Dean&Francis
ISSN 2959-6149

Does algorithm response time influence user satisfaction more than interface aesthetics in Android note-taking applications?

Jintao Li

Abstract:

This study investigates the comparative influence of algorithm response time and interface aesthetics on user satisfaction in Android note-taking applications. While both performance and visual design are recognized as critical factors in user experience, their relative importance in productivity-oriented mobile apps remains underexplored. A quantitative experimental study was conducted with 300 participants using functional prototypes that systematically manipulated response time (fast vs. slow) and interface aesthetics (basic vs. visually enhanced). Data were analyzed using descriptive statistics, correlation analysis, and multiple regression. Results indicate that algorithm response time ($\beta = 0.5691$, $p < 0.001$) exerts a significantly stronger influence on user satisfaction than interface aesthetics ($\beta = 0.3687$, $p < 0.001$), with response time explaining a greater proportion of variance in satisfaction scores. The findings challenge assumptions that visual appeal contributes equally to satisfaction in task-focused applications, highlighting system responsiveness as the primary driver of user retention and positive experience. These results offer practical guidance for mobile app developers and UX designers, suggesting that optimization efforts should prioritize algorithmic efficiency and latency reduction before investing in visual refinements. The study contributes to human-computer interaction literature by providing empirical evidence on the relative weighting of functional and aesthetic factors in mobile productivity contexts.

Keywords: Algorithm response time; interface aesthetics; user satisfaction; mobile applications; human-computer interaction; visual design; productivity applications

ISSN 2959-6149

1. Introduction

In the era of the digital world, productivity programs already belong to the life and the internet can become a very important element in the information management, creativity, and organization, and note taking apps may be regarded as one of the significant elements of the latter. Android platform is a competitive market that presents the users with a variety of choices, such as barebones software, such as Google Keep, or full-fledged platforms, such as Notion (Onwudebelu et al., 2025). The retention and adoption in this highly saturated market is user experience (UX) because it is a multidimensional concept that could be influenced by its performance and presentation. Two aspects of significance regarding this experience are response-time or perceived speed of an algorithmically responding to a query and fluency of fundamental operations i.e. saving, searching, and syncing and visual appearance i.e. visual aesthetics, configuration, and design integrity of the app. Although both are considered to be significant, a question that developers and UX researchers cannot answer now is the relative importance: does the short-term, functional gratification that comes with a speedy, fast, responsive system stand against the long-term, affective experience of a beautiful design?

Efforts to optimize the backend algorithms, versus spending resources on the front-end design refinement are trade-offs that engineering teams are faced with. An illusion or false priorities can result in products that are aesthetically beautiful but maddeningly slow, or vice versa, scalding hot but cold and unfriendly, and can be unproductive in both the short-term and long-term user satisfaction and even commercial effectiveness (Ridwan & Addo, 2025). The traditional human- computer interaction (HCI) literature has already explored the personal effects of system responsiveness and visual appearance to user perceptions. These factors are often studied in isolation, though, in controlled laboratory experiments with prototypes, so the gaps in our knowledge of how these factors compare in practice in real-world application contexts of full-fledged, commercially developed applications (Diederich et al., 2022).

Thus, this paper attempts to empirically inquire into the comparative effect of perceived response time of the algorithm and perceived aesthetics of the interface on general user satisfaction in the realm of Android note-taking apps. Through the evaluation of the speed and aesthetics perceptions, as well as the perceived level of satisfaction, this study aims to conclude the domination of the impact of either factor. The results will hold practical implications for UX designers and product managers, as they will enable one to strategically focus on features that can benefit most to both user satisfaction and loyalty, and, finally, the success of the productivity applications in a competitive digital environment.

2. Literature Review

2.1 User Satisfaction in Mobile Applications

User satisfaction is a key concept in Research on human-computer interaction (HCI) and a study in information systems because it indicates the overall assessment of the system or application that users have regarding their interaction with the system (Pushpakumar et al., 2023). With regard to mobile applications, user satisfaction is generally identified as to which users are satisfied with what was expected, what was needed, and what was wanted by being in contact with an application. It is a relative but quantifiable reaction determined by usability, performance, aesthetics, and value perception. As opposed to technical metrics of performance, user satisfaction integrates emotional, cognitive, and behavioral responses; thus, it is an essential measure of the success of an application (Pan et al., 2024).

The most commonly utilized ones, and in fact one of the most important instruments, is the System Usability Scale (SUS) that offers a fast and dependable measure of perceived usability by way of a ten-item scale of questions. The simplicity of SUS, coupled with its robustness and capacity to systematize the overall process of satisfaction, has been widely used in mobile application research studies since it does not demand a lot of technical knowledge on the part of the participants. High SUS scores are generally understood as positive user satisfaction and acceptance. TAM claims that users feel more satisfied with those applications that they think are efficient, easy to learn, and facilitate the accomplishment of tasks. Perceived usefulness is a prevailing factor with mobile contexts, particularly productivity applications, because users will expect applications to maximize efficiency and minimize mental work (Grabowski et al., 2024).

Other than the models of usability and acceptance, UX satisfaction models underscore experiential and emotional aspects of interaction. In mobile settings where the level of interaction is high and in most cases time-constrained, a positive user experience has been found to have a strong effect on subsequent usage and loyalty. Consequently, user satisfaction in mobile applications is today seen as a multidimensional concept that means constituting functional efficiency, emotive reaction and aesthetic appreciation (Veronica & Soriero, 2024). In the case of mobile productivity apps, including note-taking applications, task managers, and document editors, user satisfaction is especially

important to consider. Displeasure due to delays, interface poor design, or cognitive overload can directly affect task execution and retention of users. Therefore, research analysts and practitioners must learn the determinants of user satisfaction in mobile productivity apps.

