Comparative Analysis of Usability and Efficiency of Interface Design Process in Figma and Adobe XD

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Abstract: A variety of platforms are now focused on improving and speeding up the design process by harnessing the growing use of digital technologies in user interface (UI) design. Adobe XD and Figma stand out as two of the most popular tools for user interface and user experience design. User experience can differ due to variations in usability and the effectiveness of the design process, even when both share similar core functions. This study aims to assess the effectiveness and practicality of Adobe XD and Figma. This research utilises a quantitative descriptive approach, measuring task completion times and leveraging the System Usability Scale (SUS) for evaluation. Twenty students signed up for an informatics programme, each bringing with them a solid background in both systems, and successfully completed the survey. Data was gathered using SUS surveys and time observations carried out during the performance of design tasks. According to the data, Figma boasts an impressive average SUS score of 62.75%, while Adobe XD trails behind with a score of 46.75%. Figma outperformed Adobe XD by around 27.98% in executing design tasks. The findings reveal that Figma outshines Adobe XD in terms of efficiency and user-friendliness, especially when it comes to real-time collaboration and a sleek, streamlined interface. These findings aim to guide educational institutions and UI/UX designers in choosing the ideal design platform that aligns with user needs.

Keywords: Usability, Design Efficiency, UI/UX, Figma, Adobe XD, System Usability Scale (SUS)

1. Introduction

The development of digital technology has been transformative in the field of designing user interfaces and user experiences. Usability and work productivity have recently become principal objectives in the design of user interfaces and user experiences [1]. Applications such as Adobe XD and Figma have gained prominence as contemporary interface designers depend on collaborative design platforms. The web-based design platform Figma enables designers to collaborate in real-time, whereas the professional industry predominantly employs Adobe XD, a prototyping software within the Adobe Creative Cloud suite. Both serve similar primary objectives; however, they differ significantly in terms of design efficacy and user experience. This warrants further examination due to the significance of time management and collaboration in the design process within disciplines such as education and the arts. [2]

Previous research indicates that students' proficiency in utilising Adobe XD improves their capacity to foster consumer creativity and deepen their understanding of user interface design. According to other research, the usability of complex design applications remains a concern; therefore, testing utilising the System Usability Scale (SUS) is essential for an objective assessment of user experience [3]. Multiple studies have also demonstrated the importance of streamlined design processes in enhancing the productivity of UI/UX development teams.

With this framework in place, the research herein examines and contrasts Figma and Adobe XD with a focus on their effectiveness in supporting the user interface design process in terms of efficacy and user-friendliness. To assist academic institutions and Indonesia's creative sector in selecting the most suitable design platform, this study will gather and analyse pertinent data. Beyond offering valuable insights for project-oriented UI/UX education, this research should also aid educational institutions in identifying effective design tools to support this form of learning.

This study also provides additional insights into how usability influences the efficacy of the creative process in design tasks. A highly usable platform offers a more comfortable work experience, reduced error rates, and accelerated task completion. The advancement of design technology is driven by the goal of making designers' work simpler, more efficient, and more enjoyable, aligning with this fundamental purpose. Therefore, the findings of this research should hold practical significance for both practitioners in the creative industries and academic communities [4].

The selection of design tools is also a critical factor in optimising team productivity, particularly given the prevailing trends in design that emphasise interdisciplinary collaboration. By acquiring proficiency in utilising cloud-based tools such as Figma, designers can transcend the limitations imposed by time, location, and device [5]. Meanwhile, platforms such as Adobe XD continue to be in demand due to their ability to deliver a consistent and cohesive design experience, especially for professionals who are already proficient within Adobe's ecosystem. Gaining insight into the influence of design tools on productivity and work quality can be achieved through a comparison of these two platforms, which also provides a technical perspective.

