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Social media addiction and its impact on social relationships

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ABSTRACT

Social media is a platform that allows users to engage in activities and collaborate. Social media can make communicating with fellow humans easier via a smartphone or internet connection. However, on the other hand, the presence of social media can have a negative impact. Excessive use of social media can be addicting and negatively affect one's social relationships. Therefore, this paper will analyze the relationship between social media addiction on social relationships and how it impacts one's social relationships. A research instrument in the form of a questionnaire was used to analyze that. After that, the validity and reliability tests were carried out regarding the questionnaire. If the questionnaire passed the test, the questionnaire was distributed. The results from the questionnaire were analyzed by an assumption and hypothesis test, respectively, to describe the objectives of this study.

1. Introduction

Human beings are social creatures. Humans, as social beings, need other humans to live and interact socially. Social interaction is the primary condition for the occurrence of social activities [1]. Social interaction is a dynamic social relationship involving relationships between individuals, groups of people, and between individuals and groups of humans [2]. Technology brings changes to social life [3]. One of them is changing the way of communicating and relating. In the past, when you wanted to communicate with other people, you had to meet face to face. However, with the presence of social media, communicating with fellow humans becomes easier via a smartphone connected to an internet connection [4]. Social media is a platform that brings changes in communicating and relating to fellow humans [5].

Social media is a group of internet-based applications built based on Web 2.0 ideology and technology, allowing the creation and exchange of user-generated content [6]. Social media is a platform that focuses on the existence of users who facilitate them in activities and collaboration [7]. Therefore, social media can be seen as an online platform that strengthens user relationships and social bonds [8].

Active social media users are 4.2 billion, or 53.6% of the world's population [9]. In 2021, the number of users will increase by 13.2% compared to the previous year [9]. Data on social media users, 90% of the population aged 18-29 years use social media, 82% of the population aged 20-49 years use social media, 69% of the population aged 50-64 years use social media, and residents over 65 years use social media as much as 40% [10]. Based on this data, it can be seen that various ages use social media. The average data use of social media is 2 hours and 25 minutes [9]. There are tons of social media nowadays. The following social media are widely used worldwide, as seen in Fig.1.

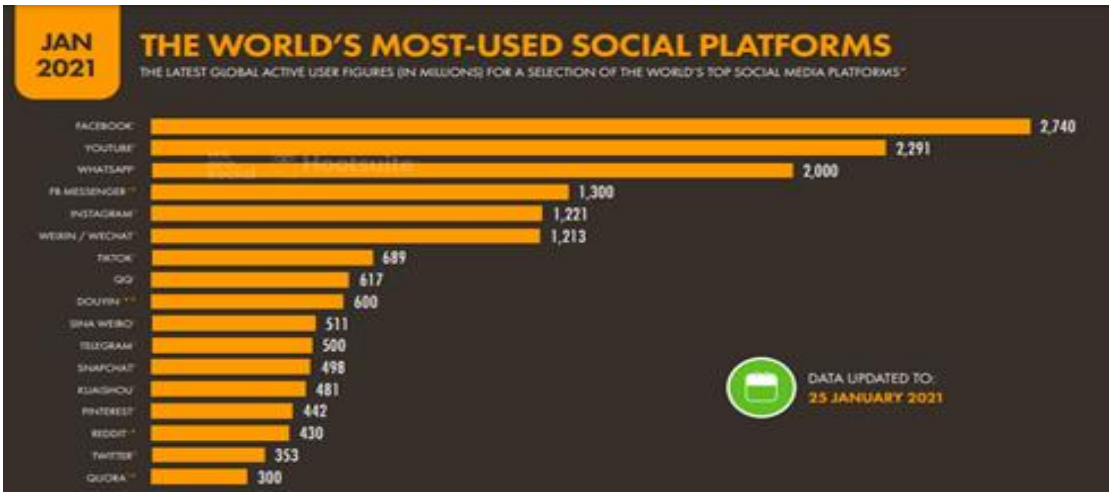

Fig. 1. Stages of the Project [source:]

Fig.1 shows that Facebook, YouTube, WhatsApp, Messenger, Instagram, WeChat, and Quora are currently the most widely used social media users worldwide. Apart from social media in Fig.1, there are still many social media worldwide. Each of these social media has its advantages in attracting the many social media users it has. Almost all social media that are most widely used are social media, a social networking sites. There are six types of social media [11].

