


# Usability Evaluation And Satisfaction Of Mobile Game Players Using SUS, GEQ, And PENS

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Article Info	ABSTRACT
<p><b>Keywords:</b> Mobile Game, System Usability Scale, Game Experience Questionnaire, Player Experience of Need Satisfaction</p>	<p>The rapid development of digital technology has a significant impact on the entertainment industry, especially on mobile games. Evaluation is needed to ensure usability, experience, and player satisfaction. The rapid increase in the mobile game industry makes evaluating these aspects important to ensure that games are not only attractive from the virtual, but also provide an optimal playing experience. The SUS method is used to measure the usability of the game, while GEQ evaluates the dimensions of the playing experience, such as emotion and involvement, and PENS measures the psychological needs of players, such as competence, autonomy, and connectedness. This study evaluates the Mobile Legends game using the System Usability Scale (SUS), Game Experience Questionnaire (GEQ), and Player Experience of Need Satisfaction (PENS). The results of 101 data obtained showed a SUS score of 52.89 which is included in the "ok" category at Low Marginal which requires improvement. GEQ and PENS show a positive playing experience even though some psychological needs have not been fully met. The combination of these three methods provides a comprehensive understanding of the user experience that can be a reference for the development of future mobile games.</p>
<p>This is an open access article under the <a href="https://creativecommons.org/licenses/by-nc/4.0/">CC BY-NC</a> license</p> 	<p><b>Corresponding Author:</b> Dedy Kurniawan Sriwijaya University of Palembang Jalan Palembang – Prabumulih Km.32 Indralaya Ogan Ilir Kode Pos 30662 <a href="mailto:dedykurniawan@unsri.ac.id">dedykurniawan@unsri.ac.id</a></p>

## INTRODUCTION

The rapid development of digital technology has a major impact on various aspects of human life, especially the entertainment industry. Video games, especially mobile games that can be easily accessed via handheld devices, are one example of a popular form of entertainment to fill free time, which has become part of almost every child's and adult's life, with 97% of them playing at least one hour per day (Granic et al., 2014). With the development of mobile games, there is a need to assess a game from various aspects, including usability, user experience, and player satisfaction. This aspect is important because it can ensure that the game is not only attractive in terms of graphics, but also requires ease of use and can provide a satisfying playing experience. SUS is a quick and simple tool that can be used to measure the overall usability of various types of products and services, including software and applications (Brooke, n.d.). SUS allows for a quick measurement of how easy it is for users to interact with a product (Punta et al., n.d.). However, SUS does not include an evaluation of deeper aspects,

such as emotional involvement or the level of enjoyment felt by players while playing. To measure the broader gaming experience, some researchers have suggested using additional instruments. Law et al., noted that the Game Experience Questionnaire (GEQ) was designed to assess more complex dimensions of experience, including emotions elicited during gaming (Law et al., 2009). Additionally, instruments such as the Player Experience of Need Satisfaction (PENS) are essential in assessing players' psychological need satisfaction, as Ryan et al. explained that the PENS measures elements such as competence, autonomy, and relatedness that are important for maximizing gaming experiences (Ryan et al., 2006).

**Table 1.** Previous Research

No	Publisher	Title	Methods	Short Description
1	Tri et al., 2023	Usability testing of the PUBG Mobile game	SUS	This study analyzes user comfort in playing PUBG Mobile using SUS. Data reveals aspects of control and interface that need to be improved
2	Hakiki et al., 2019	Evaluation of User Experience in the Game PlayerUnknown's Battlegrounds Mobile Using the Game Experience Questionnaire	GEQ	This study evaluates the PUBG Mobile user experience with a focus on player enjoyment, satisfaction, and emotional experience.
3	RAMA	Analysis of Player Satisfaction Level using the Player Experience of Needs Satisfaction (PENS) Approach in the Game Genshin Impact	PENS	This study evaluates the extent to which the Genshin Impact game meets the needs of autonomy, competence, and social relationships of players.