2.Methods

This study examined two leading design software applications, Figma and Adobe XD, aiming to compare their user interfaces regarding effectiveness and ease of use. User collaboration, design efficiency, and work systems are each uniquely defined and separate from one another. This study's findings present valuable insights for both academic environments and the creative industries, paving the way for improved learning methodologies and innovative UI/UX design practices. Research conducted across various digital platforms clearly shows that effective UI/UX design enhances system performance and boosts user engagement quality. This document outlines the procedures utilised, including literature reviews, data collection, and data processing, to facilitate the successful implementation of the research.

A. Literature Study

Conducting a literature review is the first stage in developing a solid theoretical grounding and in-depth familiarity with the subject under investigation. In this step, we examine scholarly journals, books, and articles from prior studies for information on topics like Figma and Adobe XD software, design efficiency, and usability. The following are among the main points covered in this literature review:

1. The Usability Concept is a measuring approach for evaluating academic portals and other digital systems that takes into account factors like efficiency, user happiness, and simplicity of use. It is based on the System Usability Scale (SUS) and the ISO 9241-11 standard [7].
2. An essential metric for gauging user productivity while using design tools is the time it takes to finish a design activity; this idea is also used to evaluate the user interface and user experience of educational websites, as discussed in The Concept of Interface Design Efficiency [8].
3. This section compares and contrasts the Figma and Adobe XD platforms, touching on topics such as the technical specs and features of each programme, as well as their respective

capabilities for real-time collaboration and Adobe system integration, all of which are pertinent to the development of UI/UX in web-based information systems [9].
4. Previous Research: a number of pertinent studies have shown that user-based design and the SUS assessment method may significantly enhance the UI/UX of websites and mobile apps [10].

In order to compare Figma and Adobe XD in terms of their design process efficiency and usability, this literature review provided the theoretical and empirical groundwork for developing research instruments and identifying the factors to be used in the comparison.

B. Data Collection

In order to gather data, we sent out questionnaires based on the System Usability Scale (SUS) and had participants track their design time (time-based efficiency). The goal of the survey was to find out how confident, at ease, and productive users were with the two programmes when it came to carrying out design tasks. Studies examining the usability and practicality of sales information system user interface design have also made use of this SUS-based data gathering technique [11].

Twenty recent graduates with backgrounds in informatics and familiarity with Figma and Adobe XD were chosen to participate in the study. In order to get more accurate and meaningful measurement findings for users with basic abilities in interface design, we used these criteria to choose respondents. The User-Centered Design technique, which emphasises the importance of user engagement in design review, also used this respondent selection methodology based on user experience in their study of user interface redesign [12]. Making a basic app interface in Figma and Adobe XD are two of the design challenge scenarios that will be presented to each responder. After utilising each platform, respondents will be asked to fill out a SUS questionnaire, and the time it takes to perform each activity will be recorded. Software usability and design time efficiency will be determined using data collected via questionnaires and in-person observations.

C. Data Set Processing

Once we had collected enough information from the surveys and time observations, we processed the data. Through data processing, researcher want to find out how Figma and Adobe XD stack up against one another in terms of design process efficiency and usability on average. As an objective way to quantify the quality of system design, UX design research based on Human-Centered Design also uses this usability and efficiency evaluation technique, where SUS calculations and time-based efficiency are used [13]. What follows is an explanation of the data processing steps:

SUS Questionnaire Data Processing

Ten statements on a Likert scale from 1 to 5 make up each survey. The usual SUS assessment technique is used to process the scores for each statement. For positive items, the beginning score is subtracted by one point, and for negative items, the response values are reversed:
a. The score value is lowered by 1 for odd (positive) elements.
b. When dealing with negative elements, the formula is 5 - score.
c. A SUS score (ranging from 0 to 100) is generated by multiplying the total by 2.5. An improved degree of usefulness is indicated by a higher SUS score.

Design Efficiency Data Processing

In order to guarantee methodological consistency and transparency, this research examined efficiency utilising task completion time and Time-Based Efficiency (TBE).

1. Relative Efficiency
   The relative efficiency of Figma and Adobe XD was determined by calculating the percentage difference in the average job completion time using the following:

$$Efficiency\ (\%) = \frac{T_{Adobe\ XD} - T_{Figma}}{T_{Adobe\ XD}} \times 100\%$$

   Where:

   - T_{Figma} = average task completion time using Figma (minutes)

   - $T_{Adobe\ XD}$ = average task completion time using Adobe XD (minutes)

   Compared to Adobe XD, Figma allows quicker work completion, as shown by a better efficiency.

