The Impact of Perceived Ease of Use and System Reliability on Google Drive Usage Through User Satisfaction Among Students at Faculty of Economics and Business at Universitas Negeri Jakarta

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Abstract: This study investigates the impact of perceived ease of use and system reliability on the usage of Google Drive through user satisfaction among students at the Faculty of Economics and Business at State University of Jakarta. It aims to explore how ease of use and system reliability influence student satisfaction and, subsequently, the usage of Google Drive as a cloud storage solution for academic activities. The study adopts a quantitative approach, collecting data through surveys. The findings suggest that both perceived ease of use and system reliability have a positive impact on user satisfaction, which in turn enhances the frequency and intensity of Google Drive usage among students. The study contributes to understanding the factors influencing user satisfaction and offers insights for improving cloud platform design, especially in the context of higher education.

Keywords: Google Drive, ease of use, system reliability, user satisfaction, student collaboration

Introduction

The rapid growth of information and communication technology (ICT) has profoundly transformed almost every aspect of human life, particularly in how we work with data and collaborate. Cloud computing, specifically cloud-based storage and sharing systems, has revolutionized the way information is accessed and stored. These platforms allow users to work from any location on any device, streamlining the process of managing digital content and enhancing collaboration.

Google Drive is one of the most popular cloud-based storage services, widely used for storing personal data, business documents, and academic work. For students, platforms like Google Drive have become essential tools. It allows students to manage coursework, collaborate on group projects, and share documents in real-time, making it especially useful in today's education system where access to materials from different locations is a necessity.

At Universitas Negeri Jakarta (UNJ), particularly in the Faculty of Economics and Business (FEB), Google Drive is an essential tool. It is used for storing course materials, sharing assignments, collaborating on group projects, and managing academic documents. Google Drive enables students to work together regardless of location, improving the overall learning experience and providing an efficient solution to manage the increasing volume of academic work.

Despite its widespread use, students still encounter several challenges when using Google Drive. These challenges often affect user satisfaction, which is typically influenced by ease of use and system reliability. How users perceive the platform can significantly impact their decision to continue using it in the long run. Understanding how these factors affect user satisfaction is crucial for improving the experience of students who rely on Google Drive for academic work.

Ease of use refers to how easily users can navigate and operate a platform. A user-friendly design allows students to focus on their work rather than struggle with complicated navigation. For Google Drive, this involves an intuitive interface and easy access to its features. A platform that is easy to use improves

productivity, reduces learning time, and encourages consistent use.

System reliability is another critical factor affecting user satisfaction. A reliable platform ensures smooth functioning without disruptions, which is essential for students who need to upload, download, and share files without encountering issues like slow upload speeds, syncing errors, or data loss. While Google Drive is generally reliable, issues like connectivity problems or server maintenance can affect its usability.

Students at FEB UNJ often face challenges with Google Drive's system reliability and ease of use. Issues like limited storage, syncing failures, and difficulty accessing shared documents are common complaints. For example, the 15GB free storage limit is quickly filled, forcing students to delete old files to make room for new ones. Additionally, technical problems such as failed uploads and disappearing files can disrupt students' work, especially when deadlines approach.

This research aims to explore how ease of use and system reliability impact user satisfaction among students at FEB UNJ. The study will provide insights into what students value most in a cloud-based storage platform and how these factors influence their decision to continue using Google Drive. It will also identify areas where Google Drive can improve to better meet user needs.

The primary goals of this research are to assess the relationship between ease of use and user satisfaction and examine how system reliability impacts user satisfaction. Additionally, the study will look at how both factors work together to influence the continued use of Google Drive. The findings will provide valuable recommendations for improving both the technical and functional aspects of Google Drive, ensuring it remains a useful tool for students.

In conclusion, Google Drive plays a vital role in the academic lives of students, but there is always room for improvement. This research will help enhance the platform, making it more reliable, user-friendly, and essential for academic success. By improving the user experience, we aim to contribute to the development of digital tools that support students' academic needs in a more efficient and accessible way.

Literatur Review
Perceived Ease of Use
Ease of use is one of the important dimensions in the technology acceptance model that explains how user perceptions of a system impact usage intentions and behavior. (Rossiman et al., 2021) explain that the ease of use of Google Drive can be seen from how students are able to access files, share documents, and work together in real time with a simple interface. Students tend to use this platform because it does not require complex technical training. This perceived ease of use greatly influences technology acceptance in a college environment, especially when users feel immediate benefits without a high usage burden.

