Vol. 8, No. 1, February 2026

Journal of Information Systems and Informatics

Published By Asosiasi Doktor Sistem Informasi Indonesia

Evaluating Pinterest User Experience and Usability Using AttrakDiff and PLS-SEM

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Received:
November 8, 2025
Revised:
January 12, 2026
Accepted:
January 27, 2026
Published:
February 13, 2026

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DOI:
10.63158/journalisi.v8i1.1408

Abstract. The rapid development of visual platforms such as Pinterest necessitates a comprehensive understanding of how functional and emotional aspects jointly influence users' perception and engagement. This research addresses the gap in user experience (UX) evaluation of visually rich applications by examining the effects of Pragmatic Quality, Hedonic Quality-Stimulation, and Hedonic Quality Identity on the perceived Attractiveness of the Pinterest application. A quantitative approach was employed using the 28-item AttrakDiff instrument, based on data collected from a final sample of 524 valid respondents, predominantly aged 18–25 years, and using Pinterest several times a week. The data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the aid of SmartPLS to examine the relationships among latent variables. The findings demonstrate that the structural model exhibits a high level of explanatory capability, with an R^2 value of 0.684. With all three UX dimensions exerting positive and statistically significant effects on Attractiveness. PQ shows the strongest influence (path coefficient = 0.457), followed by HQS (0.391) and HQI (0.112). These findings confirm that functional usability remains the primary driver of attractiveness on Pinterest, while hedonic qualities play a complementary role in enhancing user experience. Practically, this research suggests that designers and developers of visual platforms should prioritize efficient functionality while maintaining stimulating and identity-supporting elements to improve overall user appeal.

Keywords: User Experience (UX), Usability, AttrakDiff, Pragmatic Quality, Hedonic Quality, PLS-SEM

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1. INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed the way individuals access information and engage in online activities [1]. The widespread adoption of mobile devices and internet-based applications has increased users' reliance on digital platforms for various daily activities, including communication, entertainment, and the search for visual inspiration [2]. As competition among digital applications intensifies, platforms increasingly emphasize visually appealing interfaces and intuitive user experiences to attract and retain users [3]. Consequently, understanding how interface quality and usability influence user perception and satisfaction has become a critical concern in user experience (UX) research [4].

Pinterest is a visual-based digital platform designed for discovering, saving, and sharing ideas across diverse domains such as interior design, fashion, and creative project planning [5]. Its interface prioritizes visual aesthetics, content organization, and navigational simplicity to deliver an engaging and enjoyable user experience [6]. Due to its strong emphasis on visual content and inspiration-driven interaction, Pinterest represents a highly relevant context for examining usability and UX, which encompasses both functional effectiveness and emotional satisfaction [7], [8].

To comprehensively evaluate user experience, this research adopts the AttrakDiff method, which captures both pragmatic and hedonic dimensions of interaction. Specifically, the research measures Pragmatic Quality, Hedonic Quality-Stimulation, Hedonic Quality-Identity, and Attractiveness (ATT), enabling an integrated assessment of functional usability and emotional appeal [9], [10]. The data are analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS, which is particularly appropriate for evaluating complex interrelationships among latent constructs and accommodating non-normal data distributions [11].

Although previous studies have widely applied AttrakDiff to evaluate user experience across various digital products, most research has focused on general applications or different interaction contexts. There remains a limited number of studies that apply the AttrakDiff framework specifically to visually rich platforms such as Pinterest, particularly those that employ PLS-SEM to quantitatively examine the relative effects of PQ, HQS,

and HQI on perceived Attractiveness. As a result, empirical evidence explaining which UX dimensions most strongly shape user perceptions of attractiveness in inspiration-oriented platforms is still insufficient.

Accordingly, this research seeks to fill the identified research gap by integrating the AttrakDiff evaluation framework with PLS-SEM analysis to investigate the combined and relative influence of PQ, HQS, and HQI on Attractiveness within the Pinterest application. This research offers three principal contributions, the utilization of a large sample size to strengthen the robustness and generalizability of the results, the implementation of latent construct modeling to systematically analyze the structural relationships among user experience dimensions, and the provision of practical insights for UX designers and developers through the identification of priority UX dimensions that should be emphasized to enhance the appeal of visually oriented digital platforms.

2. METHODS

This research adopts a quantitative methodology employing the AttrakDiff instrument developed by Hassenzahl as a tool to measure user experience perceptions through bipolar word pairs [12]. The research method comprises several analytical stages that are carried out systematically, beginning with instrument development, data collection, data processing, and model evaluation and hypothesis testing using the PLS-SEM approach. These stages are intended to offer a comprehensive understanding of an application's pragmatic and hedonic attributes as perceived by users [13].

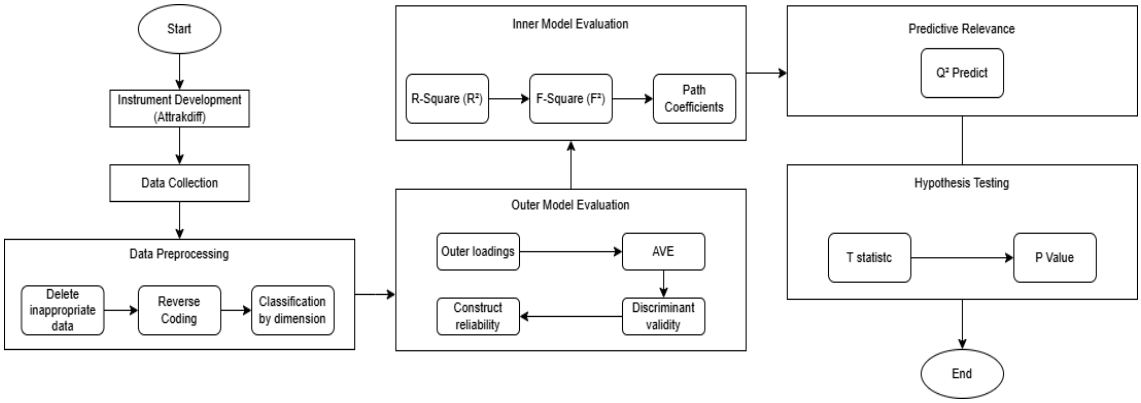

Figure 1. Research Flow

2.1. Development of the AttrakDiff Instrument

The research instrument was designed based on the AttrakDiff 28 format, which consists of 28 bipolar adjective pairs [14]. Each pair serves to measure one of the four primary dimensions, namely PQ, HQS, HQI, and ATT [15]. The instrument uses a 7-point Likert scale that represents the user's position between two opposite adjective meanings [16]. The development of the instrument was carried out by ensuring that each item adheres to the original AttrakDiff guidelines and maintains the psychometric integrity of the instrument.

