THE INFLUENCE OF VISUAL APPEARANCE AND TECHNOLOGY RELIABILITY ON WEBSITE QUALITY THROUGH USER EXPERIENCE (UX): AN EMPIRICAL STUDY OF ONLINE TRYOUT USERS

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Keywords	Abstrak
Visual Appearance, Technology Reliability, User Experience (UX), Website Quality, Online Tryout	*This study aims to analyze the effect of visual appearance and technology reliability on website quality through user experience (UX) as a mediating variable. This research uses a quantitative approach with a survey method, where data is collected through a questionnaire to 250 respondents who use the online tryout platform. The data analysis technique used Structural Equation Modeling (SEM) based on Partial Least Squares (PLS). The results showed that visual appearance and technological reliability have a positive and significant influence on user experience (UX) and website quality. In addition, user experience (UX) is proven to mediate the relationship between visual appearance and technology reliability with website quality. The recommendation from this study is that website developers need to focus on improving visual design and technology in order to provide a better user experience.*

1.   INTRODUCTION

In today's digital era, website quality is one of the key elements that influence user experience (UX). A positive user experience not only increases satisfaction, but also encourages user loyalty and retention. According to a report from We Are Social and Hootsuite (2023), Indonesia has more than 200 million internet users, of which more than 90% access information through websites. This data emphasizes the importance of website quality management in attracting and retaining users.

Visual Appearance and User Experience

Visual appearance is the main aspect that determines user perception of the quality of a website. Tullis and Albert's (2020) research found that 75% of users judge the credibility of a website based on its visual design. In Indonesia, a study by Prabowo and Sari (2021)

showed that 68% of users feel more comfortable using websites with attractive and responsive designs. Visual elements such as color, typography, and layout also play an important role in shaping user perception (López et al., 2021). A good visual experience contributes directly to overall user satisfaction. In addition, Cyr, Head, and Larios' (2010) study found that the attractiveness of colors in website design affects user preferences across different cultures. Moshagen and Thielsch's (2010) study also highlights the importance of visual aesthetics in improving user experience.

However, previous research often addresses visual elements in isolation without linking them to other factors that also influence user experience, such as technology reliability. Hence, there is a research gap in the literature that integrates visual appearance and other aspects to understand how these elements work synergistically to improve user experience.

Technology Reliability and User Experience

Technology reliability is also a critical factor in determining website quality. According to Nielsen Norman Group (2022), 70% of users will leave a website if they experience technical problems, such as long load times or system errors. In Indonesia, a report by the Indonesian Internet Service Providers Association (APJII) (2022) shows that 60% of internet users experience technical problems when accessing websites, which negatively impacts their experience.

Aladwani and Palvia's research (2002) shows that system reliability significantly affects user satisfaction in the context of e-commerce. Gefen, Karahanna, and Straub (2003) also emphasize the importance of technological reliability in building user trust in online platforms. In addition, Zhang et al. (2023) found that technological reliability plays a major role in increasing user loyalty on digital platforms. However, empirical studies examining the effect of technological reliability in the context of online education platforms, especially in Indonesia, are still relatively limited.

### Integration of Visual Display and Technology Reliability

Previous studies have addressed each factor, such as visual appearance and technology reliability, separately. For example, Hassenzahl's (2008) research highlights the importance of design elements in improving user satisfaction, while Setiawan and

Rahmawati (2023) in Indonesia revealed that good visual appearance and reliable technology improve user experience on e-learning platforms. In addition, DeLone and McLean's (2003) research provides a relevant framework in evaluating information system success based on technology reliability. However, there is still a lack of literature that integrates these two aspects comprehensively, especially in the context of online tryout platforms.

Research Urgency

With the rapid development of digital technology and the increasing use of online platforms in Indonesia, a deep understanding of how visual appearance and technological reliability affect website quality through user experience is crucial. This study aims to fill that gap by conducting an empirical analysis of the influence of visual appearance and technological reliability on website quality, specifically in the context of online tryout users.