2.2 Algorithm Response Time and Perceived Performance

Response time in mobile applications also consists of a few parts that include input processing delay, loading time, and computational time in the performance of actions such as data saving, data synchronization, and data search. Experience and how users perceive and see these delays in the interaction are what determine perceived performance not just by actual system speed but also by the way the user experiences and sees the delays (Hasan, 2025). It has been reasoned that a response time of less than one second is usually seen as instantaneous, enabling users to have a continuous interactive reaction. Those delays of up to one to three seconds are readily perceivable, yet usually can be tolerated; the system must provide feedback or indicators of progress. Response time of more than three seconds will result in the user becoming frustrated, less trusting, and losing track of continuing the task. The mobile environment is another critical area where tolerance to delay is low due to the high operational conditions and multitasking activities of the users (Abbas et al., 2022).

Previous empirical researches have always shown that there is a strong correlation between system performance and user satisfaction (Indriastiningsih et al., 2023). Shorter response times have been linked with increased perceived usability, enhanced task effectiveness, and satisfaction in different areas of application. Delay is disturbing and cognitively disruptive in the productivity-oriented applications that cause users to feel that the system is inefficient or unreliable. Mobile computing studies also reveal that the most typical reasons behind abandoning the application include performance. Delay also heightens cognitive load since it causes users to rehearse task information in working memory as they wait to get the system's response. Affectively, low response time is an early indication of low quality in the system that reduces the trust of users in the reliability and ability of the application. Over time, the constant exposure to delays may weaken the general satisfaction, despite other features of the application that may be well-programmed.

2.3 Interface Aesthetics and Visual Design.

When applied in the HCI research, aesthetics is not artistic, but they add to the perceptions of usability, reliability, and delight to the users. The effective interface is capable of improving understanding, decreasing cognitive load, and building a positive emotional reaction. Interfaces that have too many visual elements or are not well organized may overload the user, leading to obstruction of the performance of tasks. In contrast, balanced visual complexity (the clarity of layout, blank space, and regular pattern of designs) assists in the readability and easy navigation. The color is valuable as well and determines the mood, attention, and visual hierarchy. Proper color contrast gives the interface better access and reduces visual fatigue, whereas the coherence of the interface is better with the coherence of color use (Pergantis et al., 2026).

Whether it is through readable fonts, proper spacing, and a logical arrangement of information, ease of processing information, especially in a text-intensive application, passes the eye with a note-taking tool. Inappropriate type use or busy designs may undermine the user experience and have a negative impact on satisfaction, despite there being solid functionality under the hood (Jansson et al., 2022). Among the most prominent ideas related to this area is the aesthetic-usability effect, in which users are expected to find aesthetically appealing interfaces to be more usable compared with less appealing ones, whether or not the latter is actually the case, or maximally useful. Aesthetic interfaces are said to be linked to increased levels of trust, credibility, and emotional connection.

Aesthetically pleasing applications would be likely to raise positive feelings, making the users more interested in using the system. Aesthetics can be a difference maker in first adoption and subsequent consumption in mobile apps where competition is stiff, and availability of substitutes is not only close at hand but also an easy option. It is, however, controversial to what extent aesthetics determines satisfaction compared to functional performance, especially within productivity-based applications (Al-Shamaileh & Sutcliffe, 2023).

2.4 Comparative Studies: Performance versus Aesthetics.

Several studies have tried to elicit a comparative perspective of how functional performance and interface aesthetics have a relative effect on user satisfaction. According to some research, the more influential factors on satisfaction are performance-related factors, which in this case are speed and reliability in task-oriented systems (Kaşlı et al., 2025). In this respect, aesthetics is seen as secondary enhancers that cannot make up the ineffective performance of the system. On the other hand, other reports indicate that aesthetics is important in determining the attitude of the user, especially when getting acquainted. Graphical in-

ISSN 2959-6149

terfaces can create more positive assessments in users, despite their existence even with differences in performance. The mixed results of research in studies tend to be varied, considering variations in the type of application, the user context, and the research methodology. The nature of the user goals and expectations between productivity applications (like in note taking application) and entertainment applications is also quite different (Shama et al., 2024). Efficiency, reliability, and speed are key factors to users and so there may be a devaluation of visual appearance. But even aesthetically bad interfaces can have a detrimental effect on satisfaction, both in terms of cognitive load and perceived professionalism. Some of them are based on self-reports in the absence of objective performance variance, and some of the others investigate aesthetics or performance alone, and not in a coherent experimental design.

2.5 Research Gap and Hypotheses Development.

Although much is known about user satisfaction, the performance of the applications and the aesthetics of the interface, there is still a big gap in the literature on their relative impact on mobile productivity applications. Available literature tends to focus on the approach of methodology, in which algorithms' response time and interface aesthetic are treated as independent predictors, and the effects are not compared under controlled conditions. Moreover, there has been little empirical research done on Android note-taking applications, which are a vital type of mobile productivity application.

Where performance studies concentrate on efficiency and delay perception, the aesthetic studies, on the other hand, concentrate on emotional response, the search of the interaction between these two dimensions in influencing overall satisfaction has not been done. With the evolving sophistication of mobile applications, these interactions need to be comprehended to make evidence-based decisions to design them. In an attempt to fill these gaps, the current study seeks to present comparative research of the reaction time of an algorithm and interface appearance in establishing user satisfaction. According to the literature analyzed, the following hypotheses are formulated:

· H1: Algorithm response time has a significant positive effect on user satisfaction in Android note-taking applications.

· H2: Interface aesthetics has a significant positive effect on user satisfaction in Android note-taking applications.

· H3: Algorithm response time has a stronger influence on user satisfaction than interface aesthetics in Android note-taking applications.

3. Research Methodology

3.1 Research Design

The research design is a quantitative experimental study that aims to test the relative contribution of the response time of the algorithms and interface beauty to the user satisfaction of Android-based note-taking applications. The experimental approach suits this case as it enables one to take into account the cues of independent variables as well as monitor the impacts of the independent variables on a dependent variable. Respondent satisfaction can be concluded from the systematic variation of response time and interface aesthetics.

An experimental between-subjects design is considered, in which study parties are randomly associated with various experimental conditions. The method reduces the learning effects and diminishes the chances of bias due to repeated exposure to various interface conditions. The research is quantitative; it is possible to compare results between experimental groups statistically, and it will be objective and reproducible. The design is especially appropriate in testing the aspects of user experience in mobile applications, where slight differences in performance and design can lead to a quantitative change in user satisfaction.