Previous research only focused on one instrument by focusing on one side of the game, such as only assessing usability without connecting the relationship with user satisfaction experience and vice versa. By using these three instruments together, it is expected that the evaluation of mobile games on the Mobile Legends game will be more comprehensive. SUS measures usability, while GEQ and PENS assess the emotional experience and psychological satisfaction of players, aiming to evaluate the ease of use and the extent to which the Mobile Legends game can meet the psychological needs of players and evaluate aspects of the emotional and cognitive experience of players while playing.

## METHODS

This study focuses on the evaluation of usability and player experience playing the Mobile Legends game, using data from the results of distributing online questionnaire forms, the methodology used consists of 10 simple statements for calculating SUS, the use of the core

module of the player experience questionnaire (GEQ) consisting of 33 statements each assessing the player's experience as a score on 7 components: immersion, tension, positive affect, negative affect, competence, challenge, and flow. Then the player's satisfaction needs experience (PENS) consisting of 12 statements assessing presence, autonomy, relatedness, and intuitive control. After the data is collected, the data will be processed using IBM SPSS to test the validity and reliability of the data. After the data is processed, the data will be interpreted in tables, images, or graphs before drawing conclusions about the research. Figure 1 is a flowchart of the research method.

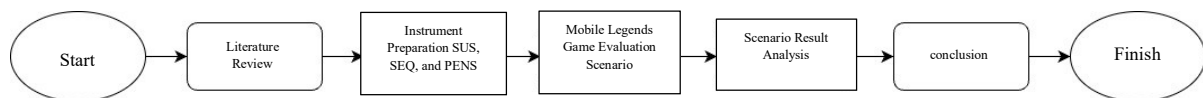


Figure 1. Flowchart

### System Usability Scale (SUS)

Usability is an important concept in software development, as the ability of a system to be used easily and efficiently by users, including how players can understand the interface, controls, and game mechanisms, the importance of interface design that is not only visually appealing, but also functional (Nielsen Jakob, 1993; Wibawanto Wandah & Nugrahani Rahina, 2018).

$$x = \frac{\sum x}{n}$$

- $\bar{x}$  = Average Score
- $\sum x$  = Sus Total Score
- $n$  = Number Of Respondents

Figure 2. SUS Formula

Evaluation of usability aspects is carried out using 10 simple statements, each of which is given a value based on a Likert scale from 1 to 5 and the results will be processed to provide a usability score. Table 1 shows the statements that will be used to obtain the usability score

Table 2. SUS Statements

No	Statement	No	Statement
1	I feel that I will play Mobile Legends game often	6	I feel like there are too many inconsistencies in this game
2	The game is too complicated to play	7	I feel like the game is easy to learn
3	I feel that the controls in this game are easy to use	8	I feel like the game is very inefficient
4	I feel that I need help from others to understand how to play this game	9	I feel confident using the controls and features in this game
5	I feel that the features in this game are well integrated	10	I feel like the game requires a lot of learning before I can play it well

### Game Experience Questionnaire (GEQ)

GEQ has three structures, namely, the core questionnaire, the social presence module, and post game mobile (Ijsselsteijn et al., n.d.). Research conducted by Abeele et al. (Abeele et al., 2020), shows that GEQ is an effective tool for measuring complex gaming experiences. This study will use the core questionnaire using 33 sets of statements as in Figure 2 developed by Wijnand A. Ijsselsteijn from Eindhoven University of Technology (TU/e) which has been translated into Indonesian.