System Reliability
System reliability refers to the ability of technology to operate stably, safely, and efficiently. (Savithi & Suttidee, 2024) state that reliability includes data confidentiality, service stability, information authenticity, and processing efficiency. In the context of Google Drive, this reliability is important to ensure fast, secure, and hassle-free access to documents. A reliable system increases trust and encourages continued use by students in academic activities.

User Satisfaction
User satisfaction in the context of cloud-based systems is measured by users' actual experience compared to their initial expectations. (Taqi et al., 2024) in their research used the cloud usability model to assess the level of user satisfaction with Google Drive. They found that aspects such as ease of access, interface appearance, system response speed, and the functioning of collaboration features significantly increased user satisfaction. Positive experiences during use encourage users to continue using the platform in academic activities.

The Use of Google Drive
Google Drive has become one of the main platforms in student academic activities, especially in supporting collaborative learning and online document management. (Rossiman et al., 2021)showed that students use Google Drive to store course materials, share files, and work together synchronously and asynchronously. The integration of Google Drive with other applications such as Google Docs, Sheets, and Classroom also strengthens its position as a key support tool in technology-based learning.

Conceptual Model
This study is entitled "The Effect of Ease of Use (X1) and System Reliability (X2) on Google Drive Usage (Y)

Through User Satisfaction (Z): Case Study at the Faculty of Economics and Business, State University of Jakarta 2025". This study aims to examine the extent to which perceptions of ease of use and system reliability affect the intensity of student use of Google Drive, either directly or indirectly through the mediating variable, namely user satisfaction. To support the analysis, several relevant main theories are used, namely Perceived Ease of Use Theory, User Satisfaction Theory, System Reliability Theory, as well as special studies on the use of Google Drive among students. Based on the formulation of the problem and the conceptual model used, this study has seven main hypotheses that will be tested empirically.
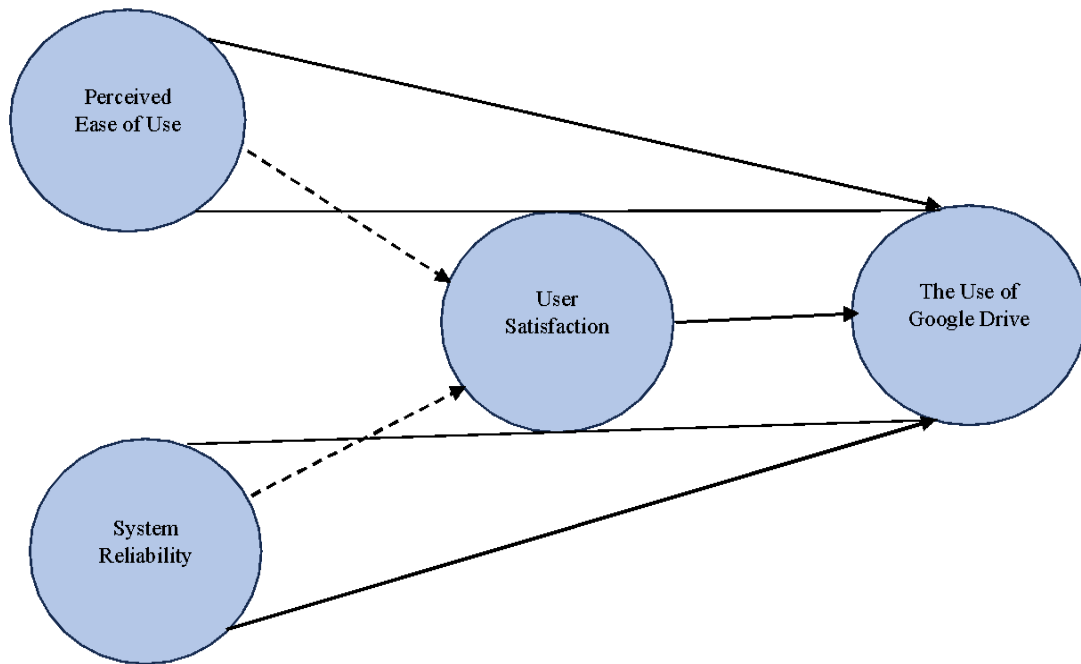

Figure 1: Hypotheses

Methods

This research uses a quantitative causal design to examine the impact of ease of use and system reliability on Google Drive usage, with user satisfaction serving as a mediating variable. A correlational approach is employed to understand the relationships between these variables and measure the direct and indirect effects between them.