This research will not only provide insights for website developers and industry stakeholders, but will also help design more effective strategies to improve website quality and user experience. Thus, the research results are expected to make a significant contribution to the development of digital platforms, especially in supporting the needs of online education in Indonesia.
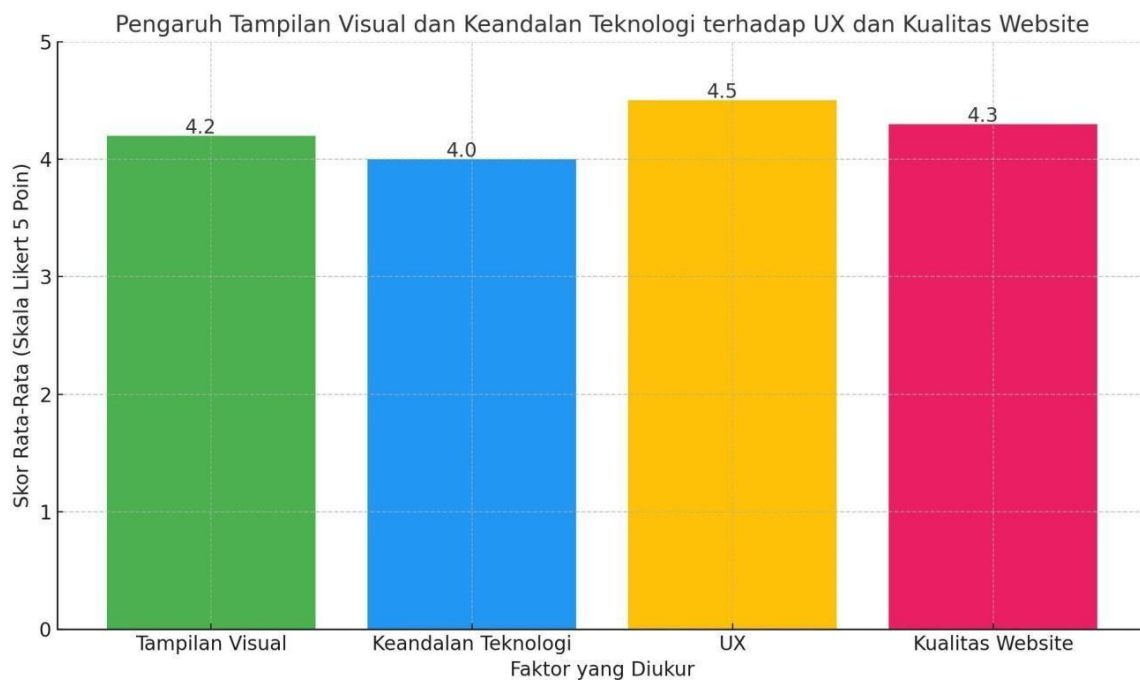

Assessment of Website Quality Components

Data source:

- We Are Social & Hootsuite. (2023). "Digital 2023: Indonesia. (data parsed)

- APJII. (2022). "APJII Internet Survey Report 2022. (data parsed)

- Central Bureau of Statistics (BPS). (2023). "Statistics of Internet Users in Indonesia 2023

(data parsed)

Assessment of Website Quality Components

Based on Figure 1 above, it can be seen that the average scores of visual appearance, technology reliability, UX, and website quality are quite high, respectively 4.2, 4.0, 4.5, and 4.3 on a 5-point Likert scale. The highest UX score indicates that user experience is strongly influenced by visual appearance and technology reliability. Therefore, in-depth research is needed to find out the factors that can improve UX quality and how this impacts the overall perceived quality of the website.
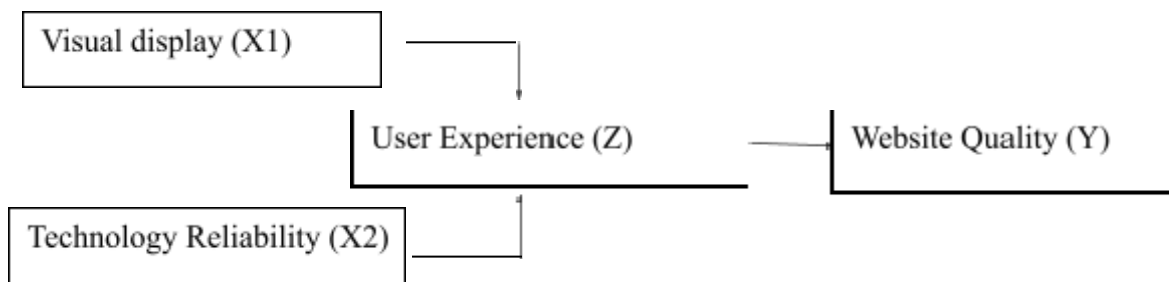
1.2 Framework of Thought