2. Time-Based Efficiency (TBE)
   In order to assess the consistency and efficacy of respondents' job completion times, we used the following formula to compute Time-Based Efficiency (TBE):

$$TBE = \frac{1}{R \times N} \sum_{i=1}^{R} \sum_{j=1}^{N} \frac{1}{t_{ij}}$$

   - t_{ij} = time required by respondent i to complete task j (minute)

   - R = total number of respondents

   - N = total number of tasks

   Greater efficiency and consistency in task execution are indicated by a higher TBE rating.

Comparative Analysis
A quantitative descriptive study was carried out to compare the two systems after we obtained usability and efficiency ratings for each. Tables and graphs show how Figma and Adobe XD compare in terms of efficiency metrics, average System Usability Scale (SUS) ratings, and time to complete tasks.

Reproducibility Statement
The efficiency analysis relies on well-defined variables, methods, and measurement units to allow other researchers to conduct identical experiments and confirm the results.

3. Results and Discussion
 A. Research Data
Twenty participants, all current or former students in the Informatics Study Programme at Teknokrat Indonesia University and other institutions, were surveyed to determine how well these two interface design platforms met our criteria for usability and efficiency. Respondents were chosen using a purposive sample strategy, which involves picking people at random according to predetermined criteria. People who have taken classes, worked on projects, or used Figma and Adobe XD on their own before were considered for this research. So, it's safe to say that all respondents have the fundamental skills needed to provide both platforms both subjective evaluations and objective job outcomes. The UI/UX evaluation study of the Solo Destination app,

which relies on real-life users to provide an accurate description of system usage circumstances in the usability assessment, is likewise in agreement with this user experience-based approach [14]. The research included two separate but related design tasks: making a login page for an application. In order to eliminate bias induced by factors like as familiarity, exhaustion, or work order, the tasks were repeated twice using Adobe XD and Figma, respectively, with constant scheduling. The research was able to objectively quantify platform performance differences by using similar design tasks. This was because the only factors examined were variations in applications, not in task difficulty.

The System Usability Scale (SUS) is a 10-item questionnaire with Likert-scale options ranging from 1 to 5, and it was administered to participants after they finished each assignment. For its extensive measurement of user perceptions, the SUS was selected because to its simplicity and reliability, as well as its extensive usage in usability research. This research used the SUS to collect subjective data on how users felt about the two design platforms in terms of ease of use, confidence, display uniformity, and comfort.

As shown in the usability study of the Shopee app in earlier work, SUS-based measurement techniques are extensively employed in contemporary usability research due to their ability to offer a holistic evaluative image of the degree of efficacy, efficiency, and user happiness in system interactions [15]. Time spent completing tasks served as both subjective and objective variables in this research. On both platforms, the time was recorded in minutes for every reply. A good platform facilitates efficient job completion and is both simple to use and effective, therefore this time measurement is critical for evaluating work efficiency. This research aims to provide a thorough overview of the performance comparison between Figma and Adobe XD by combining subjective data (SUS) and objective data (completion time). Based on the actual experiences of informatics students, this research seeks to establish which platform is more efficient and user-friendly. Here is a comprehensive profile of the respondents used in this research to help paint a better image of their features.

