepts that lead to e-service quality [11]. In this study, e-service quality, in this case, the quality of the website (online system) for quality assurance in vocational school, is measured based on user satisfaction to see the extent to which users believe that the website meets their information needs. Therefore, user satisfaction assesses end-user satisfaction in using the website.

The research model developed is presented in Figure 1. Usability, information quality, and service interaction quality are included in the model to measure e-service quality, which is expanded by adding user satisfaction. It has created a model to measure website quality based on e-service quality and user satisfaction. The following are the hypotheses raised in this study:

H1. Usability has a positive and direct effect on e-service quality.

H2. Information quality has a positive and direct effect on e-service quality.

H3. Service interaction quality has a positive and direct effect on e-service quality.

H4. E-service quality has a positive and direct effect on user satisfaction.

### **Population and Sample**

The population in this study came from users of the vocational school website for quality assurance. The purposive sampling technique was chosen to determine the sample of respondents with the criteria of operators or users of the website for quality assurance in vocational school. The determination of the sample was based on the minimum sample requirements in predicting the model using the PLS-SEM method by utilising the SMARTPLS application [23]. The samples taken for this study came from 36 vocational schools in the Yogyakarta Province, Indonesia.

### **Data Collection Technique**

The data in this study were collected using an online questionnaire using the Google form application to be given to respondents. The instrument used for the questionnaire refers to the WebQual dimension (Table 1). The assessment on this research questionnaire used a Likert scale of 1–4 with the information: strongly disagree, disagree, agree, and strongly agree.

Table 1  
Instrument used to measure and assess the quality of the vocational school website for quality assurance

Variable	Code	Item
Usability	P1	Ease of understanding menu navigation on the website
	P2	Ease of understanding the guide for filling in data on the website
	P3	Ease of operating website features
	P4	The appearance of the website looks professional

Information quality	KI5	The accuracy of the news listed on the website
	KI6	The reliability of the news listed on the website
	KI7	News updates on the website
	KI8	The relevance of the news listed on the website
	KI9	Ease of understanding the news listed on the website
	KI10	Clarity of every aspect of the website
Service interaction quality	KI11	The attractiveness of presenting information
	KIL12	Accuracy of dissemination of the use of the website
	KIL13	Ease of editing data entries on the website
	KIL14	The ease of asking for help when experiencing problems on the website
E-service quality	KIL15	Website speed in sending data
	KLE16	Website response speed
User satisfaction	KLE17	Flexibility in the stages of filling in data on the website
	KP18	The overall convenience of using the website
	KP19	The overall website security guarantee
	KP20	The overall attractiveness of the website design
	KP21	The overall website speed

### Data Analysis Technique

The analysis technique used is PLS-SEM analysis. At first, the researchers analysed the demographic data of the respondents based on gender, last education, and age. Then the researchers conducted a PLS-SEM analysis to test the outer and inner models. In the outer model, convergent validity, composite reliability, average variance extracted, and discriminant validity were tested. While in the inner model, path coefficient ( $\beta$ ), effect size ( $f^2$ ), coefficient of determination ( $R^2$ ), and T Statistics were tested.

Convergent validity testing is used to determine the validity of each relationship between indicators and their constructs. Composite reliability testing is carried out to determine the value of construct reliability. The average variance extracted testing is used to determine the convergent validity of a construct. Discriminant validity testing is used to determine reflective indicators to be a good measure of the construct. This test is carried out by looking at the cross-loading value to compare the correlation between indicators and constructs.

The path coefficient ( $\beta$ ) testing is carried out to measure the significance and strength of the relationship between constructs. Effect Size ( $f^2$ ) testing is used to see the magnitude of the influence between constructs. The coefficient of determination ( $R^2$ ) testing is carried out to see how the exogenous constructs explain the endogenous constructs. The T Statistics testing is used to test the research hypothesis by comparing the T Statistics value with the T table value.

### Results

The first analysis was carried out by calculating the distribution statistics, as shown in Table 2, which presents the profile of the respondents. The analysis results revealed that the gender distribution in this study is 50% male and 50% female. The level of education of quality assurance website users is at most undergraduate (58.33%). The dominance of users, when viewed from the age range mainly, comes from the age range of 26–45 years (63.9%).