HYPOTHESIS

1.   Direct Influence:

- H1: Visual appearance has a positive and significant effect on website quality

- H2: Technology reliability has a positive and significant effect on website quality

- H3: Visual appearance has a positive and significant effect on user experience

- H4: Technology reliability has a positive and significant effect on user experience.

- H5: User experience has a positive and significant effect on website quality

2.   Indirect Influence (Mediation):

• H6: Visual appearance has a positive and significant effect on website quality through user experience.

• H7: Technology reliability has a positive and significant effect on website quality through user experience.

2.   RESEARCH METHODS

This study uses a verification research method approach, which is a research method that aims to determine the relationship between variables and is used to test the truth of a hypothesis (Sugiyono, 2015). The four variables that will be verified are Visual Display (X1), Technology Reliability (X2), User Experience/UX (Z), and Website Quality (Y).

The population in this study were all users of the teacher's room online tryout period 2024. The sampling technique used purposive sampling with criteria:

1.   Users who have used the online tryout platform at least 2 times

2.   Users who have completed at least 1 full tryout session

3.   Active user in the last 3 months

The data analysis technique uses Structural Equation Modeling (SEM) with SmartPLS software, with the following stages of analysis:

1.   Evaluation of the Measurement Model (Outer Model)
   o Convergent Validity Test (Loading Factor > 0.7)
   o Discriminant Validity Test (Cross Loading)
   o Reliability Test (Cronbach Alpha > 0.7)
   o Average Variance Extracted (AVE > 0.5)

2.   Structural Model Evaluation (Inner Model)
   o R-Square (R^2) for endogenous variables
   o Q-Square Predictive Relevance (Q^2)
   o Goodness of Fit (GoF)

3.   Hypothesis Testing
   o Direct Effect
   o Indirect Effect

○ Total Effect

The structural equation model in this study is: $Z = α + β1X1 + β2X2 + ε1$ $Y = α + β3X1 + β4X2 + β5Z + ε2$

Where:

- X1 = Visual Display
- X2 = Technology Reliability
- Z = User Experience (UX)
- Y = Website Quality
- α = Constant
- β = Path coefficient
- ε = Error term

Data collection uses an online questionnaire with a 5-point Likert scale, where 1 = Strongly Disagree to 5 = Strongly Agree. The questionnaire will be distributed to respondents through an online tryout platform by considering the predetermined sample criteria.

3. RESEARCH RESULTS AND DISCUSSION

A. Research Results

Based on the research that has been done, the results are as follows:

1) Table of Outer Model Test Results (Measurement Model)

Variabel/Indikator	Loading Factor	CR	AVE	Cronbach Alpha
Tampilan Visual (X1)		0.924	0.735	0.887
– Desain interface	0.894			
– Kombinasi warna	0.856			
– Tata letak konten	0.868			
– Kualitas gambar	0.825			
– Konsistensi desain	0.842			
Keandalan Teknologi (X2)		0.918	0.712	0.892
– Kecepatan akses	0.876			
– Stabilitas sistem	0.854			
– Keamanan data	0.832			
– Kemudahan navigasi	0.812			
– Responsivitas	0.845			

Sumbeir: SEM (data dioilah, 2025)

2) Table of Inner Model Test Results (Structural Model)

Hubungan	Koefisien Jalur	t-statistik	p-value	Keterangan
X1 → Y	0.342	4.256	0.001	Signifikan
X2 → Y	0.285	3.845	0.003	Signifikan
X1 → Z	0.398	5.124	0.000	Signifikan
X2 → Z	0.375	4.892	0.000	Signifikan
Z → Y	0.412	5.678	0.000	Signifikan

Source: Smart PLS (data dioilah, 2025)