3.2 Application Selection and Experimental Setup

Android note-taking applications were created and designed as functional prototypes since the experimental stimuli would allow the control of both the system and the visual element of design closely. The fact that prototypes were used instead of existing commercial applications also guaranteed that the response time of algorithms and interface aesthetics were both under systematic control without control by other background services and software updates as well as proprietary features. The prototypes were all identical in the basic functionality, i.e. note creation, editing, saving, and retrieval, which ensured that differences in user satisfaction, as observed could be attributed to experiment manipulations only. The experimental design had two main variables which were manipulations of the algorithm response time and interface aesthetics each at two different levels of operation leading to a fully crossed experimental design.

Levels of the Experimental Manipulations:

· Algorithm Response Time

o Fast response: near-instant system feedback during user interactions.

o Slow response: consistent artificial delay during key operations such as saving and loading notes.

· Interface Aesthetics

o Basic interface: minimal colour usage, standard typography, and simple, functional layouts.
o Visually enhanced interface: refined colour schemes, improved typography, balanced spacing, and modern design elements.

3.3 Participants

The research aims to have around 300 respondents, which is adequate in identifying medium effects in HCI research in the context of experiments. The subjects are recruited using university mailing lists and websites where they are various in terms of age and academic history. The inclusion criteria will include Android smartphone users who have previously used a mobile note taking application. People that have worked professionally in the field of mobile app development or UI/UX design will not be eligible in order to minimize experts bias. The demographic data involved in the study are age and gender as well as the level of education and the use of the note-taking app. The given characteristics help to gain contextual information to interpret the results as well as may enable the identification of possible confounding factors with respect to the background of the user.

3.4 Data Collection Instruments

The satisfaction of the user is gauged through a structured questionnaire, which is based on known usability and user experience scales. The questionnaire uses five-point Likert-scale questions, that is, strongly disagree and strongly agree. Questions evaluate the level of general satisfaction, perception of usability, enjoyment, and desire to keep using the app. The measure of perceived algorithm response time is provided by the items that evaluate the speed of the system, responsiveness, and friendliness of the interaction. The items, which determine interface aesthetics, include visual appeal, clarity, and perceived professionalism of the visual interface. The questionnaire aims at having internal consistency and content validity, and it is consistent with the previous research on mobile user experience.

3.5 Variables and Measurement

In this study, interventions are the independent variables, which are the response time of the algorithm and aesthetics in the interface, both operationalized at two levels. User satisfaction is the dependent variable that will be measured in the form of a composite score based on the answers provided in the questionnaires. The control variables will be experience with note-taking applications in the past, the type of device used, and the use of mobile applications. Such controls allow isolating the effects of the manipulated variables and increase the validity of the findings.

4. Results and Discussion

4.1 Data Screening and Exploratory Data Analysis

Data screening preceded hypothesis testing because the dataset must fulfill the assumptions of parametric statistical analysis. In this step, descriptive statistics, distributions, outliers, reliability and normality were evaluated. These are the procedures necessary to justify the strength and understandability of later inferential tests.

4.1.1 Descriptive Overview of the Dataset

Table 1 shows the descriptive statistics of the three core study variables, namely: algorithm response time, interface aesthetics, and user satisfaction. The average score of the algorithm response time was 3.0080 (SD = 0.9584), and therefore, the participants showed that the overall perception of the speed of the note-taking applications was moderately fast. The standard deviation is fairly average to indicate the reasonable variation in the perception of the participants in relation to the response time, which is correct to study its effect on the feeling of satisfaction.

Table 1: Descriptive Statistics of Study Variables

Variable	Mean	Std Dev	Min	Max
Response_Time	3.0080	0.9584	1.0	5.0
Aesthetics	2.9747	0.9520	1.0	5.0
User_Satisfaction	3.0240	0.8579	1.0	5.0

The average of 2.9747 (SD = 0.9520) obtained in the interface aesthetics indicated a more or less negative to moderately positive scores of visual design aspects. The result means that the visual quality of the experimental interfaces was neither too simple nor too advanced, which meant that its impact on satisfaction could be measured. The mean of the user satisfaction was 3.0240 (SD = 0.8579), and this means that the participants were gener-

ISSN 2959-6149

ally moderately satisfied. The minimum and maximum scores of all variables fell between 1.0 and 5.0, and support the use of the Likert scale fully and the non-existence of the response restriction or ceiling effects. In general, the descriptive findings show that the dataset is balanced and can be further analyzed.

4.1.2 Exploratory Data Analysis and Distribution Assessment

The exploratory data analysis was performed in order to determine distributional aspects and possible anomalies. Histograms of the response time of the algorithm, interface aesthetic, and user satisfaction are illustrated in Figure 1. The three variables can be visually inspected as they all have about symmetric distributions around the means. Although slight anomalies of ideal normality are evident, the distributions will not have severe cases of skewness and kurtosis that would jeopardize parametric tests.