In this research, the AttrakDiff questionnaire was administered in Indonesian to ensure clarity and comprehension among respondents. Therefore, the original English version of the AttrakDiff instrument was translated into Indonesian prior to data collection. The translation process followed a back-translation procedure, whereby the items were initially translated from English into Indonesian and then independently translated back into English. A comparison between the original and back-translated versions was subsequently conducted to ensure semantic and conceptual consistency across all items. This approach was implemented to reduce potential translation bias and to maintain the validity and reliability of the instrument within the local research setting.

2.2. Data Collection

The next stage of the research was data collection, which was conducted through the distribution of an online questionnaire developed based on the AttrakDiff method. The respondents were selected using clearly defined inclusion criteria to ensure that the data collected were both relevant and reliable. Specifically, the respondents were required to be active users of the Pinterest application residing in Indonesia, have prior experience using Pinterest for purposes such as searching for inspiration, ideas, or visual references, and be willing to complete the questionnaire honestly based on their personal usage experience.

The questionnaire was distributed through an online platform to enhance accessibility and reach a broader range of participants. In addition to the AttrakDiff items, the questionnaire gathered fundamental demographic data, including gender, age, and frequency of Pinterest usage. This demographic information was gathered to provide contextual understanding of the respondent profile and to support the interpretation of

user experience evaluation results. The data collected during this stage served as the foundation for subsequent analysis and were screened to ensure that the minimum sample size required for representativeness was achieved [17].

2.3. Data Preprocessing

Prior to performing further analysis, the collected dataset was subjected to a preprocessing phase to ensure data validity and consistency. During this phase, several important steps were carried out:

1) Data Cleaning

Incomplete responses, duplicate entries, and submissions that failed to satisfy the predefined respondent inclusion criteria were removed during the data cleaning process to maintain the overall quality of the dataset [18]. In addition, responses exhibiting logically inconsistent answer patterns were identified and excluded. Logically inconsistent patterns were defined as responses that demonstrated irregular or implausible answering behavior, such as extremely low response variability across items, contradictory responses to conceptually related bipolar adjective pairs, or response patterns indicating insufficient attention to item content. These criteria were applied to ensure that the retained data reflected meaningful and reliable user evaluations suitable for subsequent statistical analysis.

2) Reverse Coding

Several items in the AttrakDiff questionnaire are formulated as bipolar adjective pairs with directions opposite to the constructs being measured. Therefore, a reverse-coding procedure was applied to these items to ensure consistency in the measurement direction across all indicators [19]. This process aims to guarantee that higher values consistently represent more positive evaluations of the measured constructs. Reverse coding was implemented prior to the main analysis to prevent measurement bias and misinterpretation of results, as well as to maintain the accuracy of dimensional and construct analysis within the PLS-SEM framework.

3) Classification of Data by Dimension

Each questionnaire item was grouped according to its corresponding dimension PQ, HQS, HQI, and ATT, to facilitate subsequent statistical analysis. This stage ensures that each

construct is represented by appropriate indicators and meets the requirements for analysis using PLS-SEM [20]. The classification of items followed the indicator structure proposed by Schrepp, which has been widely validated and adopted in previous AttrakDiff-based studies. This mapping was selected to ensure theoretical consistency, preserve the conceptual meaning of each construct, and enable meaningful comparison with prior user experience research.

2.4. Outer Model Evaluation

The evaluation of the outer model was performed to verify that the indicators sufficiently established both validity and reliability in representing their corresponding constructs [21]. The analysis was performed using the PLS-SEM approach, which is recommended for predictive models and exploratory research with reflective indicators. The evaluation included the following components:

1) Outer Loadings

   Outer loadings were employed to evaluate the extent of the contribution of every indicator toward its specific construct. Loading values of 0.70 or higher suggest that the indicator sufficiently represents the underlying construct [22].

2) Average Variance Extracted (AVE)

   Convergent validity was evaluated using the AVE criterion. A construct is considered to adequately explain more than 50% of the variance of its indicators when the AVE values reach or exceed 0.50 [23].

3) Discriminant validity

   Discriminant validity was evaluated using the Heterotrait–Monotrait Ratio (HTMT) criterion. This assessment confirms that each construct is empirically distinct and does not represent the same conceptual variable as other constructs [24].

4) Construct Reliability

   Construct reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR). High CR values (≥ 0.70) indicate that the indicators exhibit strong internal consistency within their construct [25].

2.5. Inner Model Evaluation

Once the outer model satisfied the established criteria, the analysis proceeded to assess the inner model in order to examine the relationships among the constructs. The inner model assessment included the following components:

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1) R-Square (R^2)

The R^2 values indicates the proportion of variance in the endogenous construct that is explained by the combined influence of its antecedent constructs. Depending on the research context, R^2 values can be categorized as weak, moderate, or strong [26].

2) F-Square (F^2)

The effect size (f^2) reflects the strength of an exogenous construct's influence on an endogenous construct by evaluating changes in the R^2 values when a particular predictor is included or removed from the model, thereby offering insight into its practical significance [27].

3) Path Coefficient

Path coefficients quantify both the intensity and the nature of the connections established between the different constructs within the structural model framework. These coefficients serve as the basis for determining whether one variable influences another [28].