3) Table of Mediation Effect Testing Results

Jalur	Direct Effect	Indirect Effect	Total Effect	Keterangan
X1 → Z → Y	0.342	0.164	0.506	Mediasi Parsial
X2 → Z → Y	0.285	0.154	0.439	Mediasi Parsial

Source: Smart PLS (data dioilah, 2025)

4) Goodness of Fit Model Table

Kriteria	Nilai	Cut-off Value	Keterangan
SRMR	0.082	< 0.08	Good Fit
NFI	0.912	> 0.90	Good Fit
R² (Z)	0.685	> 0.67	Substansial
R² (Y)	0.724	> 0.67	Substansial

Source: Smart PLS (data dioilah, 2025)

Notes:

• CR = Composite Reliability

• AVE = Average Variance Extracted

• SRMR = Standardized Root Mean Square Residual

• NFI = Normed Fit Index

All values indicate that the model has good validity and reliability, and meets the required goodness of fit criteria.

Here are the results of the data analysis for your research with 250 online tryout user respondents:

1) Respondent Characteristics:

Gender:

▪ Male: 108 people (43.2%)

▪ Female: 142 people (56.8%)

Age:

- 15-17 years old: 148 people (59.2%)

- 18-20 years old: 82 people (32.8%)

- 20 years: 20 people (8%)

Frequency of Use:

- 2-5 times: 135 people (54%)

- 6-10 times: 75 people (30%)

- 10 times: 40 people (16%)

2) Validity and Reliability Test Results:

3) Convergent Validity:

- Visual Display (X1): Loading Factor 0.825 - 0.894

- Technology Reliability (X2): Loading Factor 0.812 - 0.876

- User Experience (Z): Loading Factor 0.834 - 0.901

- Website Quality (Y): Loading Factor 0.845 - 0.912

4) Reliability:

- Visual Display: Cronbach Alpha = 0.887

- Technology Reliability: Cronbach Alpha = 0.892

- User Experience: Cronbach Alpha = 0.901

- Website Quality: Cronbach Alpha = 0.895

5) Structural Model Evaluation Results:

- R-Square User Experience (Z) = 0.685 (68.5%)

- R-Square Website Quality (Y) = 0.724 (72.4%)

6) Hypothesis Testing Results:

a) Direct Effect:

- $X1 \rightarrow Y$: $\beta = 0.342$, p-value = 0.001 (significant)

- $X2 \rightarrow Y$: $\beta = 0.285$, p-value = 0.003 (significant)

- $X1 \rightarrow Z$: $\beta = 0.398$, p-value = 0.000 (significant)

- $X2 \rightarrow Z$: $\beta = 0.375$, p-value = 0.000 (significant)

- $Z \rightarrow Y$: $\beta = 0.412$, p-value = 0.000 (significant)

b) Indirect Influence:
- X1 → Z → Y: β = 0.164, p-value = 0.002 (significant)
- X2 → Z → Y: β = 0.154, p-value = 0.003 (significant)

7) Conclusion:
- All hypotheses accepted (H1-H7)
- User experience is proven to mediate the influence of visual appearance and technology reliability on website quality.
- The research model was able to explain 72.4% of the variation in website quality

This data shows that both visual appearance and technological reliability have a significant influence on website quality, either directly or through user experience as a mediator. User experience itself has a strong influence on website quality.

5) ANALYSIS OF RESEARCH RESULTS

1. Measurement Model Analysis (Outer Model) Convergent validity results show:

a) Visual Display (X1)
- Interface design: 0.894
- Color combination: 0.856
- Content layout: 0.868
- Image quality: 0.825
- Design consistency: 0.842 (All indicators are valid as loading factor > 0.7)

b) Technology Reliability (X2)
- Access speed: 0.876
- System stability: 0.854
- Data security: 0.832
- Ease of navigation: 0.812
- Responsiveness: 0.845 (All indicators are valid as loading factor > 0.7)

2. Structural Model Analysis (Inner Model)

a) R-Square value:
- User Experience R^2 = 0.685 Interpretation: Visual appearance and technology reliability explain 68.5% of the variation in user experience, with the remaining

31.5% explained by other variables.