1) *Collaboration Projects*
   The website allows its users to be able to change, add, or delete content on this website. For example, Wikipedia.

2) *Blogs and microblogs*
   Users can express something on this blog, such as acknowledging or criticizing government policies. For example, Twitter, Blogspot, Tumblr, Path, Instagram, etc.

3) *Content*
   Users of this website share media content, such as videos, ebooks, images, and more. For example, Youtube.

4) *Social Networking Sites*
   An application that allows users to connect by creating personal information to connect with other people. Personal information can be like a photo. For example, Facebook, Path, Instagram, and others.

5) *Virtual game world*
   A virtual world replicates a 3D environment, where users can appear in the desired avatar form and interact with other people just like in the real world, for example, in online games.

6) *Virtual social world.*
   A virtual world where the user feels alive in a virtual world, such as a virtual game world that interacts with other people. However, the Virtual Social World is more accessible and more towards life, for example, a second life.

The function of social media can be described through the relationship of the honeycomb framework using seven function-building boxes, like in Fig.2 [12].

Fig. 2. Honeycomb Framework Diagram

1) *Identity*
Social media as a user identity includes name, age, gender, profession, location, and photo.

2) *Conversations*

Social media as a platform allows communication between other users.

3) *Sharing*
Social media is a place to exchange, share and receive content through text, images, or videos from among users.

4) *Presence*
Describes whether users can access other users.

5) *Relationship*
Users can connect with other users.

6) *Reputation*
Users can identify others as well as themselves

7) *Groups*
Social media can form communities and sub-communities between users with backgrounds, interests, or demographics.

Nevertheless, on the other hand, the presence of social media can have a negative impact. Excessive use of social media can be addicting. Addiction is dependency behavior on something you like [13]. Social media addiction can be summed up as a set of applications on the internet network that make it easier for users to participate in sharing news, information, and content with others by spending much time and not being able to control their use online and someone who is addicted feels punished if they do not fulfill their wishes [14]. Social media addiction will affect one's social relationships. Therefore, we will analyze the relationship between social media addiction social relationships and how it impacts one's social relationships.

2. The Proposed Method/Algorithm

This study aims to determine the effect of social media security on social media users among the millennial generation. Subjects in this study are the generation born in the 1980s –2000 or those aged 15–35 years. The data collection method used in this study is a questionnaire via a google form. Respondents determine their level of agreement with a statement when responding to questions by selecting one of the available options. Usually, four scale options are provided: 1 = Strongly Agree, 2 = Agree, 3 = Disagree, 4 = Strongly Disagree.

3. Method

The design of this research is descriptive quantitative research. This study aims to describe a phenomenon or obtain information on how social media addiction impacts social relationships [15]. The data used is quantitative data, where the research data is in the form of numbers derived from the objective parameters of the results of filling out the questionnaire by research subjects to strengthen the data described [16]. The subjects of this study are individuals with early adult characteristics aged 18-40 years who actively use social media.