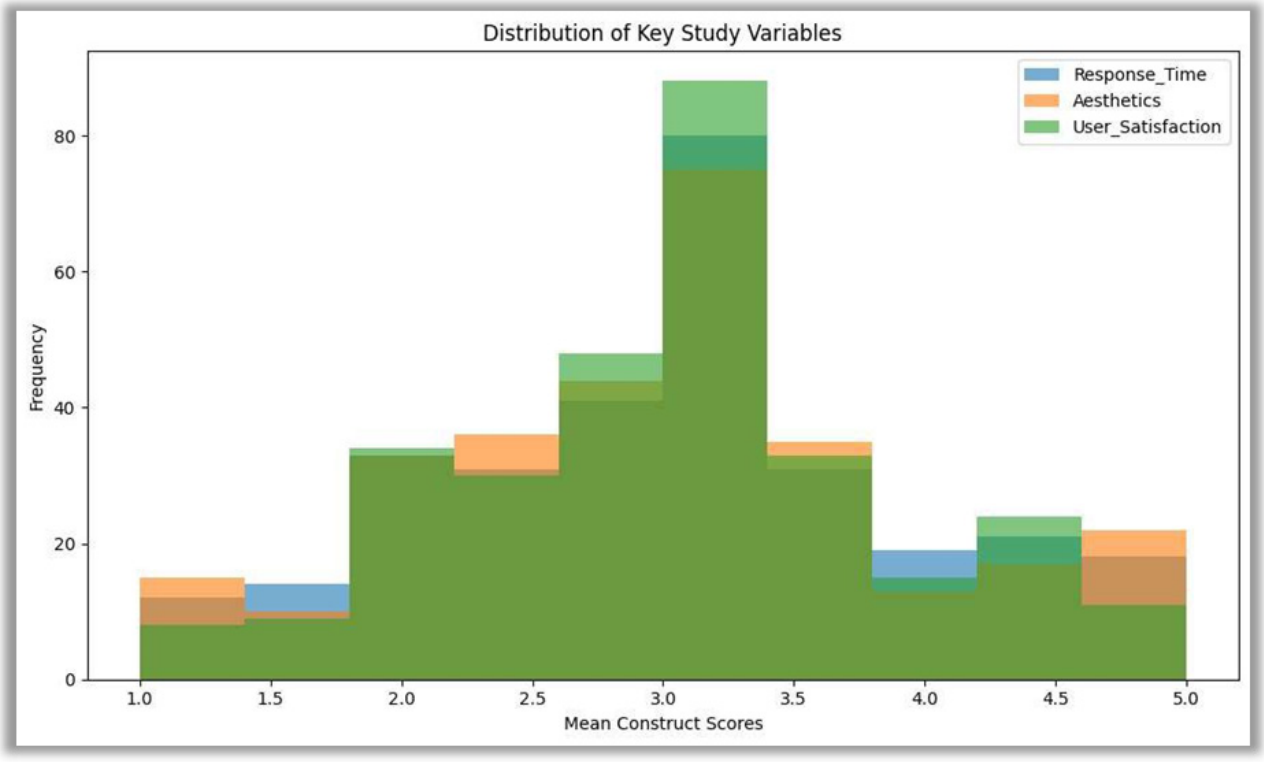

Figure 1: Histogram Showing Distribution of Algorithm Response Time, Interface Aesthetics, and User Satisfaction

The boxplots of the study variables are provided in Figure 2 to identify any outliers. The boxplots show that most of the observations are in the interquartile range of each of the constructs. The extreme values are few, but this is within acceptable limits and does not represent influential outliers. This, therefore, means that there were no instances of dropping cases out of the data. The exploratory analysis will verify that the data satisfy the distributional properties to allow parametric methods of statistics to be used in further analysis.

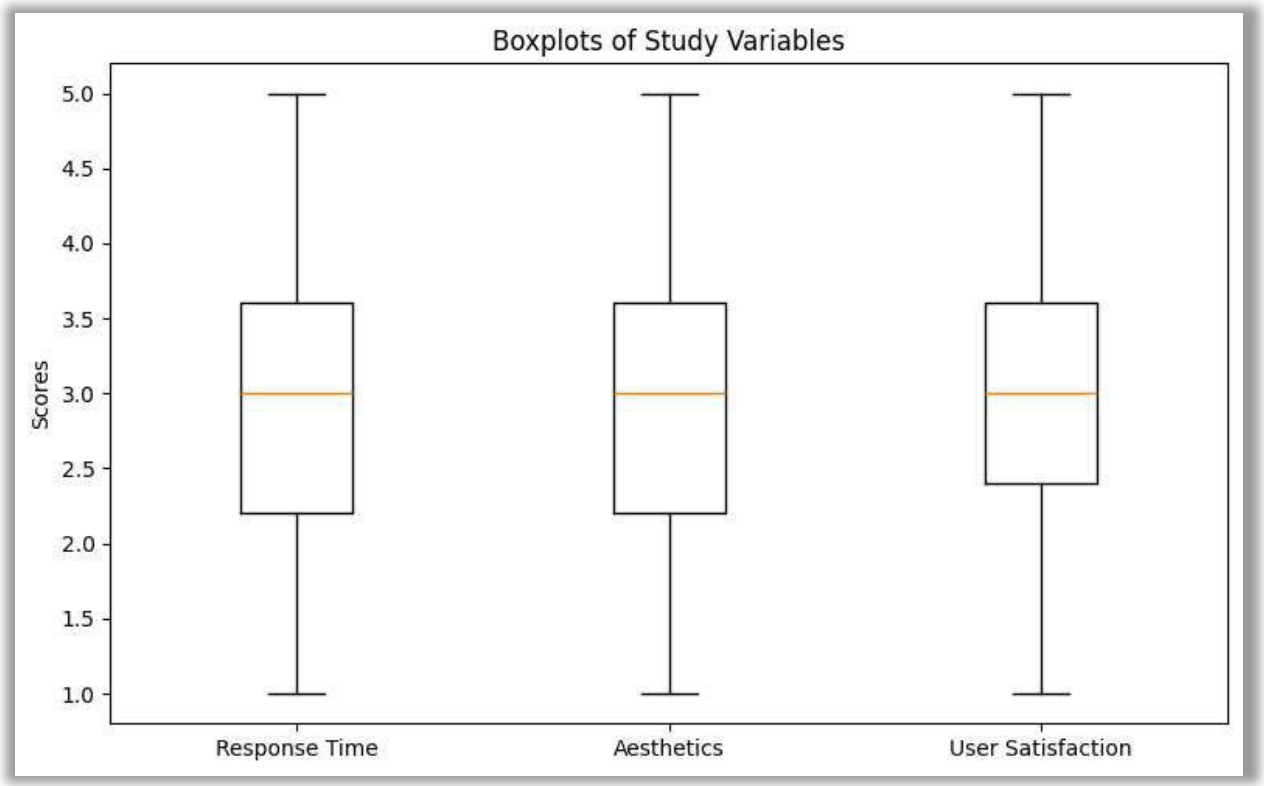

Figure 2: Boxplots of Study Variables for Outlier Detection

4.2 Reliability and Measurement Consistency

4.2.1 Internal Consistency Reliability

Cronbach's alpha was used to measure internal consistency reliability, and the results are shown in Table 2. The response time of the algorithm had Cronbach's alpha equal to 0.9513, the interface aesthetics had alpha equal to 0.9506 and user satisfaction had alpha equal to 0.9341. All the values are significantly greater than the generally accepted threshold of 0.70, which is equal to high internal consistency.