Table 2

## Profiles of respondents

Demographic	Frequency (n = 36)	Percentage (%)
Gender		
Male	18	50
Female	18	50
Education level		
High School	11	30,56
Undergraduate	21	58,33
Graduate	3	8,33
Others	1	2,78
Age		
26-45	23	63,9
46-65	13	36,1

**Outer Model Testing**

The research model in this study was analysed using partial least squares (PLS) [24]. The observed variables are represented by 21 questions that try to capture the five latent variables. The outer model testing was done by using composite reliability (CR) to see construct reliability, convergent validity to know the validity of each relationship between indicators and their constructs through the loading value, average variance extract (AVE) to verify convergent validity, and cross loading to evaluate discriminant validity.

Table 3

## Assessment of outer model

Construct	Item	Outer loading	CR	AVE
Usability	P1	0.832	0.893	0.714
	P2	0.847		
	P3	0.866		
	P4	0.739		
Information quality	KI5	0.885	0.953	0.745
	KI6	0.832		
	KI7	0.903		
	KI8	0.803		
	KI9	0.896		
	KI10	0.850		
	KI11	0.870		
Service interaction quality	KIL12	0.724	0.904	0.703
	KIL13	0.853		
	KIL14	0.876		
	KIL15	0.891		
E-service quality	KLE16	0.932	0.928	0.865
	KLE17	0.928		
User satisfaction	KP18	0.877	0.909	0.714
	KP19	0.803		
	KP20	0.828		
	KP21	0.869		

The results of the outer model analysis in Table 3 show that the CR value for each component has exceeded the recommended value of 0.70 [25], starting from 0.893 to 0.953. Thus, the items used to characterise the structure have a good consistency. Testing the loading value on each indicator has also exceeded the recommended limit value of 0.7 [25]. This means that the construct has met the criteria. The AVE test shows that the minimum criteria of 0.5 have been met so that all constructs have met the requirements [26]. In addition, the discriminant validity test results show that each variable's correlation value is smaller than the indicator value of each variable. Based on the outer model analysis results, the research model designed has good statistical characteristics and has met the requirements.

### **Inner Model Testing**

In the inner model testing (Table 4), the research model test is carried out by taking into account the results of  $f^2$  to see the magnitude of the influence between constructs, with recommendations for  $f^2$  values of 0.35, 0.15, and 0.02, which are interpreted as large, medium, and small [27]. The results of the  $f^2$  test show that there is a relationship between constructs that have a significant influence, namely the service interaction quality on the e-service quality and the e-service quality on user satisfaction.

Table 4

Assessment of inner model

Hypothesis	Path	$\beta$	$f^2$	$R^2$	P Values	Decision
H1	Usability - > E-service quality	0.100	0.009	0.593	0.603	Unsupported
H2	Information quality - > E-service quality	-0.104	0.009	0.593	0.636	Unsupported
H3	Service interaction quality - > E-service quality	0.773	0.571	0.593	0.000	Supported
H4	E-service quality - > User satisfaction	0.742	1.222	0.550	0.000	Supported

In addition, the inner model test also considers the results of  $R^2$  with recommended values of 0.67, 0.33, and 0.19, which are interpreted as substantial, moderate, and weak [28]. The results of the  $R^2$  test show that the combined effect of usability, information quality, and service interaction quality on e-service quality is 0.593, so it is found that all exogenous constructs simultaneously affect the endogenous construct of e-service quality by 59.3% and includes a moderate model. The e-service quality construct can explain 0.550 (55%) of the changes in the user satisfaction construct, and this model is moderate.

To test the relationship between variables, the path coefficient test ( $\beta$ ) was carried out to assess the strength of the relationship between the independent variable and the dependent variable [28]. At the same time, the results of testing the research hypothesis are seen from the value of T Statistics using the bootstrap procedure [27]. In this study, the confidence level used is 95%, so the limit of inac-

curacy is  $(\alpha) = 0.05$  (5%). The results of hypothesis testing are said to be “supported” if the P Values  $< 0.05$ .