2.6. Predictive Relevance of the Model

Predictive relevance (Q^2) is a PLS-SEM evaluation metric employed to determine the model's ability to accurately predict the values of endogenous constructs beyond the sample data. Q^2 reflects how well the structural model can reconstruct observed values compared to a naive benchmark, such as predicting the mean values. A Q^2 value above zero signifies that the model demonstrates predictive relevance, indicating it is capable of generating meaningful and reliable predictions rather than merely fitting the sample data [29]. In recent PLS-SEM applications, Q^2 has been emphasized as an important complement to explanatory indicators such as R^2 and effect size (f^2), as it provides insight into the model's predictive performance beyond the sample data. A higher Q^2 value suggests stronger predictive capability, indicating that the relationships specified in the structural model contribute substantially to predicting the endogenous construct under investigation [30].

2.7. Hypothesis Testing

Given that user experience is influenced by both pragmatic and hedonic aspects, it is essential to examine which of these dimensions exerts a stronger effect on overall user attractiveness. Therefore, this research seeks to assess the relative impact of PQ, HQS,

and HQI on ATT. Drawing on established theoretical foundations and empirical evidence from prior research, the following hypothesized relationships are proposed:

1) H1: Pragmatic Quality has a positive and significant effect on Attractiveness.
2) H2: Hedonic Quality - Stimulation has a positive and significant effect on Attractiveness.
3) H3: Hedonic Quality - Identity has a positive and significant effect on Attractiveness.

To evaluate the statistical significance of the hypothesized relationships, a bootstrapping technique was employed using 5,000 subsamples with a two-tailed test at a 5% significance level. The path coefficients were considered statistically significant when the resulting t-statistic exceeded the critical values of 1.96, and the corresponding p-values were below 0.05. The bootstrapping results were then used as the basis for accepting or rejecting each proposed hypothesis [31].

3. RESULTS AND DISCUSSION

This section presents the results derived from applying the procedures established in the preceding methodology. The results comprise the evaluation of the measurement model and the structural model, followed by hypothesis testing to examine the relationships among the constructs. Subsequently, the discussion section will offer an interpretation of these outcomes by referencing the specific research objectives and the appropriate theoretical frameworks.

3.1. Measurement Model

This section reports the outcomes of the data analysis carried out in this research, encompassing the evaluation of both the measurement model and the structural model using the PLS-SEM approach. The results summarize the reliability and validity of the constructs, as well as the statistical outcomes of the hypothesized relationships.

3.1.1. Development of the AttrakDiff Instrument

The data utilized in this research were obtained through the AttrakDiff questionnaire, a standardized instrument designed to measure user perceptions of product experience in interactive systems. The AttrakDiff instrument comprises 28 bipolar adjective pairs

representing four core dimensions PQ, HQS, HQI, and ATT. Each adjective pair was evaluated using a seven-point Likert scale, allowing respondents to indicate their perceived position between two opposite descriptors. This instrument was employed to assess how users evaluate the Pinterest application in terms of usability (pragmatic aspects), emotional appeal (hedonic aspects), and their overall perception of the application's attractiveness. Respondents selected their ratings based on their personal experience using the application, ensuring that the collected data reflected genuine user evaluations. The following are the 28 bipolar adjective pairs used in the AttrakDiff instrument:

	1	2	3	4	5	6	7	
human	☐	☐	☐	☐	☐	☐	☐	technical
isolating	☐	☐	☐	☐	☐	☐	☐	connective
pleasant	☐	☐	☐	☐	☐	☐	☐	unpleasant
inventive	☐	☐	☐	☐	☐	☐	☐	conventional
simple	☐	☐	☐	☐	☐	☐	☐	complicated
professional	☐	☐	☐	☐	☐	☐	☐	unprofessional
ugly	☐	☐	☐	☐	☐	☐	☐	attractive
practical	☐	☐	☐	☐	☐	☐	☐	impractical
likeable	☐	☐	☐	☐	☐	☐	☐	disagreeable
cumbersome	☐	☐	☐	☐	☐	☐	☐	straightforward
stylish	☐	☐	☐	☐	☐	☐	☐	tacky
predictable	☐	☐	☐	☐	☐	☐	☐	unpredictable
cheap	☐	☐	☐	☐	☐	☐	☐	premium
alienating	☐	☐	☐	☐	☐	☐	☐	integrating
brings me closer to people	☐	☐	☐	☐	☐	☐	☐	separates me from people
unpresentable	☐	☐	☐	☐	☐	☐	☐	presentable
rejecting	☐	☐	☐	☐	☐	☐	☐	inviting
unimaginative	☐	☐	☐	☐	☐	☐	☐	creative
good	☐	☐	☐	☐	☐	☐	☐	bad
confusing	☐	☐	☐	☐	☐	☐	☐	clearly structured
repelling	☐	☐	☐	☐	☐	☐	☐	appealing
bold	☐	☐	☐	☐	☐	☐	☐	cautious
innovative	☐	☐	☐	☐	☐	☐	☐	conservative
dull	☐	☐	☐	☐	☐	☐	☐	captivating
undemanding	☐	☐	☐	☐	☐	☐	☐	challenging
motivating	☐	☐	☐	☐	☐	☐	☐	discouraging
novel	☐	☐	☐	☐	☐	☐	☐	ordinary
unruly	☐	☐	☐	☐	☐	☐	☐	manageable

Figure 2. Attrakdiff Instrument

3.1.2. Data Collection

Data were gathered through an online questionnaire administered via Google Forms and disseminated across various digital platforms, including social media, online user

communities, and instant messaging channels, to reach a diverse range of respondents. Participants were required to be active Pinterest users residing in Indonesia and were asked to complete the AttrakDiff instrument, which consists of 28 bipolar adjective pairs, based on their personal experiences using the Pinterest application. In addition to the AttrakDiff items, the questionnaire also gathered basic demographic information, including gender, age, and the frequency of Pinterest usage. The data collection was carried out over a defined period, yielding a total of 551 responses. Table 1 present the demographic information of the respondents:

Table 1. Gender of Respondents

Gender	Total	Percentage
Woman	419	76%
Man	132	24%
Total	**551**	**100%**

Based on the Table 1, the respondents were predominantly female, with 419 participants (76%), while male respondents accounted for 132 participants (24%). This indicates that Pinterest users in this research were largely female, reflecting the tendency of visual-based applications to attract more female users.