A research instrument is a tool used by researchers in collecting data so that their work is more accessible and the results are better, in the sense that it is more accurate, complete, and systematic, so that it is easier to process. The research instrument used in this study was a questionnaire. A questionnaire is a data collection technique that is carried out by giving a series of questions or written statements to respondents to be answered [17]. This study uses a closed questionnaire whose questions are limited by several answer choices. The questionnaire used in this study used a Likert scale with four scales. Alternative answers are (A) Strongly Agree, (B) Agree, (C) Disagree, and (D) Strongly Disagree. The modification of the Linkert scale with four answers is intended to eliminate the tendency of respondents to choose neutral answers (middle answer). A neutral answer (middle answer) can have a double meaning, namely doubtful, or the respondent cannot decide or provide a response. In addition, the existence of a neutral answer choice also encourages respondents to choose the middle answer alternative, especially those who are doubtful and have not been able to decide whether to agree or not. Before being used, the research instrument must go through a validity test and a reliability test to determine its validity of the research instrument. The purpose of this trial was carried out so that the instrument was suitable for use as a research instrument and a data collection tool to obtain complete and systematic data. Valid (feasible) means that the instrument can measure what should be measured [17].

3.1. Validity

The validity test shows the extent to which the instrument can measure what should be measured in research activities. The quantitative validation of the instrument is indicated by a quantitative score of the results of data analysis from the results of empirical trials with specific statistical techniques and formulas [18]. In this study, the instrument test questions were tested on the age group of 18-40, as many as 65 people, and consisted of 58 items. Based on the validity test results, there are 34 valuable items.

3.2. Reliability test

The test is an instrument that is trusted enough to be used as a data collection tool because the instrument is good [19]. A reliability test is conducted to find out how much the instrument can be trusted and relied on to collect data to reveal reliable data. Stated there are five categories of reliability can be seen in Table 1 [20].

Table.1 Reliability test

Score	Category
$-1.00 \leq r11 < 0.19$	Very low reliability (Unreliable)
$0.20 < r11 \leq 0.39$	Low reliability
$0.40 < r11 \leq 0.59$	Average
$0.60 < r11 \leq 0.79$	High reliability
$0.80 < r11 \leq 1.00$	Very high reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.733	58

Fig. 3. Reliability Statistic r11 is the reliability instrument test score

Based on Fig.3, the analysis conducted with 58 questions, Cronbach's Alpha value of 0.733 > 0.70 is obtained, so it can be concluded that the questions have high reliability.

3.3. Data collection

Data collection is a method that researchers use to collect research data [21]. The data collection steps used in this research follow the questionnaire technique. Researchers use a closed questionnaire in this study for several reasons, namely: (1) ensuring the confidentiality of the respondent, (2) providing sufficient opportunity and time for respondents to think and answer freely, (3) it can reach many people at the same time,(4) well documented and can be reflected, and (5) easy to analyze and can be done face-to-face or not [22].

3.4. Data Analysis

Analyzing data is a process of changing the form of data that has been obtained, usually still contained in instruments or notes made by researchers or evaluators, into a presentation of data that can be concluded and interpreted [23]. The data analysis technique used in this research is descriptive analysis.

3.4.1. Assumption Test

The test is carried out so that the conclusions are not different and deviate from the predetermined research objectives. The assumption test in this study will be carried out using the normality test. The normality test is carried out to test whether the independent and bound variables have typically distributed data. The normality test in this study will be calculated using a non-parametric statistical test formula, namely one sample Kolmogorov Smirnov in the SPSS version 26.0 program. If the significant value is less than 0.05, it can be concluded that the data is not normally distributed. However, if the significant value is greater than 0.05, it can be concluded that the data is normally distributed [23].

3.4.2. Hypothesis Test

This test is conducted to determine whether there is a negative relationship between addiction to social media and social relationships. If the data is normally distributed, the hypothesis testing will be calculated using the *Pearson Product moment* using SPSS version 26.0. However, if the data is not normally distributed, the calculation will be carried out using the technique *Spearman Rho.*

4. Results and Discussion

This section discusses data obtained from primary data sources through distributing questionnaires, including another gender, age, background, school origin of the respondent, and class level of respondent. From the results of distributing questionnaires, respondent data can be obtained as in Table 2.