no	Nama	Jenis Kelamin	Program Studi	Lama Pakai Figma (Bulan)	Lama Pakai Adobe XD (Bulan)	Pernah pakai Figma	Pernah pakai Adobe XD
1	Ajie rakhmatan	Laki - Laki	Informatika	1 Tahun	5 Bulan	Ya	Ya
2	Rifki Banda Wijaya	Laki - Laki	Informatika	1 Tahun	6 Bulan	Ya	Ya
3	Alfin sarizan	Laki - Laki	Informatika	5 Bulan	2 Bulan	Ya	Ya
4	Habibie Baehakim	Laki - Laki	Informatika	6 Bulan	3 bulan	Ya	Ya
5	M Dhimas Priyono	Laki - Laki	Informatika	1 Tahun	1 Tahun	Ya	Ya
6	Aditya Muhammad Fadillah Umar	Laki - Laki	Informatika	4 Bulan	8 Bulan	Ya	Ya
7	Ridho Pratama Putra	Laki - Laki	Informatika	1 Tahun	1 Tahun	Ya	Ya
8	Rahmat agung YK	Laki - Laki	Informatika	1 Tahun	4 Bulan	Ya	Ya
9	febriantah	Laki - Laki	Informatika	5 Bulan	5 Bulan	Ya	Ya
10	Yudha Pratama	Laki - Laki	Informatika	1 Tahun	1 Tahun	Ya	Ya
11	Ricky Fajar Adi Putra	Laki - Laki	Informatika	2 Tahun	5 Bulan	Ya	Ya
12	MUHAMMAD RAIHAN	Laki - Laki	Informatika	3 Tahun	1 Tahun	Ya	Ya
13	Maulidan Akmal Gandi	Laki - Laki	Informatika	1 Tahun	3 bulan	Ya	Ya
14	Muhammad Refo Febrian	Laki - Laki	Informatika	4 Bulan	3 bulan	Ya	Ya
15	Mohamad Juan Pablo	Laki - Laki	Informatika	6 Bulan	7 Bulan	Ya	Ya
16	Nanda Alva Febrian	Laki - Laki	Informatika	2 Bulan	3 bulan	Ya	Ya
17	Nur fadila	Laki - Laki	Informatika	7 Bulan	5 Bulan	Ya	Ya
18	Putri salsabila	Perempuan	Informatika	8 Bulan	2 Bulan	Ya	Ya
19	Adib Ulinuha El Majid	Laki - Laki	Informatika	6 Bulan	2 Bulan	Ya	Ya
20	Nur Fadila	Laki - Laki	Informatika	2 Bulan	8 Bulan	Ya	Ya

Figure 1. Respondent Profile Data

 B. Usability Assessment Using the System Usability Scale (SUS)
The System Usability Scale (SUS) is a standard instrument for measuring the usability of a system. The SUS consists of 10 statements divided into two groups: positive (odd) and negative (even) statements. Respondents are asked to give each statement a score of 1–5. SUS results provide a general overview of an application's usability, with a score ranging from 1–100.

The score interpretation categories are generally divided into:
- 85 – 100 (Excellent),
- 70 – 84 (Good),
- 50 – 69 (Fair),
- <50 (Poor).

The following is the SUS calculation formula
- Odd Items :
  $$\mathcal{X}_i = (Skor - 1)$$
- Even Items :
  $$\mathcal{X}_i = (5 - Skor)$$

The SUS value formula can be written as follows:

$$SUS = \left(\sum_{i=1}^{10} \mathcal{X}_i \right) \times 2.5$$

C. SUS results from Figma and Adobe XD

Example of calculation from one of the respondents:

Table 1. calculation example

Item	Score	Type	Calculation
Q1	5	Positive	5-1 = 4
Q2	4	Negative	5-4 = 1
Q3	4	Positive	4-1 = 3
Q4	5	Negative	5-5 = 0
Q5	4	Positive	4-1 = 3
Q6	4	Negative	5-4 = 1
Q7	5	Positive	5-1 = 4
Q8	1	Negative	5-1 = 4
Q9	5	Positive	5-1 = 4
Q10	4	Negative	5-4 = 1

The System Usability Scale (SUS) score was calculated following the standard SUS scoring procuder. Fot each respondent, the sum of adjusted item scores was multiplied by 2.5 to obtain a final SUS score ranging from 0 to 100. The calculation is expressed as follows:

$$SUS\ Score = Total\ Adjust\ Score\ \times 2.5$$

Based on the average adjusted score obtained in this study:

$$SUS = 25\ \times 2.5 = 62.5$$

This result indicates that the usability level of the evaluated system falls within the acceptable range according to SUS interpretation guidelines, suggesting that the interface provides an adequate level of usability for users. The results of the SUS Figma and Adobe XD calculations can be seen in the following table:

Table 2. SUS Figma and Adobe XD calculation results

No	SUS Figma	SUS Adobe XD
1	62.5	37.5
2	62.5	50
3	65	45
4	60	45
5	57.5	50
6	77.5	55
7	67.5	40
8	70	45
9	47.5	47.5
10	62.5	60
11	62.5	45
12	57.5	35
13	55	55
14	67.5	50
15	50	45
16	57.5	52.5
17	62.5	47.5
18	60	42.5
19	95	40
20	55	47.5

Based on data obtained from 20 respondents:

Average SUS Figma = 62.75 and

Average SUS Adobe XD = 46.75

The responses from twenty users regarding the System Usability Scale (SUS) resulted in an average score of 62.75 for Figma. This rating positions Figma within the "Fair to Good" spectrum, indicating that students generally perceive it as user-friendly. Most respondents found it easy to navigate and utilise Figma's features and interface, as indicated by this score. Users can effortlessly tackle design tasks thanks to integrated real-time collaboration features, a user-friendly menu layout, and seamless navigation. When comparing Adobe XD to Figma, it's clear that Adobe XD fell short with an average SUS score of just 46.75. A significant number of respondents indicated that Adobe XD lacks the intuitiveness and straightforwardness of Figma when it comes to design tasks, resulting in a score that places it in the "Poor to Fair" category. The growing demand for adaptation, the view of a more complex interface among new users, and the sense of a more burdensome workflow reported by those with previous experience using Figma are all factors that could account for this disappointing score. Additionally, because Adobe XD lacks cloud integration, numerous users have expressed frustration regarding the slow and unresponsive nature of the storage and synchronisation process.

 D. Calculation of Task Completion Time Efficiency
Respondents' total time spent on design activities across the two platforms was used to determine their time efficiency. We looked at relative efficiency, average time, and Time-Based Efficiency (TBE) to see which platform was the most efficient.

no	Nama	Waktu_Figma	Waktu_AdobeXD	1/Waktu_Figma	1/Waktu_AdobeXD	Efisiensi_Per_Resp (%)
1	Ajie rakhmatan	3.8	5.1	0.263157895	0.196078431	25.49019608
2	Rifki Banda Wijaya	3.5	4.9	0.285714286	0.204081633	28.57142857
3	Alfin sarizan	3.7	5.3	0.27027027	0.188679245	30.18867925
4	Habibie Baehakim	3.4	4.8	0.294117647	0.208333333	29.16666667
5	M Dhimas Priyono	3.6	5	0.277777778	0.2	28
6	Aditya Muhammad Fadillah Umar	4	5.4	0.25	0.185185185	25.92592593
7	Ridho Pratama Putra	3.9	5.2	0.256410256	0.192307692	25
8	Rahmat agung YK	3.3	4.7	0.303030303	0.212765957	29.78723404
9	febriantah	3.4	4.9	0.294117647	0.204081633	30.6122449
10	Yudha Pratama	3.8	5.5	0.263157895	0.181818182	30.90909091
11	Ricky Fajar Adi Putra	3.6	5.1	0.277777778	0.196078431	29.41176471
12	MUHAMMAD RAIHAN	4.1	5.6	0.243902439	0.178571429	26.78571429
13	Maulidan Akmal Gandi	3.5	4.8	0.285714286	0.208333333	27.08333333
14	Muhammad Refo Febrian	3.9	5.3	0.256410256	0.188679245	26.41509434
15	Mohamad Juan Pablo	3.7	5	0.27027027	0.2	26
16	Nanda Alva Febrian	3.8	5.2	0.263157895	0.192307692	26.92307692
17	Nur fadila	3.2	4.6	0.3125	0.217391304	30.43478261
18	Putri salsabila	3.6	4.9	0.277777778	0.204081633	26.53061224
19	Adib Ulinuha El Majid	3.4	4.8	0.294117647	0.208333333	29.16666667
20	Nur Fadila	3.9	5.4	0.256410256	0.185185185	27.77777778

Figure 2. Task Completion Time and TBE Calculation Results

Time-Based Efficiency (TBE) and task-completion times for all respondents are shown in Figure 2. The figure shows the respective inverse time values (1/time) for Figma and Adobe XD, which were used to calculate the average TBE values for each platform, and the individual job completion times for each.