## Discussion

This section discusses the quality assurance website from a user perspective based on test results. Two variables have a positive and significant impact: service interaction quality on e-service quality (H3) and e-service quality on user satisfaction (H4). This research reveals a strong connection between service interaction quality and e-service quality. This connection is the strongest among all the other variables and is a crucial factor for user satisfaction. E-service quality is directly linked to user satisfaction, as the ultimate goal of the quality assurance online system is to provide users with an enjoyable experience.

### ***The Effect of Service Interaction Quality on E-Service Quality***

These research findings confirm Hypothesis 3, that the results show a positive correlation (0.773) between service interaction quality and e-service quality. This indicates that the service interaction quality is directly related to the e-service quality. This construct is measured to see the fulfilment of user expectations on the website, user trust in using the website, and the ease with which users communicate with website managers. Thus, the better the service interaction quality, the users feel that the e-service quality on the website for quality assurance is also getting better. This result is in line with research stating that interaction quality refers to the user’s perception of how services are delivered [29].

Good service interactions are proven to have an impact on the perceived value of users [30]. The perceived value here is an assessment of the perception of quality assurance website users regarding what is received and what is expected. This gap between expectations and what is received by users leads to the e-service quality, which is a strong predictor in measuring the extent to which the website services can meet the expectations of its users. A. Pearson et al. and H. Zameer et al. mention that the e-service quality is influenced by user characteristics [31, 32]. Other factors, such as the ease with which users communicate with website managers, also significantly affect the e-service quality. This shows that the reciprocal relationship between user characteristics and the ease of interacting with website managers as a form of service interaction impacts the e-service quality on a website.

E-service quality is seen as the main weapon for website service providers because this will allow users to continue to use these services if they trust and find it easy to interact with the services provided. In addition, e-service quality includes all stages of interaction between users and service providers, which looks at the extent to which electronic or online systems contribute to the productivity and adequacy of service provision [33]. In the context of website services, J. Carlson and A. O’Cass emphasise that e-service quality affects user attitudes toward using services [34]. Thus, website service providers of vocational school quality assurance must optimise the quality of their service interactions because this factor impacts the quality of the website electronic services.

### ***The Effect of E-Service Quality on User Satisfaction***

Based on the test results, the e-service quality construct has an influence and a positive correlation to user satisfaction of 0.742, thus supporting Hypothesis 4. The results of this study indicate that the e-service quality construct is a determinant of website user satisfaction. It can be seen from the magnitude of the influence generated by the two constructs. This is also reinforced by the results of W. C. Tsao et al. and M. Blut et al., who found that e-service quality significantly affects customer satisfaction [35, 36]. This construct measures how the e-service quality provided by the website quality assurance affects user satisfaction. Therefore, it is important for vocational school quality assurance website service providers to focus on improving the quality of their electronic services to increase their website users' satisfaction.

B. B. Holloway et al. found that e-service quality has an impact on influencing the behaviour of users to use their services because satisfaction has a close relationship with user intentions [37]. That way, user satisfaction becomes a benchmark for website service providers to improve the quality of their services because the more satisfied users are with the services provided, the more often they use the service. This is also reinforced by several studies that confirm a strong relationship between e-service quality and customer satisfaction [36, 38].

Based on the results of the study, it was concluded that users of the vocational school website for quality assurance were satisfied with the service quality. The measured e-service quality consists of usability, information quality, and service interaction quality. However, the aspect that has a direct influence on the e-service quality of the website for quality assurance is the aspect of service interaction quality. For this reason, website service providers need to optimise the quality of their websites to increase user satisfaction using their services. This is reinforced by F. A. Rasheed's & M. F. Abadi's research, which explains that user satisfaction is the primary determinant of e-service quality [39]. Hence, this shows that e-service quality is a determinant indicator of user satisfaction.