Table 2: Cronbach's Alpha Values for Measurement Constructs

Construct	Cronbach's Alpha
Algorithm Response Time	0.9513
Interface Aesthetics	0.9506
User Satisfaction	0.9341

The large reliability coefficients indicate that the items used in the measurement of individual constructs are very consistent and well represent the theoretical dimensions underlying the constructs. The findings also give assurance that observed relationship among constructs cannot be seen to occur as a result of measurement error. As a result, the scales to be used in the present study can be considered as robust and appropriate to test the hypothesis.

4.3 Normality Assessment

4.3.1 Shapiro–Wilk Test Results

Normality was also tested using the Shapiro-Wilk test, with results presented in Table 3. The test values of algorithm response time ($W = 0.9842$, $p = 0.0022$), interface aesthetics ($W = 0.9846$, $p = 0.0027$), and user satisfaction ($W = 0.9887$, $p = 0.0196$) show statistically insignificant values of the normality violations.

ISSN 2959-6149

Table 3: Results of Shapiro–Wilk Normality Test

Variable	W Statistic	p-value
Response_Time	0.9842	0.0022
Aesthetics	0.9846	0.0027
User_Satisfaction	0.9887	0.0196

It is worth mentioning, though, that large sample sizes tend to be very sensitive to the Shapiro- Wilk test. Having 300 participants, any slight abnormality in the normality can lead to statistically significant results. The data were found to be appropriate to undergo a parametric analysis, since its typically normal distributions were evident in the histograms, and multiple regression analysis can tolerate weak cases of normality.

4.4 Correlation Analysis

4.4.1 Pearson Correlation Results

Bivariate correlation coefficients were calculated to determine the bivariate associations between the research variables. In Table 4, there was a high-correlation value between algorithm response time and user satisfaction ($r = 0.6060$), meaning that perception of faster response times is related to a high level of user satisfaction. The given discovery is consistent with the previous studies that stressed the significance of the system responsiveness in the definition of user experiences.

Table 4: Pearson Correlation Matrix of Study Variables

Variable	Response_Time	Aesthetics	User_Satisfaction
Response_Time	1.0000	-0.0725	0.6060
Aesthetics	-0.0725	1.0000	0.3631
User_Satisfaction	0.6060	0.3631	1.0000

The interface aesthetics also showed a positive correlation with the user satisfaction ($r = 0.3631$), though the association was not very strong. This implies that visual design brings satisfaction, but the extent may not be as high as those that relate to performance. The relationship between the response time of the algorithm and the interface aesthetics was low and negative ($r = -0.0725$) which shows that there is little overlap in the two constructs. Those relationships are further supported visually in Figure 3 with a correlation heatmap which gives a clear visual example of the stronger relationship between response time and user satisfaction compared to aesthetics.

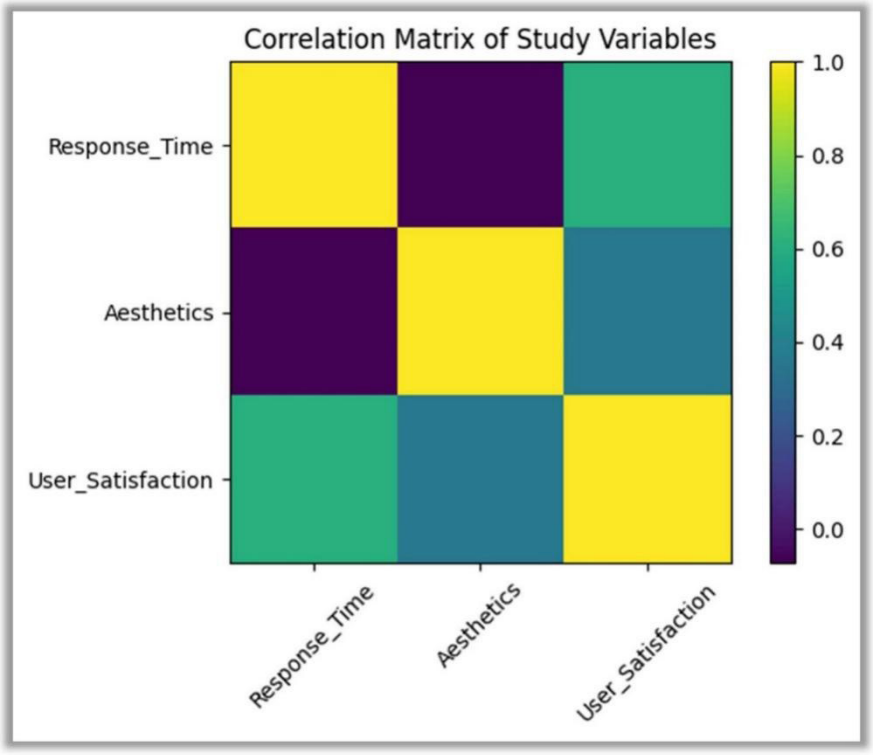

Figure 3: Correlation Heatmap of Algorithm Response Time, Interface Aesthetics, and User Satisfaction

4.5 Multicollinearity Diagnostics

4.5.1 Variance Inflation Factor (VIF) Analysis

The test of Multicollinearity was performed by the value of the Variance Inflation Factor, and it is represented by Table 5. Response time of both the algorithms and interface aesthetics gave VIF values of 1.0053, a lot lower than the standard value of 5. The implications of these results include the fact that the issue of multicollinearity is not an issue in the regression model. The fact that there is no multicollinearity means that each of the independent variables plays its unique role in explaining the changes in user satisfaction that would enhance the validity of the regression results.

Table 5: Variance Inflation Factor (VIF) Values for Independent Variables

Variable	VIF
Constant	22.2178
Response_Time	1.0053
Aesthetics	1.0053

4.6 Hypothesis Testing Using Multiple Regression Analysis

4.6.1 Regression Model Summary

The study used multiple regression to determine the joint actions of the response time of the algorithms and aesthetics of the interface towards user satisfaction. The regression model on the whole showed a high level of explanatory strength with the percentage of variance in user satisfaction represented by the independent variables being quite high. The statistical significance of the model meant that the response time and aesthetics have a joint predictive power on user satisfaction in Android note taking applications.