**Table 3.** GEQ Core Module Statement Set

1	i feel satisfied	12	aesthetically pleasing	23	i feel stressed
2	i feel skilled	13	makes me forget about my surroundings	24	i feel irritable while playing this game
3	i am interested in the plot	14	I feel good	25	i lose track of time
4	i think it is fun	15	I am good at playing	26	i feel challenged
5	i am completely engaged in the game	16	I feel bored playing this game	27	i feel it is impressive
6	i feel happy	17	I feel successful in this game	28	i am very concentrated in the game
7	this game puts me in a bad mood	18	I feel imaginative	29	i feel frustrated
8	i think about other things	19	I feel like I can explore a lot	30	it feels like a lot of experience
9	i feel tired of playing this game	20	I enjoy this game	31	i lose connection with the outside world
10	i feel competent	21	I am fast at achieving goals	32	i feel time pressure
11	i think it is difficult	22	I feel annoyed when playing this game	33	i have to work hard for it

The core questionnaire or core statement is one of the structures to measure the Game Experience that players feel after the players have finished playing the game, which is stated in several components such as table 2:

**Table 4.** GEQ Core Module Components

No.	Components	Statement
1	Competence	2, 10, 15, 17, 21
2	Immersion	3, 12, 18, 19, 27, 30
3	Flow	5, 13, 25, 28, 31
4	Tension	22, 24, 29
5	Challenge	11, 23, 26, 32, 33
6	Negative Affect	7, 8, 9, 16
7	Positive Affect	1, 4, 6, 14, 20

Player Experience of Need Satisfaction (PENS)

PENS is a development of Self Determination Theory (SDT) (Ryan et al., 2006). This theory discusses factors that facilitate or weaken motivation, both intrinsic and extrinsic, such as autonomy, competence, presence, and intuitive control. In a study conducted by Qin (Qin, 2021) also added "relatedness". Therefore, this study will use all factors, namely: autonomy, relatedness, presence, and intuitive control. PENS is a model that can be applied and evaluated, which allows for the measurement of imprecise pleasure factors of a game (Rienzo & Cubillos, 2020) as in Figure 4 which is a component of PENS.

**Table 5.** PENS Components

No.	Component	Description	Example
1	Autonomy	A scale to assess the degree to which participants feel free, and perceived opportunities to engage in activities that interest them	"Playing Mobile Legends gives me the freedom to make decisions in the game."
2	Presence	This scale was developed to assess the sense of involvement in the game environment. There are	"I feel like I have full control over my strategy and actions in Mobile Legends."
3	Relatedness	three items to assess each presence, each of which can be seen in the following sections.	"Mobile Legends allows me to play the way I want to."
4	Intuitive control	This scale assesses the desire to connect with others	"I feel like I am really in the game world"

**RESULTS AND DISCUSSION**

**Table 6.** Respondent Characteristics

Age	Amount	Percentage
< 16 years	4	3,9
16 – 21 years	55	54,5
> 21 years	42	41,6
Gender		
Male	65	64,4
Female	36	35,6
Game playing duration		
< 1 year	17	16,8
1 – 2 years	11	16,8
> 2 years	73	72,3

In table 5 above, most Mobile Legends game players are aged 16-21 years (55 respondents), followed by over 21 years (42 respondents), and under 16 years (4 respondents), dominated by male players with 65 respondents, while the rest are female with 36 respondents. Most players have played the Mobile Legends game for more than 2 years

with a total of 73 respondents, less than 1 year totaling 17 respondents, and finally 1-2 years playing less than 1 year.

**Calculation of System Usability Scale (SUS)**

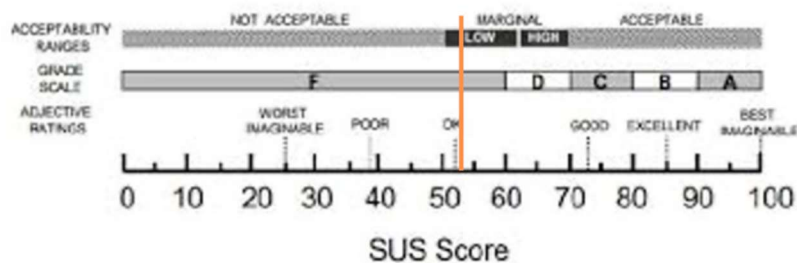
By using the 101 respondents that have been obtained, in figure 5 are the results of data calculations for the average SUS score:

**Table 7.** SUS Calculation Results

Respondents	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Amount	Amount x 2,5
1	3	2	3	2	4	2	4	2	3	3	28	70
2	0	3	1	3	1	3	1	3	1	0	16	40
3	3	1	3	1	3	1	4	1	3	1	21	52,5
4	2	3	1	2	1	4	1	3	2	1	20	50
5	3	4	2	4	3	2	0	2	3	4	27	67,5
6	1	3	1	4	1	3	0	2	1	2	18	45
7	3	0	4	1	4	3	4	2	4	4	29	72,5
8	3	2	1	3	1	3	2	2	1	1	19	47,5
9	3	1	3	2	3	1	3	1	3	1	21	52,5
10	0	3	1	3	1	3	1	3	1	0	16	40
11	3	3	4	3	4	1	4	3	4	4	33	82,5
12	1	2	2	1	2	2	1	3	3	3	20	50
13	2	1	4	3	4	1	3	1	3	4	26	65
14	0	4	1	1	1	1	2	1	3	0	14	35
15	4	0	4	2	3	2	3	1	3	3	25	62,5
16	1	3	1	4	1	2	1	2	1	2	18	45
17	4	0	4	0	3	3	4	1	4	1	24	60
18	1	3	1	2	1	3	2	3	1	1	18	45
19	4	0	4	0	4	0	4	0	4	0	20	50
20	2	4	0	2	0	2	0	3	1	2	16	40
21	4	3	3	2	4	4	4	1	4	4	33	82,5
22	1	4	3	2	1	2	3	3	1	1	21	52,5
23	4	2	3	0	4	1	2	0	3	3	22	55
24	0	3	1	4	1	3	2	3	0	1	18	45
25	4	0	4	4	2	3	3	2	2	4	28	70
26	4	0	4	2	2	0	2	2	4	4	24	60
27	3	2	4	1	4	3	0	2	3	4	26	65
28	3	3	0	2	2	3	0	0	2	2	17	42,5
29	4	0	4	2	4	4	3	0	3	4	28	70
30	3	2	3	0	2	0	2	3	1	0	16	40
31	4	1	3	1	3	2	3	3	3	3	26	65
32	1	4	0	4	1	2	1	3	0	1	17	42,5
33	2	0	4	0	2	2	4	1	4	0	19	47,5
34	0	4	0	4	0	2	0	2	0	0	12	30

Respondents	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Amount	Amount x 2,5
35	3	2	3	2	4	1	3	1	4	4	27	67,5
36	2	4	2	4	0	4	0	4	0	3	23	57,5
37	3	1	4	3	3	2	3	1	4	2	26	65
38	1	3	1	2	1	1	1	3	1	1	15	37,5
39	1	2	2	2	2	2	2	2	2	2	19	47,5
40	2	2	1	1	1	3	1	3	2	1	17	42,5
41	3	3	3	3	3	3	3	2	3	2	28	70
42	3	4	1	1	1	0	2	3	2	4	21	52,5
43	3	2	3	3	3	2	1	4	2	2	25	62,5
44	1	2	1	1	2	2	2	2	2	1	16	40
45	2	3	2	4	3	2	2	1	3	4	26	65
46	1	3	1	4	2	3	0	2	2	1	19	47,5
47	2	1	3	4	3	3	2	2	2	4	26	65
48	0	3	0	1	0	4	0	4	1	0	13	32,5
49	1	3	2	1	2	1	2	4	2	2	20	50
50	0	4	0	1	1	1	1	1	1	0	10	25
51	3	2	4	3	4	2	3	2	4	3	30	75
52	1	1	2	2	2	2	1	1	1	1	14	35
53	2	2	3	4	2	1	2	1	2	4	23	57,5
54	2	2	3	2	3	2	3	1	3	3	24	60
55	1	1	1	1	3	0	2	1	3	1	14	35
56	1	4	0	4	1	4	0	4	0	4	22	55
57	0	3	3	1	4	1	3	1	3	4	23	57,5
58	1	2	1	2	1	2	1	2	1	2	15	37,5
59	2	1	2	3	2	2	4	2	2	4	24	60
60	0	4	0	3	0	2	0	4	0	2	15	37,5
61	3	1	2	0	3	0	3	1	4	0	17	42,5
62	2	2	2	2	1	1	2	2	2	1	17	42,5
63	4	0	3	0	4	3	3	0	4	0	21	52,5
64	0	4	1	4	0	4	0	0	0	3	16	40
65	0	4	4	4	4	1	1	4	4	4	30	75
66	2	3	3	3	2	3	2	3	2	1	24	60
67	4	2	2	2	4	2	4	2	3	4	29	72,5
68	0	4	0	3	1	3	0	4	0	2	17	42,5
69	4	0	4	2	3	4	4	0	4	2	27	67,5
70	1	2	2	1	1	2	1	3	2	1	16	40
71	4	0	3	1	4	0	3	1	4	2	22	55
72	0	3	1	1	1	3	1	4	1	4	19	47,5
73	4	0	4	1	4	0	4	0	4	1	22	55
74	2	3	1	1	1	2	2	3	1	0	16	40