### **Conclusion**

User satisfaction in assessing the quality of vocational school website for quality assurance shows that users feel the website can help their work to report school performance achievements. The vocational school quality assurance website maps the quality of vocational schools by completing the specified instrument data. The output of the vocational school quality assurance website will show the actual state of school quality, which is then used for quality fulfilment.

The results showed that the service interaction quality significantly influences the e-service quality on the website. This shows that users feel that the website is easy to use and has assistance facilities when users experience problems on the website and the website accuracy in sending data. Likewise, there are promising findings on the e-service quality that directly affect the satisfaction of website users. Thus, they prove that users are satisfied with the quality of the website, which

is judged by the speed of website response and the flexibility of filling out data on the website. This study was conducted to identify the factors that influence user satisfaction in determining the quality of the vocational school website for quality assurance based on the user's perspective. The findings of this study relate to the use of a vocational school quality assurance website, which is the main component in improving the reporting of vocational school performance achievements.

Based on the findings, the service provider of the vocational school website for quality assurance needs to optimise the quality of their service interactions because this affects the quality of website electronic services. In addition, the service provider needs to focus on improving the quality of their e-services to increase the satisfaction of their website users. This research can provide useful guidance to scholars and practitioners to reveal which website quality factors should be considered to improve user satisfaction. In further research, different determinants from compatible variables could be selected and incorporated into the new models.

### Limitations and Future Research

The findings of this study may only apply to the unique environment of vocational schools. Conclusions should be evaluated carefully before projecting these findings to other settings, especially to other countries. The characteristics of users in other schools may have very different results from those included in this study. Another limitation is that data is collected from only one province in Indonesia. Comparative studies with other provincial vocational schools can provide more useful results. Comparisons with developed and developing countries can also provide interesting results and enhance the existing literature on the quality of school websites (online systems) for quality assurance. This study describes the determinants of the website for quality assurance that reflect the adoption and use of online systems. Therefore, both public and private educational institutions can benefit from the success of this research.

Further studies can also improve the research model by integrating other variables and trying to explain the acceptance and use of online systems better. Intrinsic and extrinsic motivation is the most promising constructs to consider. There are some theoretical implications as well. The research instruments developed, modified, and provided in this study can provide useful tools with high reliability and validity. The model proposed in this research can also explain the less studied determinants of quality assurance website that influence the adoption and use of online systems in public and private educational institutions.

### References

1. Datareportal. Digital 2020: Indonesia. Datareportal [Internet]. 2021 [cited 2022 Oct 20]. Available from: <https://datareportal.com/reports/digital-2020-indonesia>
2. Fogg B. J., Soohoo C., Danielson D., Marable L., Stanford J., Tauber E. How do people evaluate a website's credibility?: Results from a large study. In: *Conference on Designing for User Experiences*. New York; 2003. 105 p. DOI: 10.1145/997078.997097

3. Shia B. C., Chen M., Ramdanyah A. D., Wang S. Measuring customersatisfaction toward localization website by WebQual and Importance Performance Analysis (Case study on AliExpress site in Indonesia). *American Journal of Industrial and Business Management*. 2016; 6: 117–128.

4. Hidayah N. A., Subiyakto A., Setyaningsih F. Combining Webqual and Importance Performance Analysis for assessing a government website. In: *7<sup>th</sup> International Conference on Cyber and IT Service Management*; Jakarta, Indonesia. Vol. 7. New Jersey: IEEE; 2019. p. 1–6.

5. Niazi M. G., Kamran M. K. A. Evaluating Iranian state university websites using WebQEM. *The Electronic Library*. 2016; 34: 1031–1050.

6. Dean D., Grierson S. Re-envisioning reading and writing through combined-text picture books. *Journal of Adolescent & Adult Literacy*. 2010; 48 (6): 456–458.

7. Napitupulu D. Analysis of factors affecting website quality based on Webqual approach (Study Case: XYZ University). *Advanced Science Engineering Information Technology*. 2017; 7 (3): 792–798.