Table 2. Age of Respondents

Age	Total	Percentage
< 18 Years	40	7,3%
18 - 25 Years	446	80,9%
26 - 35 Years	62	11,3%
> 35 Years	3	0,5%
Total	551	100%

The largest age group of respondents was 18–25 years, comprising 446 participants (80.9%), followed by those aged 25–35 years with 62 participants (11.3%), under 18 years with 40 participants (7.3%), and over 35 years with 3 participants (0.5%). This distribution indicates that Pinterest is predominantly used by younger users who actively seek visual inspiration and are more adaptable to creative digital platforms, as shown in Table 2. A Frequency of pinterest usage total of 299 respondents (54.1%) used Pinterest several times a week, 189 respondents (34.3%) used it rarely, and 63 respondents (11.4%) used it every day, as shown in Table 3. This indicates that most respondents used Pinterest on a periodic rather than daily basis.

Table 3. Frequency of Pinterest Usage

Frequency	Total	Percentage
Every day	63	11,4%
Several times a week	299	54,1%
Rarely	189	34,3
Total	**551**	**100%**

3.1.3. Data Preprocessing

Before proceeding to the main analysis, the gathered data underwent a data preprocessing phase to guarantee data accuracy, consistency, and suitability for subsequent modeling. The preprocessing process included several essential steps.

1) Data Cleaning

The data cleaning procedure was carried out to ensure that the dataset employed for analysis was complete, valid, and appropriate for subsequent processing. This stage involved a systematic review of all questionnaire responses to detect incomplete records, duplicate submissions, responses that failed to meet the predefined inclusion criteria, and logically inconsistent answer patterns. Logically inconsistent responses were defined as those exhibiting irregular or implausible answering behavior, including extremely low response variability, contradictions between conceptually related bipolar adjective pairs, or indications of insufficient attention to item content.

From the initial total of 551 responses collected, responses that failed to meet these criteria were excluded to maintain overall data quality. Following this screening and elimination process, a final dataset comprising 524 valid responses was retained and used for subsequent analyses. Table 4 presents a summary of the data screening process, including the reasons for response removal and the number of responses excluded at each stage.

Table 4. Summary of Data Screening and Removal

Reason for Removal	Number of Responses	Description
Incomplete responses	2	Questionnaires with missing or unanswered items
Duplicate entries	6	Repeated submissions were identified during data cleaning
Did not meet the inclusion criteria	2	Responses that did not satisfy the predefined respondent criteria
Logically inconsistent answer patterns	17	Responses showing irregular or implausible answering behavior, such as extremely low response variability, contradictions between conceptually related bipolar items, or insufficient attention to item content
Total removed responses	**27**	**Excluded**
Final valid responses	**524**	**Responses retained for subsequent statistical analysis**

2) Reverse Coding

In addition to general data cleaning, a reverse coding procedure was applied to several items in the AttrakDiff instrument. Reverse coding was required because some bipolar adjective pairs were oriented in a negative-to-positive direction, which differed from the

scoring orientation used in the SmartPLS analysis. In this research, a total of 16 adjective pairs required reverse coding to ensure that all scores aligned consistently, with higher values reflecting more positive user perceptions. Meanwhile, items whose scoring direction was already consistent with the analytical orientation remained unchanged and retained their original respondent values. The items necessitating reverse coding are summarized in the Table 5.

Table 5. Reversed Word Pairs

Pairs of Words Bipolar After Reversed	
Technical - Human	Unpredictable - Predictable
Unpleasant - Pleasant	Separates me from people - Brings me closer to people
Conventional - Inventive	Bad - Good
Complicated - Simple	Cautious - Bold
Unprofessional - Professional	Conservative - Innovative
Impractical - Practical	Challenging - Undemanding
Disagreeable - Likeable	Discouraging - Motivating
Tacky - Stylish	Ordinary - Novel

3) Classification of Data by Dimension

The next step is to classify these items based on the four main dimensions of the AttrakDiff model. The AttrakDiff measurement instrument is composed of 28 pairs of bipolar adjective items, each representing one of the four dimensions PQ, HQS, HQI, and ATT. At this stage, each questionnaire item is classified into the appropriate dimension in accordance with the theoretical structure of the AttrakDiff framework, as supported by prior studies. The classification used in this research follows the indicator structure applied in the research "The Influence of Hedonic Quality on Attractiveness" by Schrepp, which serves as the main reference for mapping items into the PQ, HQS, HQI, and ATT constructs.

This dimension classification is not shown to respondents during questionnaire completion but is performed during the data processing phase to ensure accurate identification of construction relationships in SmartPLS analysis. The classification process produces four groups of indicators, which are then used to build the research model in SmartPLS. The complete mapping of items into the four AttrakDiff dimensions is presented in Table 6.

Table 6. Classification by Dimension

Pairs of Words Bipolar	Dimension
Human - Technical	PQ1
Simple - Complicated	PQ2
Practical - Impractical	PQ3
Cumbersome - Straightforward	PQ4
Predictable - Unpredictable	PQ5
Confusing - Clearly Structured	PQ6
Unruly - Manageable	PQ7
Isolating - Connective	HQI1
Professional - Unprofessional	HQI2
Stylish - Tacky	HQI3
Cheap - Premium	HQI4
Alienating - Integrating	HQI5
Brings me closer to people - Separates me from people	HQI6
Unpresentable - Presentable	HQI7
Inventive - Conventional	HQS1
Unimaginative - Creative	HQS2
Bold - Cautious	HQS3
Innovative - Conservative	HQS4
Dull - Captivating	HQS5
Undemanding - Challenging	HQS6

Pairs of Words Bipolar	Dimension
Novel - Ordinary	HQS7
Pleasant - Unpleasant	ATT1
Ugly - Attractive	ATT2
Repelling - Appealing	ATT3
Rejecting - Inviting	ATT4
Good - Bad	ATT5
Likeable - Disagreeable	ATT6
Motivating - Discouraging	ATT7

3.1.4. Outer Model Evaluation

Before analyzing the hypothesized structural relationships between the constructs, the measurement model (outer model) required initial evaluation. This step was crucial to ensure that all indicators utilized in the research were proven to be valid and reliable representations of the constructs they were intended to measure. In PLS-SEM, assessing the outer model focuses on several essential criteria, such as outer loadings, AVE, discriminant validity, and construct reliability.