The population for this research consists of active students from the Faculty of Economics and Business (FEB) at Universitas Negeri Jakarta (UNJ) who use Google Drive for academic activities. The sample is selected using purposive sampling, with the following criteria: active students enrolled in the 2024/2025 academic year, regular users of Google Drive for storing course materials, sharing assignments, and collaboration, and willing to complete the questionnaire accurately and thoroughly. The estimated sample size is between 50 to 150 respondents, calculated using the Slovin formula with a 95% confidence level.

Data will be collected through an online questionnaire using Google Forms, distributed via WhatsApp groups to students meeting the criteria. The questionnaire will use a Likert scale to assess students' perceptions regarding: ease of use (access, navigation, and feature usage), system reliability (platform stability and performance), and user satisfaction (subjective evaluation of their experience with Google Drive). Data collection will take place from March to June 2025, ensuring it does not interfere with the academic breaks.

The collected data will be analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The analysis process includes validity testing (convergent and discriminant) using outer loadings and Fornell-Larcker criterion, reliability testing using Cronbach's Alpha and Composite Reliability, and hypothesis testing to examine the relationships between ease of use, system reliability, user satisfaction, and Google Drive usage. The study will also conduct mediation analysis to examine whether user satisfaction mediates the effect of ease of use and system reliability on Google Drive usage.

Ethical considerations will be adhered to by ensuring that participation is voluntary, and confidentiality of

the data is maintained. All data collected will be used solely for academic purposes. Ethical approval will be obtained before the study begins to ensure that the research complies with ethical standards.

Result and Discussion

To test the feasibility of the research model and the strength of the relationship between constructs, a series of analyses were conducted on the validity, reliability, discriminant, multicollinearity, and predictive ability of the model. The following is a summary of the results of the analysis:

The results of outer loadings show that all indicators have values above 0.7, which means that convergent validity is very well met. Indicators in the X1 construct such as X1.1 (0.883), X1.2 (0.910), and X1.5 (0.873) show a strong relationship with their constructs. Similarly, for the other constructs (X2, Y, and Z), where all indicators are in the range of 0.734 to 0.897, indicating that the indicators are able to explain the construct well.

Reliability testing shows that all constructs have Cronbach's Alpha and Composite Reliability values above 0.7. This indicates that the instruments used are highly reliable and have good internal consistency. For example, the Cronbach's Alpha value for X1 is 0.924 and the Composite Reliability is 0.926, which indicates that each indicator can be trusted in measuring related constructs.

Discriminant validity has also been confirmed through Fornell-Larcker testing. The AVE value for each construct is higher than its correlation with other constructs. For example, the AVE for X1 of 0.767 is higher than its correlation with X2 (0.629) and Y (0.728), which means that each construct is unique and does not overlap with each other in measuring indicators.

Multicollinearity testing shows that all Variance Inflation Factor (VIF) values are below the threshold of 5. This indicates that there is no significant multicollinearity between indicators. For example, the VIF for indicator X1.1 is 3.457 and X2.1 is 1.981, indicating that each indicator stands alone and is not redundant to other indicators.

The R-Square value for the User Satisfaction variable (Z) is 0.742 and for Google Drive Usage (Y) is 0.727. This means that this model is able to explain more than 70% of the variance in the two dependent variables. The adjusted R-Square value which is only slightly lower (Z = 0.738 and Y = 0.720) shows that the model remains stable and has strong predictive ability.

The results of the F-Square analysis show the effect size of each construct. Ease of Use (X1) has a moderate effect on the model with an F-Square value of 0.160. System Reliability (X2) has a small effect (0.085), but remains significant, while User Satisfaction (Z) has a moderate effect on Google Drive usage with a value of 0.120. These values indicate the relative contribution of each construct in explaining the variation in the model.

Tabel 2: Path Coefficient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 -> Y	0.100	0.096	0.099	1.012	0.311
X1 -> Z	0.592	0.582	0.070	8.488	0.000
X2 -> Y	0.138	0.136	0.080	1.718	0.086
X2 -> Z	0.356	0.361	0.067	5.281	0.000
Z -> Y	0.663	0.663	0.102	6.473	0.000

Path coefficient analysis results show that X1 has a significant effect on Z (p value = 0.000) but has no significant effect on Y (p value = 0.311). This suggests that X1 plays a role in shaping Z, but its effect on Y is not strong enough to be considered significant. Meanwhile, X2 has a significant effect on Z (p value = 0.000), but its effect on Y is only almost significant (p value = 0.086). Z has a significant effect on Y (p value = 0.000), which indicates that Z is a very important variable in influencing Y.