8. Pamungkas R. A., Alfarishi E., Aditiarna E., Mukhlisin A., Aziza R. F. A. Analisis Kualitas Website SMK Negeri 2 Sragen dengan Metode Webqual 4.0 dan IPA. *Jurnal TEKNOKOMPAK*. 2019; 13 (1): 12–17. (In Indonesian)

9. Huang Z., Benyoucef M. Usability and credibility of e-government websites. *Government Information Quarterly*. 2014; 31 (4): 584–595.

10. Lederman R., Fan H., Smith S., Chang S. Who can you trust? Credibility assessment in online health forums. *Health Policy and Technology*. 2014; 3 (1): 13–25. DOI: 10.1016/j.hlpt.2013.11.003

11. Barnes S., Vidgen R. Measuring web site quality improvements: A case study of the forum on strategic management. *Industrial Management & Data Systems*. 2003; 103 (5): 297–309.

12. Arifin S. R., Eko N., Hantono B. S. Analisis Kualitas Layanan Website Universitas Hasanuddin dengan Metode Webqual 4.0 Modifikasi. *TEKNOMATIKA*. 2015; 8 (1): 81–92. (In Indonesian)

13. Subiyakto A., Ahlan A. R., Kartiwi M., Putra S. J., Durachman Y. The user satisfaction perspectives of the information system projects. *Indonesian Journal of Electrical Engineering and Computer Science*. 2016; 4 (1): 215–223.

14. Priambodo B. 11 Masalah Pengumpulan Rapor Mutu. LPMPJATIM [Internet]. 2022 [cited 2022 Oct 25]. Available from: <https://lpmpjatim.kemdikbud.go.id/site/detailpost/11-masalah-pengumpulan-rapor-mutu> (In Indonesian)

15. Hadi S., Wijaya W. M., Suharyadi A., Hassan A., Zaki C. N. F. M. The determinant factors on user satisfaction in assessing the quality of online education management information system. In: *The 9<sup>th</sup> International Conference on Education Research, and Innovation*; Yogyakarta, Indonesia. Paris: Atlantis Press; 2022. p. 110–119.

16. Keshavarz H., Norouzi Y. Measuring a model on credibility evaluation of scientific websites: Exploring relationships and priorities. *New Review of Academic Librarianship*. 2022; 28 (3): 321–345.

17. UNESCO. Focusing resources on effective school health: A fresh start to enhancing the quality and equity of education. World Education Forum 2000, Final Report. Paris: UNESCO; 2001. 27 p.

18. Nguyen J. D., Hogue C. R. Assessing quality control: Evaluating the quality audit. *Statistical Journal of the IAOS*. 2017; 33 (2): 423–428.

19. Schomaker R. Accreditation and quality assurance in the Egyptian higher education system. *Quality Assurance in Education*. 2015; 23 (2): 149–165.

20. Ayeni A. J., Ibukun W. O. A conceptual model for school-based management operation and quality assurance in Nigerian secondary schools. *Journal of Education and Learning*. 2013; 2 (2). DOI: 10.5539/jel.v2n2p36

21. Ibrahim Y., Arshad R., Salleh D. Stakeholder perceptions of secondary education quality in Sokoto State, Nigeria. *Quality Assurance in Education*. 2017; 25 (2): 248–267.