1) Outer Loadings

Indicator reliability was determined by assessing the outer loading scores for each item against its designated construct. Loading values of 0.70 or above indicate that the indicator adequately reflects the construct. Indicators that exhibited loadings under the established threshold were subjected to a thorough review. This review determined their potential removal or whether they warranted further consideration, depending on their theoretical justification and their overall contribution to the model's validity. The detailed outer loading values for each indicator are presented in the Table 7.

Table 7. Outer Loading Value Before Elimination

ATT		HQI		HQS		PQ	
ATT1	0.789	**HQI1**	0.743	**HQS1**	0.736	**PQ1**	0.783
ATT2	0.826	**HQI2**	0.825	**HQS2**	0.727	**PQ2**	0.776
ATT3	0.711	**HQI3**	0.798	**HQS3**	0.720	**PQ3**	0.782

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ATT		HQI		HQS		PQ	
ATT4	0.782	**HQI4**	0.744	**HQS4**	0.710	**PQ4**	0.656
ATT5	0.716	**HQI5**	0.770	**HQS5**	0.637	**PQ5**	0.778
ATT6	0.725	**HQI6**	0.784	**HQS6**	0.706	**PQ6**	0.791
ATT7	0.740	**HQI7**	0.724	**HQS7**	0.738	**PQ7**	0.775

The results show that the indicators for Attractiveness (ATT) exhibit loading values ranging from 0.711 to 0.826, while those for HQI fall between 0.724 and 0.825. The indicators for HQS demonstrate loadings between 0.637 and 0.738, and those for PQ range from 0.656 to 0.791. In general, the majority of indicators surpass the suggested threshold of 0.70, indicating a strong capacity to reliably reflect their respective constructs. Nevertheless, two indicators, namely HQS5 and PQ4, exhibited loading values below the acceptable limit. As these indicators did not sufficiently reflect their underlying constructs, they were then removed from the measurement model. This step was undertaken to enhance indicator reliability and improve the overall quality of the outer model evaluation. The full results of the outer loading analysis are presented in the Table 8.

Table 8. Outer Loading Value After Elimination

ATT		HQI		HQS		PQ	
ATT1	0.789	**HQI1**	0.743	**HQS1**	0.743	**PQ1**	0.786
ATT2	0.826	**HQI2**	0.825	**HQS2**	0.730	**PQ2**	0.783
ATT3	0.712	**HQI3**	0.798	**HQS3**	0.732	**PQ3**	0.787
ATT4	0.782	**HQI4**	0.744	**HQS4**	0.719		
ATT5	0.716	**HQI5**	0.770	**HQS5**		**PQ5**	0.788
ATT6	0.725	**HQI6**	0.784	**HQS6**	0.718	**PQ6**	0.793
ATT7	0.740	**HQI7**	0.724	**HQS7**	0.745	**PQ7**	0.784

The revised and validated research model is illustrated in the Figure 3. Following the removal of indicators HQS5 and PQ4 due to their failure to meet the reliability criterion, the remaining indicators were re-assessed. The findings indicated that all retained indicators fulfilled the outer loading requirements, with values consistently exceeding the minimum criterion of 0.70. As a result, the constructs within the research model were deemed both valid and appropriate for application in the subsequent analytical stage.

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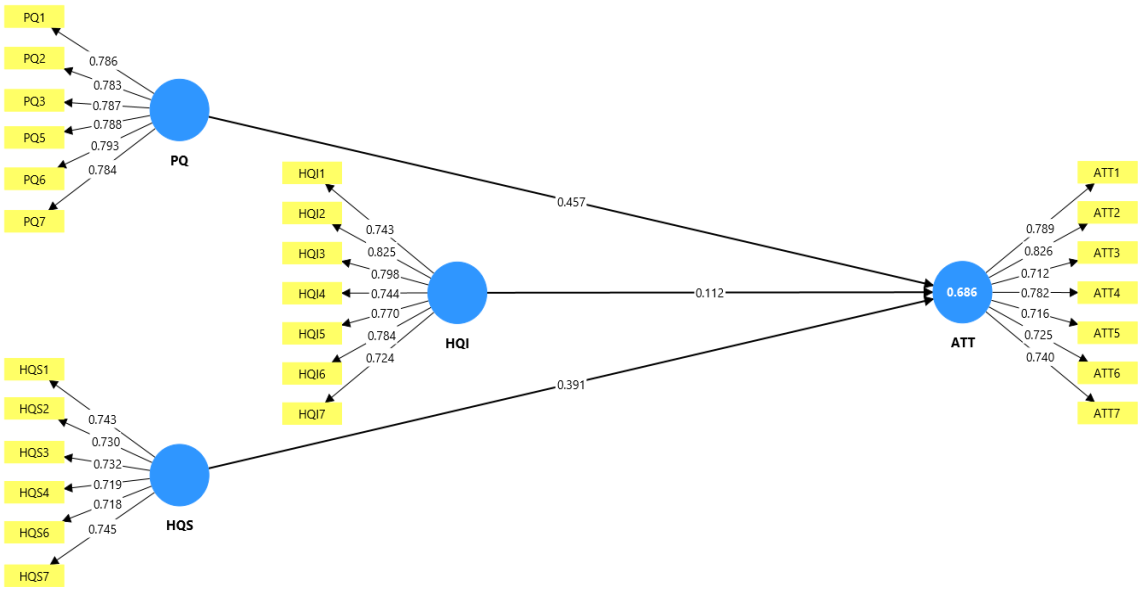

Figure 3. SEM Model Diagram Output

2) Average Variance Extracted (AVE)

To evaluate convergent validity for all constructs in the research model, the Average Variance Extracted (AVE) was calculated. Convergent validity is considered satisfactory when the AVE value exceeds 0.50. The resulting AVE values for each construct are reported in the Table 9.