4.6.2 Regression Coefficients and Significance Testing

The significance levels and regression coefficients are available in Table 6. The best predictor of user satisfaction is algorithm response time ($\beta = 0.5691$, $t = 16.0024$, $p < 0.001$), indicating that increases in perceived performance

ISSN 2959-6149

generate substantial changes in user satisfaction. The effects of interface aesthetics were also quite strong (β = 0.3687, t = 10.2995, p < 0.001), but it was not as strong.

Table 6: Multiple Regression Results Predicting User Satisfaction

Predictor	Beta	t-value	p-value
Constant	0.2155	1.3476	0.1788
Response_Time	0.5691	16.0024	< 0.001
Aesthetics	0.3687	10.2995	< 0.001

The constant was not significant, indicating that the independent variables are the main determinants of user satisfaction, and not base factors. Such results are empirical support that the issues of performance are more important than visual design when it comes to influencing user satisfaction in the context of productivity-based mobile applications.

4.6.3 Visual Representation of Regression Relationships

The regression relationships are presented in visual form in Figures 4 and 5. The relationship between the time of responding of the algorithm and the user satisfaction is strongly positive as indicated by Figure 4 and the scores of user satisfaction concentrate around the higher end of the response time ratings. Figure 5 additionally indicates qualitatively the positive relationship between interface aesthetics and user satisfaction is more scattered, which supports regression results on the strength of effects relative to each other.