22. Wijaya W. M. Strategic information system planning: Information systems required in vocational school models. In: *The 6<sup>th</sup> International Conference on Educational, Management, Administration and Leadership*; Bandung, Indonesia. Paris: Atlantis Press; 2016. p. 67–71.
23. Purwanto A., Asbari M., Santoso T. I. Education management research data analysis: Comparison of results between LISREL, TETRAD, GSCA, AMOS, SMARTPLS, WARPPLS, and SPSS for Small Samples. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*. 2021; 6 (2): 382–399.
24. Hair J. F., Sarstedt M., Hopkins L., Kuppelwieser G. V. Partial least squares structural equation modeling (PLS-SEM). *European Business Review*. 2014; 26 (2): 106–121.
25. Hair J. F., Black W. C., Babin B., Anderson R. E. Multivariate data analysis: A global perspective. New Jersey: Pearson Education; 2010. 800 p.
26. Henseler J., Ringle C. M., Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*. 2014; 43 (1): 115–135.
27. Sarstedt M., Ringle C. M., Hair J. F. Partial least squares structural equation modeling. In: Homberg Ch., Klarmann M., Vomberg A. (Eds.). *Handbook of market research*. Springer; 2017. p. 1–40. DOI: 10.1007/978-3-319-05542-8\_15-1
28. Chin W. W. The partial least squares approach for structural equation modeling. *Modern Methods for Business Research*. 1998; 295 (2): 295–336.
29. Lemke F., Clark M., Wilson H. Customer experience quality: An exploration in business and consumer contexts using repertory grid technique. *Journal of the Academy of Marketing Science*. 2011; 39 (6): 846–869.
30. Ranjan K. R., Sugathan P., Rossmann A. A narrative review and meta-analysis of service interaction quality: New research directions and implications. *Journal of Services Marketing*. 2015; 29 (1): 3–14.
31. Pearson A., Tadisina S., Griffin C. The role of e-service quality and information quality in creating perceived value: Antecedents to web site loyalty. *Information Systems Management*. 2012; 29 (3): 201–215.
32. Zameer H., Tara A., Kausar U., Mohsin A. Impact of service quality, corporate image and customer satisfaction towards customers' perceived value in the banking sector in Pakistan. *International Journal of Bank Marketing*. 2015; 33 (4): 442–456.
33. Parasuraman A., Zeithaml V. A., Malhotra A. ESQUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*. 2005; 7 (3): 213–233.
34. Carlson J., O'Cass A. Exploring the relationships between e-service quality, satisfaction, attitudes and behaviours in content-driven e-service web sites. *Journal of Services Marketing*. 2010; 24 (2): 112–127.
35. Tsao W. C., Hsieh M. T., Lin T. M. Y. Intensifying online loyalty! The power of website quality and the perceived value of consumer/seller relationship. *Industrial Management & Data Systems*. 2016; 116 (9): 1987–2010.
36. Blut M., Chowdhry N., Mittal V., Brock C. E-service quality: A meta-analytic review. *Journal of Retailing*. 2015; 91 (4): 679–700.
37. Holloway B. B., Wang S., Parish J. T. The role of cumulative online purchasing experience in service recovery management. *Journal of Research in Interactive Marketing*. 2005; 19 (3): 54–66.
38. Rita P., Oliveira T., Farisa A. The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*. 2019; 5 (10): e02690.
39. Rasheed F. A., Abadi M. F. Impact of service quality, trust and perceived value on customer loyalty in Malaysia services industries. *Procedia – Social and Behavioral Sciences*. 2014; 164: 298–304.

**Information about the authors:**

**Samsul Hadi** – Professor, Department of Electrical Engineering Education, Faculty of Engineering, Universitas Negeri Yogyakarta; ORCID 0000-0003-3437-2542; Yogyakarta, Indonesia. E-mail: samsul\_hd@uny.ac.id

**Widia Murni Wijaya** – Lecturer, Department of Educational Management, Faculty of Educational Sciences and Psychology, Universitas Negeri Yogyakarta; ORCID 0000-0002-5050-4392; Yogyakarta, Indonesia. E-mail: widiamw@uny.ac.id

**Rahmania Utari** – Lecturer, Department of Educational Management, Faculty of Educational Sciences and Psychology, Universitas Negeri Yogyakarta; ORCID 0000-0003-1182-3769; Yogyakarta, Indonesia. E-mail: rahmania\_utari@uny.ac.id

**Wiwik Wijayanti** – Associate Professor, Department of Educational Management, Faculty of Educational Sciences and Psychology, Universitas Negeri Yogyakarta; ORCID 0000-0001-8535-9001 Yogyakarta, Indonesia. E-mail: wiwik\_wijayanti@uny.ac.id

**Cepi Safruddin Abdul Jabar** – Associate Professor, Department of Educational Management, Faculty of Educational Sciences and Psychology, Universitas Negeri Yogyakarta; ORCID 0000-0003-1876-2866; Yogyakarta, Indonesia. E-mail: cepi\_safruddin@uny.ac.id

**Contribution of the authors.** The authors have made an equal contribution to the study and the preparation of the article.