Respondents	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Amount	Amount x 2,5
75	0	4	1	4	2	2	0	4	1	2	20	50
76	0	0	0	1	2	1	1	2	1	2	10	25
77	2	0	4	0	3	1	4	2	3	3	22	55
78	1	2	0	2	1	3	0	3	1	3	16	40
79	1	1	3	2	2	4	3	2	2	3	23	57,5
80	4	3	0	4	3	0	0	2	2	3	21	52,5
81	3	3	3	3	3	3	3	3	3	3	30	75
82	4	2	2	3	3	0	2	1	3	2	22	55
83	4	0	4	0	4	2	4	2	4	0	24	60
84	1	2	2	2	1	1	3	2	2	0	16	40
85	4	1	2	0	2	3	2	2	4	2	22	55
86	2	4	0	2	1	2	0	2	0	2	15	37,5
87	4	0	4	2	4	1	4	0	4	4	27	67,5
88	2	3	1	4	1	1	1	2	1	3	19	47,5
89	4	0	3	1	3	1	3	1	4	2	22	55
90	1	3	1	2	3	0	2	3	1	1	17	42,5
91	4	2	2	1	2	1	3	2	3	2	22	55
92	0	4	3	4	2	3	2	3	1	3	25	62,5
93	4	2	2	2	3	0	4	1	3	3	24	60
94	0	4	2	3	2	3	2	3	0	1	20	50
95	3	0	2	2	3	1	2	1	3	3	20	50
96	2	2	1	2	1	3	0	3	1	2	17	42,5
97	0	0	4	4	4	0	4	0	0	4	20	50
98	2	3	1	1	1	2	1	2	1	0	14	35
99	4	1	3	1	3	1	3	1	3	4	24	60
100	5	2	4	2	4	2	4	2	4	5	16	85
101	4	0	4	4	3	1	3	1	4	3	27	67,5
Average SUS Score												52,89



**Figure 3.** SUS calculation result scale

From the calculation carried out, the SUS score result was obtained with a value of 52.89 with an adjective assessment at the "ok" level where the results obtained can be marginally accepted. In the Low Marginal category, it shows that the usability of the system



is still below standard. Users still experience significant difficulties in interacting with the system, which causes the user experience to still be less than satisfactory. The score obtained shows that the system requires improvement in interface design, navigation, and ease of use. These results provide further analysis and improvements are needed, so that the usability of the system can be improved in the future.