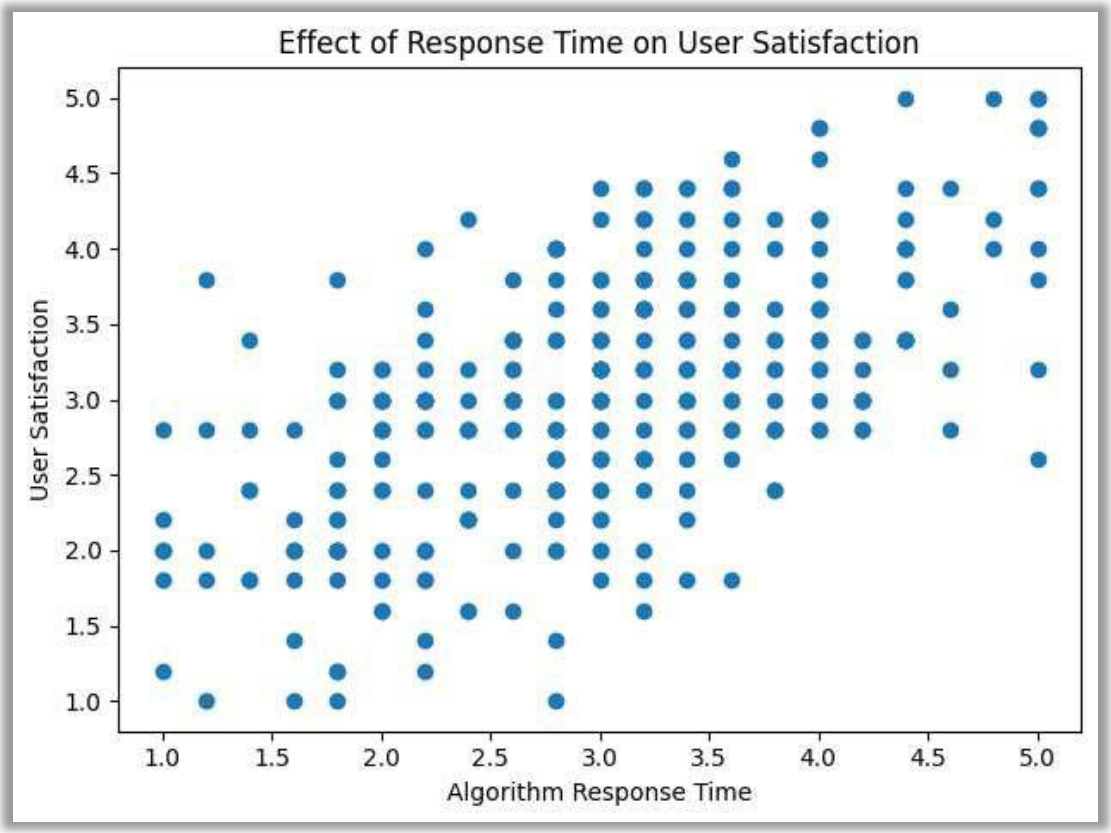

Figure 4: Scatter Plot of Algorithm Response Time and User Satisfaction

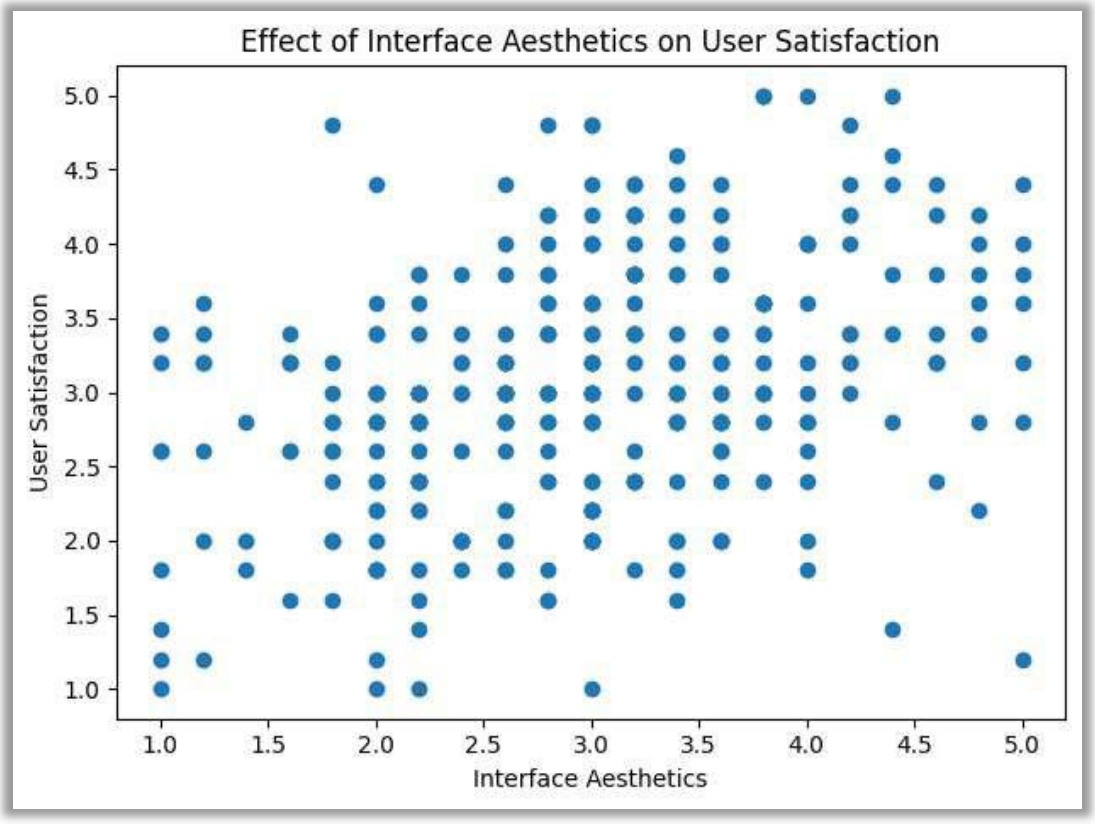

Figure 5: Scatter Plot of Interface Aesthetics and User Satisfaction

4.7 Summary of Hypothesis Testing Results

4.7.1 Hypotheses Decision Outcomes

The results of hypothesis testing have been summarised in Table 7. Hypothesis H1, which postulates that the response time of the algorithms has no significant influence on user satisfaction, was confirmed. It also supported hypothesis H2, which implied that interface aesthetics make a rich contribution to user satisfaction. This was established in hypothesis H3, which argued that response time was more significant than aesthetics in terms of satisfaction, as seen in correlation and regression outcomes. These results, however, together highlight the importance of system responsiveness in developing user satisfaction in Android note-taking apps, and, in the same breath, the role of visual design as complementary.

Table 7: Summary of Hypotheses Testing Results

Hypothesis	Statement	Supported
H1	Algorithm response time significantly affects user satisfaction	Yes
H2	Interface aesthetics significantly affects user satisfaction	Yes
H3	Response time has a stronger effect than aesthetics	Yes

4.8 Conclusion

The research aimed to analyze the comparative role of algorithm response time and interface aesthetics in user satisfaction in Android note-taking applications. The study uses empirical information of 300 people to present provable evidence that performance and visual design serve to influence user experiences, even though they influence them to varying degrees. The results reveal that the amount of user satisfaction is more highly influenced by the response time of the algorithm compared to the interface aesthetic through the prism of productivity-oriented mobile applications. Descriptive and exploratory analyses indicated that there were equal distributions across all variables of the study, indicating that the data was suitable to carry out a given inferential analysis. Stability calcu-

ISSN 2959-6149

lations also confirmed that the measuring tools were very stable and this was more reassuring on the relationship that was observed.

Correlation analysis revealed that the response time and user satisfaction had a strong positive relationship, whilst interface aesthetics was moderately able to relate. These trends were strengthened using multiple regression analysis and response time was found to present the strongest predictor of satisfaction. Theoretically, the results confirm theories of human-computer interaction based on the primary role of the system performance in creating user impressions and emotional reactions. Although the aesthetics of the interface are part of the pleasure and perceived quality, the latency of the system response seems to hinder it even worse than the deficiencies in the visual presentation. This is especially applicable in note-taking applications that prioritize efficiency, speed, and reliability to complete tasks.

In practice, the research can be of great use to mobile application developers and designers. Instead of focusing on aesthetic improvements, the initial focus should be on algorithmic efficiency, latency minimisation, and smooth interaction. Visual design must be viewed as a supplemental aspect, which was satisfactory after acceptable performance standards were achieved. The contributions notwithstanding, there are limitations to the study as experimental prototypes might not represent in all aspects the complexity of the real-life application and future research can expand this study and include longitudinal designs or behavioural usage rates. The research is able to conclude that appearance is less important than performance in Android note-taking application software and responsiveness is a major pillar of user satisfaction.

5. Evaluation

The research project was a great experience of interaction with theoretical and practical issues of the mobile user experience research. The structured quantitative design of the study is one of its great benefits since it allowed for the manipulation of the algorithm response times and interface aesthetics in a systematic fashion and controlled extraneous variables. My ability to develop and analyse a dataset of 300 individuals allowed me to become more familiar with the concept of large- sample statistical analysis, and I am now much more confident in interpreting empirical findings. Performing exploratory data analysis and normality tests supported the value of ensuring that the sdata are important and the subsequent hypothesis testing. The understanding of Cronbach alpha values and multicollinearity diagnostics also helped me to appreciate the importance of rigorous measurement practices, which are very crucial in generating credible and defendable research results.

Although experimental prototypes were theoretically able to ensure a high level of variance control, they might not be as realistic as the complexity and circumstances inherent in real-life commerce use. The trade-off between internal and ecological reality was conservative and was seen by this limitation, which can be resolved in the future by using experimental designs and data on actual usage. Although at the beginning, visual design was believed to contribute equally to the level of satisfaction. The findings, however, have shown that performance efficiency is in most cases given preference on the users compared to the visual appeal of the applications in productivity-oriented applications. This observation has helped me to form my opinion about mobile application design using functionality and responsiveness as cornerstones that cannot be considered peripheral issues.