Table 9. Average Variance Extracted (AVE) Results

Dimension	AVE	Description
ATT	0.573	Valid
HQI	0.594	Valid
HQS	0.535	Valid
PQ	0.619	Valid

The analysis results indicate that all constructs met the required standard, reporting AVE values of 0.573, 0.594, 0.535, and 0.619, in order. Since these figures surpass the minimum limit, it is established that every construct demonstrates sufficient convergent validity and that the indicators associated with each construct reliably measure their intended latent variables.

3) Discriminant Validity

Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT), a well-established method for assessing construct distinctiveness in PLS-SEM. Discriminant validity is established when HTMT values for all constructs fall below 0.85 under a strict criterion or below 0.90 under a more liberal threshold, indicating that the constructs represent conceptually different phenomena and do not exhibit excessive overlap. The complete HTMT results, covering all construct pairings, are provided in the Table 10.

Table 10. Discriminant Validity Result

Dimension	Attractiveness	Hedonic Quality - Identity	Hedonic Quality - Stimulation	Pragmatic Quality
ATT				
HQI	0.398			
HQS	0.765	0.318		
PQ	0.804	0.324	0.825	

The results of the analysis show that all construct pairs meet this requirement. Specifically, the HTMT values obtained were 0.398 for HQ-I ↔ ATT, 0.765 for HQ-S ↔ ATT, 0.318 for HQ-S ↔ HQ-I, 0.804 for PQ ↔ ATT, 0.324 for PQ ↔ HQ-I, and 0.825 for PQ ↔ HQ-S. All of these values are below 0.90, indicating that each construct is sufficiently distinct and does not present multicollinearity concerns with other constructs. These results confirm that the measurement model demonstrates acceptable discriminant validity.

4) Construct reliability

The reliability and validity of each construct were evaluated using two primary indicators, namely Cronbach's Alpha and Composite Reliability (CR). A construct is regarded as reliable when both Cronbach's Alpha and CR exceed the recommended threshold of 0.70, reflecting that the indicators measure the intended latent construct consistently and coherently. The final results are presented in the Table 11.

Table 11. Construct Reliability Results

Dimension	Cronbach's alpha	Composite reliability (CR)	Description
ATT	0.887	0.903	Reliable
HQI	0.888	0.911	Reliable
HQS	0.826	0.873	Reliable
PQ	0.877	0.907	Reliable

All constructs in this research demonstrated satisfactory reliability, with Cronbach's Alpha values ranging from 0.826 to 0.888 and Composite Reliability values ranging from 0.873 to 0.911, exceeding the recommended threshold of 0.70. These results indicate that the indicators consistently measure their respective constructs, confirming the reliability of the measurement model.

3.1.5. Inner Model Evaluation

Once the measurement model had been satisfactorily validated, the analysis advanced to the evaluation of the structural inner model to examine the proposed interrelationships among constructs. In the context of PLS-SEM, the inner model evaluation emphasizes key indicators, particularly R^2 values, which indicate the proportion of variance in endogenous constructs explained by their predictor constructs, as well as path coefficients that reflect the strength and statistical significance of the relationships among constructs. This comprehensive evaluation is crucial for verifying that the model sufficiently explains the hypothesized relationships and offers significant insights into the structural linkages between the variables.

1) R-Square (R^2)

The R^2 values were examined to evaluate the explanatory power of the endogenous constructs in the model. The R^2 metric calculates the portion of variance within any specific endogenous construct that is attributable to the effect of its related predictor constructs. The resulting R^2 values for all dependent constructs are displayed in Table 12. The R^2 value of 0.684 indicates that its predictor constructs are responsible for explaining 68.4% of the total variance observed in the dependent construct. These comparatively high R^2 values demonstrate that the model has strong predictive capability, confirming

that the independent constructs make a substantial contribution to explaining the outcome within the structural model.

Table 12. R-Square (R^2) Results

Dimension	R-square	Description
ATT	0.684	Strong

2) F- Square (F^2)

The effect size (f^2) values were analyzed to determine the relative contribution of each exogenous construct to the endogenous construct within the structural model. The f^2 metric assesses the extent to which each predictor influences the explained variance of the dependent construct by examining changes in the R^2 value when a particular exogenous construct is included or removed from the model. The resulting f^2 values for all predictor constructs affecting Attractiveness are presented in Table 13.

Table 13. F-Square (F^2) Results

Dimension	ATT	Description
HQI	0.036	Small
HQS	0.242	Moderate
PQ	0.328	Moderate

The results show that PQ has an effect size of 0.328, which falls within the moderate category, followed by HQS with an f^2 value of 0.242, which also reflects a moderate effect. Conversely, HQI shows a comparatively weak influence on Attractiveness, as indicated by an f^2 value of 0.036. These findings indicate that functional usability aspects contribute more substantially to explaining the variance in Attractiveness than identity-related hedonic aspects within the structural model.

3) Path Coefficients

Path coefficients were examined to determine the strength and statistical significance of the proposed relationships among constructs within the structural model. These coefficients represent the direct influence of one construct on another, with larger absolute values indicating stronger relationships. The detailed path coefficient values along with their corresponding significance levels are reported in the Table 14.

Table 14. Path Coefficients Results

Dimension	Path coefficients	Description
HQI -> ATT	0.112	Positive
HQS -> ATT	0.391	Positive
PQ -> ATT	0.457	Positive

The analysis indicates that all predictor constructs have a positive impact on Attractiveness. The effect of Hedonic Quality - Identity on Attractiveness is 0.112, Hedonic Quality - Stimulation has an effect of 0.391, and Pragmatic Quality shows the strongest effect with a coefficient of 0.457. These results suggest that higher levels of each antecedent construct are associated with higher levels of Attractiveness.