### Validity Test

By using 100 respondents for the validity test and 5% significance, the r value was found to be 0.196. Each variable can be said to be valid if the calculated r correlation is greater than the table r. The results of the validity test on each variable vary, as can be seen in table 8 below

**Table 8.** Validity Test

Variables	Code	R count	R table	Validity
Immersion	IMM1	1	0,196	VALID
Flow	IMM2	0,306	0,196	VALID
Competence	IMM3	0,346	0,196	VALID
	IMM4	0,266	0,196	VALID
	IMM5	0,367	0,196	VALID
	IMM6	0,288	0,196	VALID
Positive Affect	FL1	1	0,196	VALID
Negative Affect	FL2	0,384	0,196	VALID
	FL3	0,409	0,196	VALID
Tension	FL4	0,151	0,196	INVALID
	FL5	0,360	0,196	VALID
	COM1	1	0,196	VALID
Challenge	COM2	0,707	0,196	VALID
	COM3	0,595	0,196	VALID
Presence	COM4	0,602	0,196	VALID
	COM5	0,630	0,196	VALID
	Autonomy	PA1	1	0,196
Relatedness	PA2	0,780	0,196	VALID
	PA3	0,597	0,196	VALID
	PA4	0,593	0,196	VALID
	PA5	0,733	0,196	VALID
Variables	NA1	1	0,196	VALID
Immersion	NA2	0,356	0,196	VALID
Flow	NA3	0,476	0,196	VALID
	NA4	0,421	0,196	VALID
Competence	TENS1	1	0,196	VALID
	TENS2	0,232	0,196	VALID
	TENS3	0,5	0,196	VALID
Positive Affect	CHA1	1	0,196	VALID

Variables	Code	R count	R table	Validity
Negative Affect Tension	CHA2	0,144	0,196	INVALID
	CHA3	-0,040	0,196	INVALID
	CHA4	0,187	0,196	INVALID
	CHA5	0,090	0,196	INVALID
Challenge	PRE1	1	0,196	VALID
	PRE2	0,707	0,196	VALID
	PRE3	0,492	0,196	VALID
Presence Autonomy	AUT1	1	0,196	VALID
	AUT2	0,670	0,196	VALID
	AUT3	0,767	0,196	VALID
Relatedness	REL1	1	0,196	VALID
	REL2	0,673	0,196	VALID
	REL3	0,787	0,196	VALID
Intuitive Control Variables Immersion	IC1	1	0,196	VALID
	IC2	0,713	0,196	VALID

The conclusion that can be drawn is that the instrument in GEQ (immersion, flow, competence, positive affect, negative affect, tension, challenge) has five invalid codes, namely FL4, CHA2, CHA3, CHA4, and CHA5. Therefore, the variable code that has a score value smaller than the specified r table must be deleted and must be repeated for its validity test to obtain all valid data and variables. For all PENS instruments (presence, autonomy, relatedness, intuitive control) can be used in research.

**Table 7.** 2nd Validity Test

Variable	Code	R count	R table	Validity
Immersion Flow Competence	IMM1	1	0,196	VALID
	IMM2	0,306	0,196	VALID
	IMM3	0,346	0,196	VALID
	IMM4	0,266	0,196	VALID
	IMM5	0,367	0,196	VALID
	IMM6	0,288	0,196	VALID
Positive Affect Negative Affect	FL1	1	0,196	VALID
	FL2	0,384	0,196	VALID
	FL3	0,409	0,196	VALID
	FL5	0,360	0,196	VALID
Tension Challenge Presence	COM1	1	0,196	VALID
	COM2	0,707	0,196	VALID
	COM3	0,595	0,196	VALID
	COM4	0,602	0,196	VALID
	COM5	0,630	0,196	VALID
	PA1	1	0,196	VALID