References

Abbas, T., Gadiraju, U., Khan, V.-J., & Markopoulos, P. (2022). Understanding User Perceptions of Response Delays in Crowd-Powered Conversational Systems. *Proceedings of the ACM on Human-Computer Interaction*, *6*(CSCW2), 1–42. https://doi.org/10.1145/3555765

Al-Shamaileh, O., & Sutcliffe, A. (2023). Why people choose Apps: An evaluation of the ecology and user experience of mobile applications. *International Journal of Human-Computer Studies*, *170*, 102965. https://doi.org/10.1016/j.ijhcs.2022.102965

Diederich, S., Brendel, A. B., Morana, S., & Kolbe, L. (2022). On the design of and interaction with conversational agents: An organizing and assessing review of human-computer interaction research. *Journal of the Association for Information Systems*, *23*(1), 96–138. https://doi.org/10.17705/1jais.00724

Grabowski, A., Bereska, D., Probierz, E., & Gałuszka, A. (2024). The influence of human-computer interface on usability and technology acceptance of VR-based shooting training with a comparison with typical shooting range. *Displays*, *81*, 102621. https://doi.org/10.1016/j.displa.2023.102621

Hasan, R. (2025). A Systematic Review Of Human-AI Collaboration In It Support Services: Enhancing User Experience And Workflow Automation. *American Journal of Interdisciplinary Studies*, *6*(3), 01–37. https://doi.org/10.63125/0fd1yb74

Indriastiningsih, E., Violin, V., Syafri, M., Nurbakti, R., & Judijanto, L. (2023). Analysis of The Influence of Customer Satisfaction, Experiental Marketing and E-Service Quality on Loyalty of KAI Commuter Customers. *Jur-*

nal Sistim Informasi Dan Teknologi, 69–73. https://doi.org/10.60083/jsisfotek.v5i3.305
Jansson, M., Liisanantti, J., Ala-Kokko, T., & Reponen, J. (2022). The negative impact of interface design, customizability, inefficiency, malfunctions, and information retrieval on user experience: A national usability survey of ICU clinical information systems in Finland. *International Journal of Medical Informatics*, *159*, 104680. https://doi.org/10.1016/j.ijmedinf.2021.104680
Kaşlı, K., Doğan, M., Özal, C., Doğan, Y., Kılınç, M., & Aksu Yıldırım, S. (2025). The Effects of Foam Rolling after Task-oriented Circuit Training on Gait, Balance, and Range of Motion in Parkinson's Disease: A Randomized Controlled Trial. *Neurodegenerative Diseases*. https://doi.org/10.1159/000550230
Onwudebelu, U., Fasola, O., & Obinna-Isilebo, C. K. (2025). Empowering Undergraduates through Technology: Designing and Implementing a Lecture Slides-Notes-Based Bucket List for Enhanced Productivity. *Faculty of Natural and Applied Sciences Journal of Mathematical and Statistical Computing*, *2*(2), 23–51. https://www.fnas-journals.com/index.php/FNAS-JMSC/article/view/725
Pan, H., Ding, P., Wang, F., Li, T., Zhao, L., Nan, W., Fu, Y., & Gong, A. (2024). Comprehensive evaluation methods for translating BCI into practical applications: Usability, user satisfaction and usage of online BCI systems. *Frontiers in Human Neuroscience*, *18*, 1429130. https://doi.org/10.3389/fnhum.2024.1429130
Pergantis, M., Katsaounidou, A., Lamprogeorgos, A., & Giannakoulopoulos, A. (2026). Aesthetics and Usability in Digital Art Repositories: Using the iMedius Platform to Collect User Feedback Through Attention Tracking. *Arts*, *15*(1), 9. https://doi.org/10.3390/arts15010009
Pushpakumar, R., Sanjaya, K., Rathika, S., Alawadi, A. H., Makhzuna, K., Venkatesh, S., & Rajalakshmi, B. (2023). Human-computer interaction: Enhancing user experience in interactive systems. *E3S Web of Conferences*, *399*, 04037. https://doi.org/10.1051/e3sconf/202339904037
Ridwan, I. B., & Addo, S. (2025). Multi-objective optimization in business analytics: Balancing profitability, risk exposure, and sustainability in strategic decision-making. *Int J Adv Res Publ Rev*, *2*(5), 89–111. https://doi.org/10.55248/gengpi.6.0525.1718
Shama, S. H., Poojary, S. S., Kumar, S., & Kotian, A. L. (2024). Review on Existing Note-Taking and Task-Management Apps. *International Journal*, *13*(2). https://doi.org/10.30534/ijacst/2024/021322024
Veronica, P., & Soriero, D. (2024). *Feasibility study of intraoperative surgical navigation with focus on ureteral identification using the EVA system on an animal model.* https://hdl.handle.net/11567/1175655

Appendix

User Experience Survey: Android Note-Taking Applications
Response Format:
All items are measured using a 5-point Likert scale:
1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree
Section A: Demographic and Background Information
1) I regularly use Android smartphones.
☐ Yes
☐ No
2) I have used note-taking applications on my smartphone before.
☐ Yes
☐ No
3) How frequently do you use note-taking applications?
☐ Daily
☐ Several times a week
☐ Occasionally
☐ Rarely
4) Age group:
☐ Under 20
☐ 20–29
☐ 30–39
☐ 40–49
☐ 50 and above
5) Gender:
☐ Male
☐ Female
☐ Prefer not to say
Section B: Perceived Algorithm Response Time
6) Please indicate your level of agreement with the following statements regarding system performance.
7) The application responded quickly to my actions.
8) There was minimal delay when saving or loading notes.
9) The system felt smooth during interaction.
10) The response time met my expectations for a note-taking application.
11) Delays, if any, did not disrupt my workflow.
Section C: Interface Aesthetics
12) Please indicate your level of agreement with the following statements regarding the visual design of the application.
13) The interface of the application was visually appealing.
14) The layout of the application was clear and well organised.
15) The colour scheme was pleasant and comfortable to

ISSN 2959-6149

view.

16) The text and typography were easy to read.

17) The visual design enhanced my overall experience with the application.

Section D: User Satisfaction

18) Please indicate your level of agreement with the following statements based on your overall experience.

19) I am satisfied with my overall experience using the application.

20) The application met my expectations as a note-taking tool.

21) I found the application enjoyable to use.

22) I would be willing to use this application regularly.

23) I would recommend this application to others.

Section E: Comparative Perceptions

24) System speed was more important to me than visual appearance while using the application.

25) A visually appealing interface can compensate for minor performance delays.

26) Fast response time increases my satisfaction more than interface design.