Table.3 Aggregate Efficiency Results of Figma and Adobe XD

Platform	Average Time (Minute)	TBE	Relative Efficiency (%)
Figma	3.655	0.274789629	
Adobe XD	5.075	0.197614644	0.197614644

Table 3 provides a concise summary of the efficiency indicators and average job completion time obtained from the data shown in Figure 2. Compared to Adobe XD, which took an average of 5.075 minutes to do a job, Figma finished in 3.655 minutes. According to these numbers, Figma has a better Time-Based Efficiency (TBE) of 0.274789629 compared to Adobe XD's TBE of 0.197614644. According to the relative efficiency study, when comparing the two programmes, Figma takes 27.08% less time to complete tasks than Adobe XD.

1. Relative Efficiency Based on Task Completion Time

The following is how relative efficiency was determined using the mean time it took for both platforms to do a given task:

$$Efficiency(\%) = \frac{t_{AdobeXD} - t_{Figma}}{t_{AdobeXD}} \times 100\%$$

Using the task completion times:

$$Efficiency(\%) = \frac{5.075 - 3.655}{5.075} \times 100\% = 27.98\%$$

Based on the average time it takes to finish a work, Figma is 27.98% quicker than Adobe XD when it comes to design projects.

2. Time-Based Efficiency (TBE) Comparison

All respondents' time-based efficiency (TBE) was determined by taking the average of the inverse of the time it took to complete a task, tme (1/t). We get the following TBE values:

- TBE Figma: 0.274789

- TBE Adobe XD: 0.197614

The following formula was used to determine the relative efficiency difference according to TBE:

$$TBE - based\ Efficiency\ (\%) = \frac{TBE_{Figma} - TBE_{AdobeXD}}{TBE_{AdobeXD}} \times 100\%$$

$$TBE - based\ Efficiency\ (\%) = \frac{0.274789 - 0.197614}{0.197614} \times 100\% = 39.05\%$$

The findings suggest that, when comparing Figma and Adobe XD from the perspective of Time-Based Efficiency, Figma demonstrates a notable improvement, with an efficiency increase of approximately 39.05%. Utilising Figma enabled respondents to perform duties more efficiently and consistently, as demonstrated by this significant difference.

In terms of overall efficacy, Figma consistently surpasses Adobe XD. The 27.98% relative efficiency reflects a faster average task completion time, while the 39.05% TBE-based efficiency highlights improved stability and consistency in job performance. Based on these findings, Figma emerges as the most efficient tool for addressing interface design challenges.

4. Conclusions

After thorough examination and discussion, it has become clear that Figma provides a more intuitive and streamlined design experience than Adobe XD. The System Usability Scale (SUS) results confirm this finding: Adobe XD achieved an average score of 46.75, while Figma scored 62.75, placing it in the Fair to Good category. The results indicate that Figma provides a more intuitive design experience compared to Adobe XD, is easier to understand, and offers a more enjoyable user experience. Moreover, when assessing the time required to finish tasks, Figma clearly excels in efficiency. Figma streamlines the design process, completing tasks in an average of just 3.655 minutes, about 27.98% faster than competing tools. The Time-Based Efficiency (TBE) calculation supports these findings. The findings reveal that Figma outperforms in efficiency stability, maintaining user work time consistently at a value of 0.274789, while Adobe XD stands at 0.197614. This research highlights that, from a learning and usability standpoint, especially for students seeking a quick, efficient, and straightforward design flow, Figma outshines Adobe XD in terms of efficiency and user-friendliness. Educational institutions and UI/UX professionals can leverage these findings to select a design platform that aligns with user needs and educational objectives.

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