**Conflict of interest statement.** The authors declare that there is no conflict of interest.

Received 05.02.2023; revised 08.07.2023; accepted for publication 02.08.2023.

The authors have read and approved the final manuscript.

**Информация об авторах:**

**Хади Самсул** – профессор кафедры электротехнического образования инженерного факультета Государственного университета Джокьякарты; ORCID 0000-0003-3437-2542; Джокьякарта, Индонезия. E-mail: samsul\_hd@uny.ac.id

**Виджая Видия Мурни** – преподаватель кафедры управления образованием факультета образовательных наук и психологии Государственного университета Джокьякарты; ORCID 0000-0002-5050-4392; Джокьякарта, Индонезия. E-mail: widiamw@uny.ac.id

**Утари Рахмания** – преподаватель кафедры управления образованием факультета образовательных наук и психологии Государственного университета Джокьякарты; ORCID 0000-0003-1182-3769; Джокьякарта, Индонезия. E-mail: rahmania\_utari@uny.ac.id

**Виджаянти Вивик** – доцент кафедры управления образованием факультета образовательных наук и психологии Государственного университета Джокьякарты; ORCID 0000-0001-8535-9001 Джокьякарта, Индонезия. E-mail: wiwik\_wijayanti@uny.ac.id

**Джабар Чепи Сафрудин Абдул** – доцент кафедры управления образованием факультета образовательных наук и психологии Государственного университета Джокьякарты; ORCID 0000-0003-1876-2866; Джокьякарта, Индонезия. E-mail: cepi\_safruddin@uny.ac.id

**Вклад соавторов.** Авторы внесли равный вклад в реализацию исследования и подготовку публикации.

**Информация о конфликте интересов.** Авторы заявляют об отсутствии конфликта интересов.

Статья поступила в редакцию 05.02.2023; поступила после рецензирования 08.07.2023; принята к публикации 02.08.2023.

Авторы прочитали и одобрили окончательный вариант рукописи.



**Información sobre los autores:**

**Samsul Hadi:** Profesor, Departamento de Educación Eléctrica, Facultad de Ingeniería, Universidad Estatal de Yogyakarta; ORCID 0000-0003-3437-2542; Yogyakarta, Indonesia. Correo electrónico: samsul\_hd@uny.ac.id

**Widia Murni Wijaya:** Profesor, Departamento de Gestión Educativa, Facultad de Ciencias de la Educación y Psicología, Universidad Estatal de Yogyakarta; ORCID 0000-0002-5050-4392; Yogyakarta, Indonesia. Correo electrónico: widiamw@uny.ac.id

**Rahmania Utari:** Profesor, Departamento de Gestión Educativa, Facultad de Ciencias de la Educación y Psicología, Universidad Estatal de Yogyakarta; ORCID 0000-0003-1182-3769; Yogyakarta, Indonesia. Correo electrónico: rahmania\_utari@uny.ac.id

**Wiwik Wijayanti:** Profesor Asociado, Departamento de Gestión Educativa, Facultad de Ciencias de la Educación y Psicología, Universidad Estatal de Yogyakarta; ORCID 0000-0001-8535-9001; Yogyakarta, Indonesia. Correo electrónico: wiwik\_wijayanti@uny.ac.id

**Cepi Safruddin Abdul Jabar:** Profesor Asociado, Departamento de Gestión Educativa, Facultad de Ciencias de la Educación y Psicología, Universidad Estatal de Yogyakarta; ORCID 0000-0003-1876-2866; Yogyakarta, Indonesia. Correo electrónico: cepi\_safruddin@uny.ac.id

**Contribución de coautoría.** Los autores hicieron una contribución por igual al trabajo de investigación y publicación.

**Información sobre conflicto de intereses.** Los autores declaran no tener conflictos de intereses.

El artículo fue recibido por los editores el 05/02/2023; recepción efectuada después de la revisión el 08/07/2023; aceptado para su publicación el 02/08/2023.

Los autores leyeron y aprobaron la versión final del manuscrito.