Autonomy	PA2	0,780	0,196	VALID	
Relatedness	PA3	0,597	0,196	VALID	
	PA4	0,593	0,196	VALID	
	PA5	0,733	0,196	VALID	
Intuitive Control Variable	NA1	1	0,196	VALID	
	NA2	0,356	0,196	VALID	
	NA3	0,476	0,196	VALID	
	NA4	0,421	0,196	VALID	
Flow Competence	TENS1	1	0,196	VALID	
	TENS2	0,232	0,196	VALID	
	TENS3	0,5	0,196	VALID	
	CHA1	1	0,196	VALID	
Positive Affect	PRE1	1	0,196	VALID	
	Negative Affect	PRE2	0,707	0,196	VALID
		PRE3	0,492	0,196	VALID
Tension	AUT1	1	0,196	VALID	
	AUT2	0,670	0,196	VALID	
	AUT3	0,767	0,196	VALID	
Challenge Presence	REL1	1	0,196	VALID	
	REL2	0,673	0,196	VALID	
	REL3	0,787	0,196	VALID	
Autonomy	IC1	1	0,196	VALID	
	IC2	0,713	0,196	VALID	
	IC3	0,670	0,196	VALID	

In the 2nd validity test after deleting the variable codes FL4, CHA2, CHA3, CHA4, and CHA5, there were 40 valid statements that had an r value greater than the previously determined r table which was 0.196.

### Reliability Test

Cronbach's Alpha is a reliability coefficient that is commonly used to determine the reliability of data collected through questionnaires. The alpha value of the questionnaire must be  $\geq 0.7$  to be considered reliable. However, if the alpha value is less than 0.7, then the data can be suspected or cannot be accepted. The results of the reliability test can be seen in the following table:

**Table 9.** Reliability Test

Component	Cronbach's Alpha	Alpha	Reliability Status	Task
GEQ	0,874	0,70	reliable	28
PENS	0,935	0,70	reliable	12

The results of the reliability test on the GEQ Core Questionnaire with 28 tasks, namely 6 immersion, 4 flow, 5 competence, 5 positive affect, 4 negative affect, 3 tension, 1 challenge and PENS with 12 tasks, namely 3 presence, 3 autonomy, 3 relatedness, and 3 intuitive

control show that all components and variables of each instrument have a Cronbach's Alpha value of more than 0.7 so that all components can be relied on.

## CONCLUSION

Analysis of the usability questionnaire with the SUS method shows that the Mobile Legends game is at the "ok" level in the adjective assessment which is still acceptable in Low Marginal, where the Low Marginal category indicates that the usability of the system is still below standard, and must be improved in the future. The results of the analysis of the player experience questionnaire with the GEQ method with the core module show that respondents feel many positive effects compared to negative effects when playing the Mobile Legends game. This is indicated by the high values of positive affect, competence, and immersion, but the tension aspect has a fairly low value, meaning that the Mobile Legend game still lacks tension and challenges that make respondents feel challenged when playing the Mobile Legends game. Then the flow aspect, which also has a fairly low score, makes players have a bad flow for respondents when playing it. The results of the analysis of the player satisfaction experience questionnaire using the PENS method show that all aspects have quite high scores, which means that the Mobile Legends game is able to make its players feel the presence and excitement of the game and can connect with other players who also play the game, and this game is easy to use, so that it does not make respondents have difficulty when playing the Mobile Legends game. According to the questionnaire conducted in the usability analysis using SUS, the usability of the Mobile Legends game can still be used but still needs to be improved to improve the usability of the system in the future to reach a satisfactory level. According to the questionnaire conducted in measuring player experience (GEQ) and player satisfaction (PENS), respondents had a good playing experience, although there were some obstacles in the challenge aspect. It can be concluded that the usability questionnaire (SUS), playing experience (GEQ) and player satisfaction (PENS) can be used together to measure the level of usability in the Mobile Legends game, as well as measure the playing experience and player needs for satisfaction in order to provide input and/or feedback for game development. In the onslaught of various mobile games today, the Mobile Legends game is still in demand by many people, seen from the results of the analysis and evaluation in combining the three methods, the SUS value shows Low Marginal usability which means that the usability in this game shows low level usability, but GEQ and PENS show good experience scores, this means that even though the usability is not intuitive, players can still enjoy the game because the aspects are still adequate. Although the Mobile Legends game has provided a fairly good experience, there is a need to improve usability and player involvement so that the playing experience becomes more optimal and satisfying.

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