3.1.6. Predictive Relevance of the Model

The predictive relevance of the structural model was evaluated using the Q^2 predict metric derived from the PLSpredict procedure. The Q^2 predict measure assesses the model's capability to accurately forecast the values of endogenous constructs based on the relationships specified in the structural model. A Q^2_predict value above zero indicates that the model possesses predictive relevance and can generate meaningful predictions beyond the sample data. The predictive relevance results are reported in the Table 15.

Table 15. Q^2 Predict Results

Dimension	Q^2 Predict	Description
ATT	0.678	Strong Predictive Relevance

The results indicate that the Q^2 predictive values for Attractiveness are 0.678, indicating strong predictive relevance. This finding suggests that the proposed model demonstrates a high capacity to predict users' perceived attractiveness of the Pinterest application based on the combined effects of PQ, HQS, and HQI.

3.1.7. Hypothesis Testing

Structural models were analyzed to evaluate the hypothesized relationships between constructs and to determine empirical support for each hypothesis proposed. This analysis focused on the effects of PQ, HQS, and HQI on Attractiveness (ATT).

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The bootstrapping procedure was employed to estimate path coefficients together with their corresponding t-statistics and p-values. These measures are essential for assessing the statistical significance of each examined structural relationship. A relationship is regarded as statistically significant when the t-statistic exceeds 1.96, and the corresponding p-value is below 0.05. Based on these results, decisions were made to accept or reject each hypothesis, as summarized in the Table 15.

Table 16. Hypothesis Results

	Original sample (O)	T statistics	P values	Description
HQI -> ATT	0.112	3.179	0.001	Significant
HQS -> ATT	0.391	10.074	0.000	Significant
PQ -> ATT	0.457	12.620	0.000	Significant

The following section outlines the results of the structural model analysis after the bootstrapping procedure, including the estimated path coefficients and their corresponding levels of statistical significance. The complete model structure is visually represented in the Figure 4.

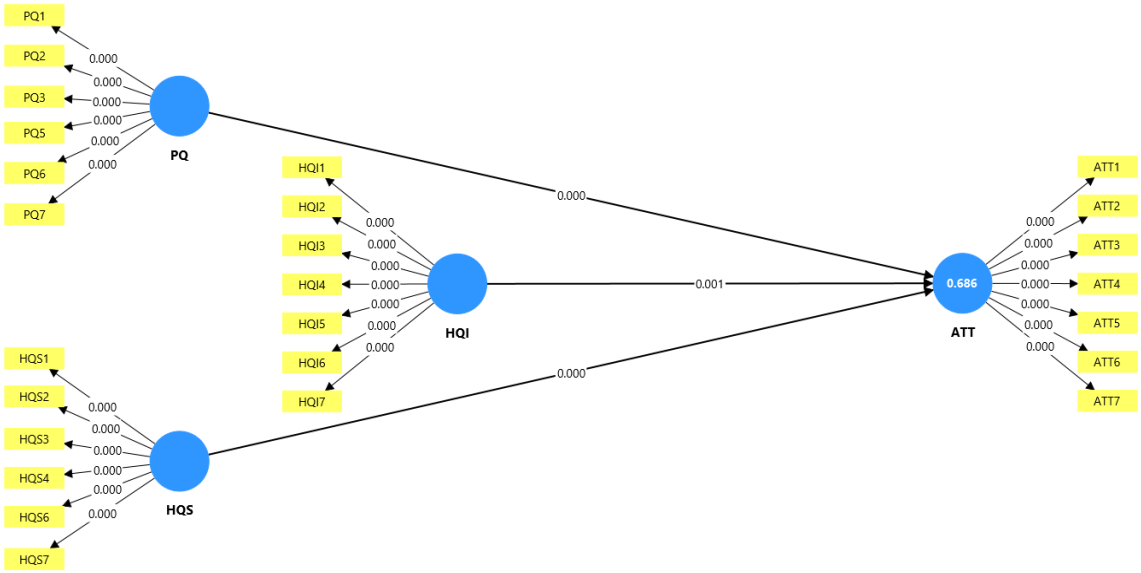

Figure 4. Bootstrapping Model Diagram Output

The proposed hypotheses were subjected to scrutiny based on the outcomes derived from the structural model analysis, as detailed as follow.

1) **H1: Pragmatic Quality has a positive and significant effect on Attractiveness.**
The analysis of the relationship between Pragmatic Quality (PQ) and Attractiveness yielded a path coefficient of 0.457, accompanied by a robust t-statistic of 12.620 and a p-value of 0.000. These results decisively confirm a strong, positive, and statistically significant effect. This outcome suggests that when the system's functionality and usability are enhanced, there is a marked improvement in the users' perception of its overall attractiveness. Consequently, H1 is supported.
2) **H2: Hedonic Quality-Stimulation has a positive and significant effect on Attractiveness.**
The relationship connecting HQS to Attractiveness was examined, resulting in a path coefficient of 0.391, a t-statistic of 10.074, and a p-value of 0.000. These robust figures decisively confirm a significant positive effect. This finding indicates that design factors that cultivate excitement, engagement, and stimulation are fundamentally important in boosting the perceived attractiveness of the product or system. Thus, H2 is supported.
3) **H3: Hedonic Quality -Identity has a positive and significant effect on Attractiveness.**
The influence of HQI on Attractiveness was confirmed by a path coefficient of 0.112, a t-statistic of 3.179, and a p-value of 0.001, establishing a positive and statistically significant relationship. Despite this effect being less pronounced than the other dimensions, it demonstrates that the system's ability to align with users' self-expression and identity still offers a positive contribution to the perceived attractiveness. Thus, H3 is supported.

These findings indicate that all three dimensions positively affect Attractiveness, with PQ exerting the strongest influence, followed by HQS and HQI. In conclusion, the results confirm that both pragmatic and hedonic dimensions are essential in increasing user-perceived attractiveness, with pragmatic factors exerting the strongest influence. This underscores the need to consider not only functional aspects but also experiential elements to enhance the overall appeal of the system.