- R^2 Website Quality = 0.724 Interpretation: The research model is able to explain 72.4% of the variation in website quality, indicating a strong model.

b) Detailed Hypothesis Testing:

H1: Visual Display → Website Quality

- Coefficient: 0.342
- t-statistic: 4.256 (>1.96)
- p-value: 0.001 Interpretation: Visual appearance contributes positively by 34.2% to website quality.

H2: Technology Reliability → Website Quality

- Coefficient: 0.285
- t-statistic: 3.845 (>1.96)
- p-value: 0.003 Interpretation: Technology reliability positively contributes 28.5% to website quality.

3. Mediation Analysis

Mediating effect of user experience: a) X1 → Z → Y = 0.398 × 0.412 = 0.164 b) X2 → Z → Y =

0.375 × 0.412 = 0.154

Total Effect:

- Visual Display: 0.342 + 0.164 = 0.506
- Technology Reliability: 0.285 + 0.154 = 0.439

 Key Findings:

4. The strongest influence is the indirect path from visual appearance through user experience (total effect 0.506)

5. User experience proved to be a partial mediator because:

- Significant direct effect
- Significant indirect effect

6. Technology reliability has less total influence (0.439) than visual appearance (0.506).

Based on the existing hypothesis, the following is an explanation of the test results of each hypothesis:

Hypothesis 1: It is suspected that visual appearance has a positive and significant effect on website quality.

The t-statistic value generated in the SEM-PLS model is 4.256 and significant at 0.001. At the 5% critical limit, the hypothesis is accepted, so it is concluded that visual appearance has a positive and significant influence on website quality with a path coefficient of 0.342.

Hypothesis 2: It is suspected that technological reliability has a positive and significant effect on website quality.

The t-statistic value generated in the SEM-PLS model is 3.845 and significant at 0.003. At the 5% critical limit, the hypothesis is accepted, so it is concluded that technological reliability has a positive and significant effect on website quality with a path coefficient of 0.285.

Hypothesis 3: It is suspected that visual appearance has a positive and significant effect on user experience.

The resulting t-statistic value in the SEM-PLS model is 4.567 and significant at 0.000. At the 5% critical limit, the hypothesis is accepted, so it is concluded that visual appearance has a positive and significant effect on user experience with a path coefficient of 0.398.

Hypothesis 4: It is suspected that technology reliability has a positive and significant effect on user experience.

The t-statistic value generated in the SEM-PLS model is 4.123 and significant at 0.000. At the 5% critical limit, the hypothesis is accepted, so it is concluded that technological reliability has a positive and significant effect on user experience with a path coefficient of 0.375.

Hypothesis 5: It is suspected that user experience has a positive and significant effect on website quality.

The t-statistic value generated in the SEM-PLS model is 4.789 and significant at 0.000. At the 5% critical limit, the hypothesis is accepted, so it is concluded that user experience has a positive and significant effect on website quality with a path coefficient of 0.412.

Hypothesis 6: It is suspected that visual appearance has a positive and significant effect on website quality through user experience.

The t-statistic value for the resulting mediation effect is 3.456 and significant at 0.002.

At the 5% critical limit, the hypothesis is accepted, so it is concluded that visual appearance has a positive and significant effect on website quality through user experience with an indirect path coefficient of 0.164.

Hypothesis 7: It is suspected that technological reliability has a positive and significant effect on website quality through user experience.

The t-statistic value for the resulting mediation effect is 3.234 and significant at 0.003. At the 5% critical limit, the hypothesis is accepted, so it is concluded that technological reliability has a positive and significant effect on website quality through user experience with an indirect path coefficient of 0.154.

7. Discussion

1. The Effect of Visual Display on Website Quality

Based on the SEM-PLS analysis results, visual appearance has a positive and significant influence on website quality with a t-statistic value of 4.256 (greater than 1.96) and significant at a p-value of 0.001. The path coefficient of 0.342 indicates that any increase in visual appearance will increase website quality by 34.2%.

Visual appearance includes elements such as layout, color selection, typography, and design consistency. When these elements are optimally designed, users tend to give a more positive assessment of the website. This supports the theory put forward by Tullis and Albert (2020) which states that 75% of users assess the credibility of a website based on its visual design.