Table.2 Classification of Respondents

Information		Amount	Percentage
Gender	Male	47	67,14%
	Female	23	32,86%
Total		70	100%
Last Education	SMA/SMK	56	80%
	D3	1	1,43%
	S1	8	11,43%
	S2	5	7,14%
Total		70	100%

Based on Table 2, from the questionnaire results above, it is known that the respondents based on male gender were 47 people (75.14%), while 23 (32.86%) were female. The latest high school education level is 56 people (80%), the D3 level is 1 (1.43%), the S1 level is eight people (11.43%), and the S2 level is five people (7.14%), so it can be rejected Male respondents were more dominant, and the most current education level was SMA/SMK.

Table.3 Description of Social Addiction

Question	Answer	Quantity	Mean	Median	Modus	Variants
I feel worried if a lot of social media notifications come in, but I cannot access social media for some reason	1	56	0,68220962	1	1	0,864876385
	2	1				
	3	9				
	4	4				
I often sleep late because of playing social media	1	7	0,706938776	3	3	0,721325052
	2	20				
	3	33				
	4	10				
I do not mind if no social media notifications are coming to my phone	1	10	0,742857143	2	2	0,765217391
	2	30				
	3	22				
	4	8				
I often neglect my obligations because I am too busy with social media	1	2	0,535918367	3	3	0,593995859
	2	15				
	3	35				
	4	18				
How long have I been using social media	1	20	0,546938776	2	2	0,592339545
	2	35				
	3	13				
	4	2				
When there are activities, I will not play social media	1	12	0,932244898	2	2	1,121325052
	2	26				
	3	14				
	4	18				
I find it challenging to divide my time between work and playing social media	1	10	0,782857143	2	2	0,854865424
	2	32				
	3	17				
	4	11				
I spend time playing on social media	1	7	0,705449827	2	2	0,6714223
	2	28				
	3	26				
	4	7				
I do not feel annoyed when I do not access social media all-day	1	2	0,474047672	3	3	0,49434645
	2	13				
	3	40				
	4	12				
I feel like I can manage my time well by using social media	1	0	0,514285714	3	3	0,468115942
	2	20				
	3	37				
	4	13				

Table 3 above shows the questions used to find the value of the variable social media addiction. The question about social media addiction has 12 questions and is answered by 70 respondents using Google Forms. Each question has four answers: one means disagree, two means disagree, three means agree, and four means agree. This variable will later be used for research. Then, the following Fig.4 illustrates the addictions they feel when using social media with 70 research subjects.

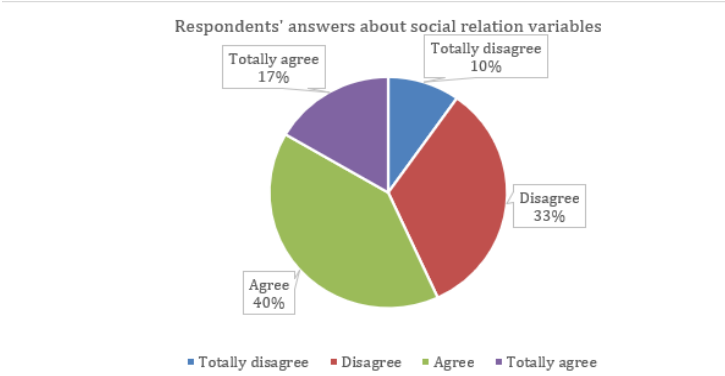

Fig. 4. Respondents' answers about social media addiction variables

Fig.4 shows the total number of answers from all respondents to 12 questions about social media addiction. 17% answered they disagree, 35% answered they disagree, 35% answered they agree, and 13% answered they agree. Then Table 4 is a description of questions about social relations.