Tabel 3: Specific Indirect Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 -> Z -> Y	0.392	0.385	0.071	5.554	0.000
X2 -> Z -> Y	0.236	0.241	0.064	3.708	0.000

The mediation effect (Specific Indirect Effect) shows that Z acts as a significant mediator between X1 and Y, with a p value = 0.000, which indicates that the relationship between X1 and Y occurs through Z. The mediation effect for the X2 -> Z -> Y pathway is also significant (p value = 0.000), indicating that Z also mediates the effect of X2 on Y. These two pathways have very high T-Statistics values (5.554 for X1 -> Z -> Y and 3.708 for X2 -> Z -> Y), which confirms that Z plays a key role in the relationship between these variables.

Based on the findings, This study finds that Perceived Ease of Use (X1) has a significant positive impact on User Satisfaction (Z), in line with the Technology Acceptance Model (TAM), which highlights that users' perceptions of how easy a system is to use directly influence their willingness to accept and use the technology (Davis, 1989). In this context, the ease of use of Google Drive is reflected in how students can effortlessly access files, share documents, and collaborate in real time with a simple and intuitive interface. As Rossiman et al. (2021) note, students are likely to use Google Drive because it does not require complex technical training, thus increasing satisfaction with the platform. This ease of use directly translates into a higher level of user satisfaction, which, in turn, enhances the likelihood of frequent usage in academic contexts.

Similarly, System Reliability (X2) plays a crucial role in fostering User Satisfaction (Z). As Savithi and Suttidee (2024) emphasize, system reliability encompasses data confidentiality, service stability, information authenticity, and processing efficiency. For students using Google Drive, a reliable platform ensures smooth access to documents, fast synchronization, and secure data storage, leading to greater satisfaction. When students experience fewer technical disruptions, such as synchronization issues or downtime, trust in the system increases, fostering greater user satisfaction. This ultimately motivates students to continue using Google Drive for their academic needs.

However, despite the significant effects of both Perceived Ease of Use and System Reliability on User Satisfaction, neither of these factors shows a direct impact on Google Drive Usage (Y). This suggests that while ease of use and system reliability enhance user satisfaction, other factors—such as user motivation, platform features, or specific preferences—likely contribute to their decision to use the platform more regularly.

Interestingly, User Satisfaction (Z) serves as a significant mediator between Perceived Ease of Use and Google Drive Usage. This finding supports the hypothesis proposed by (Bhattacherjee, 2001), who argued that user satisfaction influences the likelihood of continued technology usage. Therefore, while both Perceived Ease of Use and System Reliability contribute to user satisfaction, it is this satisfaction that ultimately drives students to use Google Drive more frequently in their academic activities.

Overall, this study demonstrates that Perceived Ease of Use and System Reliability indirectly affect Google Drive Usage through their impact on User Satisfaction. These results underscore the importance of enhancing user perceptions of ease of use and system reliability to promote sustained platform usage. For platform managers, such as those overseeing Google Drive, and educational institutions aiming to optimize the use of cloud technologies in academic settings, these findings suggest that improving both ease of use and system reliability will likely lead to greater user satisfaction and more frequent usage of the platform in educational contexts.

Conclusion

This study examined the impact of Perceived Ease of Use (PEOU) and System Reliability on User Satisfaction and Google Drive Usage among students at the Faculty of Economics and Business (FEB) at Universitas Negeri Jakarta (UNJ). The results showed that both PEOU and System Reliability significantly affected User Satisfaction, with PEOU having a stronger impact. However, neither factor directly influenced Google Drive Usage. User Satisfaction played a key role as a mediator, enhancing the relationship between PEOU and System Reliability with the usage of the platform. The model effectively explained a substantial portion of the variance in both Google Drive Usage and User Satisfaction, indicating that the model had strong predictive power. For Google Drive developers, it is recommended to focus on improving the platform's interface, stability, and security to increase user satisfaction. Educational institutions should consider providing training to improve ease of use and establish guidelines to maximize Google Drive's potential in academic settings. Future research could expand the sample to include other universities and investigate additional factors such as internet connectivity and technical support. This study emphasizes the importance of PEOU, System Reliability, and User Satisfaction in enhancing the adoption and continued use of platforms like Google Drive. Educational institutions and developers can utilize these insights to improve user

experience and optimize the use of cloud-based platforms in academic environments.

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