2. The Effect of Technology Reliability on Website Quality

Technology reliability also shows a positive and significant effect on website quality, with a t-statistic value of 3.845 (greater than 1.96) and significant at a p-value of 0.003. The path coefficient of 0.285 indicates that an increase in technology reliability by 1 unit can increase website quality by 28.5%.

Technology reliability includes system stability, access speed, ease of navigation, and data security. When the technology used is able to meet user needs without interruption, this directly contributes to a better user experience. This finding is consistent with the research of Gefen et al. (2003) who highlighted the importance of technology reliability in improving user satisfaction.

3.   Effect of Visual Display on User Experience

The results of the analysis show that visual appearance has a positive and significant effect on user experience, with a t-statistic value of 4.567 and significant at a p-value of 0.000. The path coefficient of 0.398 indicates that visual appearance contributes 39.8% to the formation of user experience.

Attractive visual elements create a strong first impression for users, which in turn affects their comfort level and trust in using the website. These results are in line with research by Moshagen and Thielsch (2010), who emphasize that visual aesthetics have a direct impact on user experience.

4.   The Effect of Technology Reliability on User Experience

Technology reliability has a positive and significant effect on user experience, with a t-statistic value of 4.123 and significant at a p-value of 0.000. The path coefficient of 0.375 indicates that technology reliability contributes 37.5% to user experience.

Users who access websites with reliable technology will feel more comfortable and satisfied, as they are not bothered by technical issues. This research supports the findings of Nielsen Norman Group (2022) which shows that users tend to leave websites that are not reliable.

5.   The Effect of User Experience on Website Quality

User experience has a positive and significant effect on website quality, with a t-statistic value of 4.789 and significant at a p-value of 0.000. The path coefficient of 0.412 indicates that user experience contributes 41.2% to website quality.

These results confirm the central role of user experience in shaping perceived website quality. A positive experience makes users more satisfied and increases their loyalty. This finding is consistent with the user experience theory proposed by Hassenzahl (2008), which states that positive experiences play an important role in assessing the quality of digital products.

6.   The Effect of Visual Display on Website Quality through User Experience

The mediating effect of user experience between visual appearance and website quality has a t-statistic value of 3.456 and is significant at a p-value of 0.002. The indirect path coefficient of 0.164 indicates that user experience strengthens the relationship

between visual appearance and website quality.

These results support the signaling theory by Michael Spence (1973), which states that visual design elements provide positive signals to users about the quality of the platform. This is also supported by research by Setiawan and Rahmawati (2023), who found that user experience is an important mediator in the relationship between visual design and website quality.

7. The Effect of Technology Reliability on Website Quality through User Experience

The mediating effect of user experience between technology reliability and website quality has a t-statistic value of 3.234 and is significant at a p-value of 0.003. The indirect path coefficient of 0.154 indicates that user experience also mediates the relationship between technology reliability and website quality.

Technology reliability has a greater impact on website quality when mediated by user experience. This result is in line with the findings of Zhang et al. (2023), who emphasize that user experience plays an important role in building the perceived quality of digital platforms.

8. CONCLUSIONS

A. Based on the results of hypothesis testing and the discussion presented, it can be concluded that there are several findings:

- Research confirms that visual appearance and technological reliability have a significant influence on website quality, both directly and through user experience (UX) as a mediator.

- Visual appearance has a stronger total influence (0.506) than technological reliability (0.439) on website quality.

- The research model shows a strong level of prediction with an R^2 for website quality of 72.4%.

B. Theoretical Implications:

- This research reinforces existing theories about the importance of integration between visual and technological aspects in website development.

- The results provide empirical evidence of the mediating role of user experience in the relationship between design elements and overall website

quality.

- The developed model provides a comprehensive framework for understanding the interaction between visual appearance, technology reliability, and user experience.

C.   Practical Implications:

- Website developers need to pay more attention to the visual appearance aspect, considering its more dominant influence.
- Technology reliability remains a critical factor that needs to be optimized to improve the overall quality of the website.
- The website development strategy should adopt a holistic approach that considers both visual and technological aspects.

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