3.2. Discussion

The findings of this research reveal that all analyzed user experience dimensions exert a positive and statistically significant influence on the perceived attractiveness of the

Pinterest application. Among these dimensions, PQ exhibits the strongest influence on Attractiveness, followed by HQS, while HQI demonstrates the weakest effect.

The dominance of PQ suggests that functional usability plays a central role in shaping users' perceptions of Pinterest's attractiveness. As a visually oriented and inspiration-driven platform, Pinterest relies heavily on efficient navigation, effective search functionality, and intuitive content organization. Users frequently interact with features such as keyword-based searches, visual recommendations, and the ability to save and categorize content into boards. These pragmatic elements support a smooth workflow for discovering, organizing, and revisiting ideas, making ease of use, clarity, and system reliability critical determinants of a positive user experience. Consequently, when these functional aspects perform well, users are more inclined to perceive the application as appealing and valuable.

Although HQS also shows a substantial positive effect, its influence is secondary to PQ. This finding indicates that while elements related to creativity, novelty, and engagement contribute meaningfully to user experience, they function primarily as complementary factors. In the context of Pinterest, stimulation arises from visually appealing content, inspirational feeds, and the sense of exploration. However, these hedonic aspects appear to enhance attractiveness most effectively when they are supported by a well-functioning and efficient system.

In contrast, HQI demonstrates the weakest effect on Attractiveness. This relatively small coefficient indicates that identity expression and self-representation are less central to the way users engage with the Pinterest application. Pinterest is primarily utilized as a personal inspiration and planning tool, where users focus on searching for, saving, and organizing visual ideas according to their individual interests and needs. Consequently, users place greater emphasis on functional efficiency and content organization rather than on projecting identity or social status. As a result, although identity-related hedonic aspects contribute positively to user experience, their role remains less dominant in shaping the overall perceived attractiveness of the platform.

In comparison with previous UX studies on other visually rich platforms, the findings of this research demonstrate both similarities and contextual differences. Holmgren (2022)

examined the interplay between pragmatic and hedonic qualities on Instagram and found that, despite the platform's strong visual and expressive characteristics, pragmatic aspects such as functional efficiency and ease of interaction remain essential for sustained and routine use. This finding aligns with the results of the present research, where Pragmatic Quality emerges as the strongest determinant of attractiveness, indicating that even highly visual platforms require reliable navigation, effective search, and clear interaction flows to maintain user engagement.

Similarly, research by [32] on TikTok shows that hedonic motivations (particularly entertainment and stimulation) play a dominant role in attracting users to short-video platforms. However, utilitarian or pragmatic motivations remain relevant, especially when users transition from passive consumption to goal-oriented actions, such as information seeking or purchasing behavior. Compared to TikTok's entertainment-centered nature, Pinterest functions primarily as an inspiration and organization tool, where users focus on searching, saving, and structuring visual ideas.

This contextual difference helps explain why Pragmatic Quality exerts a stronger influence on attractiveness in Pinterest, while hedonic stimulation plays a supportive rather than dominant role. Overall, the comparison highlights that the relative importance of pragmatic and hedonic UX dimensions varies across visual platforms depending on their primary usage goals, thereby reinforcing the scientific positioning of the present findings.

4. CONCLUSION

Based on the analysis using AttrakDiff and PLS-SEM on data from 524 respondents, this research confirms that all dimensions of user experience, namely PQ, HQS, and HQI positive and statistically significant influence on the perceived Attractiveness of the Pinterest application. The structural model demonstrates strong predictive capability for Attractiveness, with an R-squared (R^2) value of 0.684, indicating that these three dimensions collectively explain the majority of users' perceptions. Pragmatic Quality exerts the strongest influence, with a path coefficient of 0.457, a t-statistic of 12.620, and a p-value of 0.000, highlighting that functionality, ease of use, consistency, and practicality remain the primary factors shaping positive user perceptions. The hedonic

dimension also contributes meaningfully, as HQS yields a path coefficient of 0.391, a t-statistic of 10.074, and a p-value of 0.000, emphasizing experiences that are stimulating, creative, and emotionally engaging. Meanwhile, HQI, with a path coefficient of 0.112, a t-statistic of 3.179, and a p-value of 0.001, reflects the role of identity, self-expression, professional impression, and social connectedness in enhancing users' emotional engagement. These results suggest that a successful application must not only work well but also be enjoyable and meaningful for users. This research contributes by providing a complete evaluation of user experience on a visually oriented platform, showing that developers need to focus on both practical usability and elements that make the application fun and personally engaging. The findings can help designers improve the user experience of Pinterest and other similar digital applications and guide future research on how users perceive and enjoy visually rich platforms.

Although this research offers meaningful contributions to the assessment of user experience on the Pinterest application, several limitations should be considered. First, this research focuses on measuring user experience perceptions; therefore, the results reflect the state of user experience during the data collection period and do not account for potential changes in the application's interface or features over time. Second, the analysis is limited to direct relationships between the AttrakDiff dimensions and Attractiveness, and thus, potential indirect relationships or the roles of mediating and moderating variables have not been explored.

Future research is encouraged to investigate more complex models by incorporating mediating or moderating variables to gain a deeper understanding of the mechanisms underlying user experience formation. In addition, further studies may be conducted across different application versions or usage periods to examine the consistency of the findings alongside the evolution of digital platform design and features. Such efforts are expected to enrich user experience evaluation research and support the development of digital applications that are more aligned with user needs and preferences.

ACKNOWLEDGMENT

The author sincerely thanks all respondents who participated in this research by sharing their feedback on the Pinterest application, as their insights were crucial for assessing

usability and user experience. Gratitude is also extended to the academic mentor for their guidance, constructive feedback, and continuous support throughout the research process. This research benefited from the resources and facilities provided by Sriwijaya University. Finally, the author appreciates all individuals and parties who, either directly or indirectly, played a role in the successful completion of this research.

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