Table.4 Description of Social Relations

Question	Answer	Quantity	Mean	Median	Modus	Varian
I find it challenging to accept opinions that do not match my opinion	1	13	0,704489796	2	2	0,795238095
	2	35				
	3	14				
	4	8				
I feel less sensitive and responsive in paying attention to others	1	8	0,764965343	3	3	0,838022165
	2	19				
	3	29				
	4	13				
I often ignore other people when I am talking	1	1	0,779591837	3	3	0,841614907
	2	21				
	3	32				
	4	16				
It is not easy for me to understand what the people around me feel	1	2	0,594285714	3	3	0,584057971
	2	22				
	3	27				
	4	13				
I can take criticism openly	1	5	0,735510204	3	3	0,866252588
	2	17				
	3	25				
	4	23				
I do not hesitate to start a conversation with anyone	1	1	0,517959184	3	3	0,36873706
	2	2				
	3	40				
	4	27				
I can share my feelings and thoughts that I do not like with others openly	1	5	0,615918367	3	3	0,693374741
	2	14				
	3	36				
	4	15				
I can talk to anyone regardless of social status	1	4	0,548571429	3	3	0,560869565
	2	21				
	3	37				
	4	8				
I have never been active in a conversation	1	2	0,782857143	3	3	0,944927536
	2	11				
	3	36				
	4	21				
I choose to be honest even though it hurts the feelings of the other person	1	9	0,585306122	2	2	0,519461698
	2	14				
	3	29				
	4	18				

From Table 3, the questions used to find the variable's value on social relations. The question about social relations has 22 questions and is answered by 70 respondents using Google Forms. Each question has four answers; answer one means disagree, two means disagree, three means agree, and four means agree. This variable will later be used for research. Then, the following Fig.5. illustrates the social relationships they feel when using social media from 70 research subjects

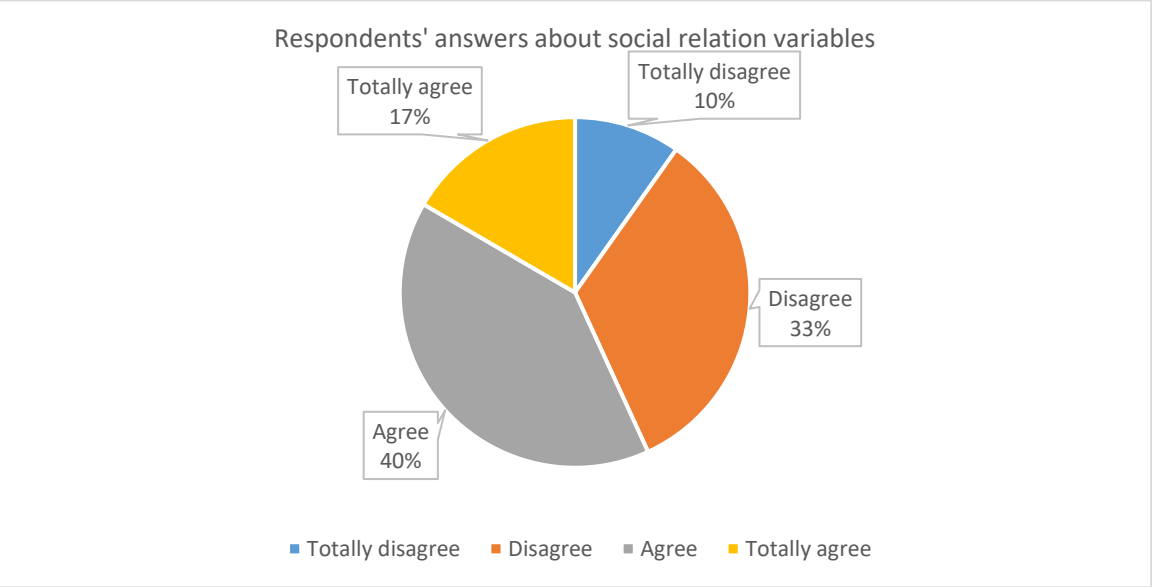

Fig. 5. Respondents' answers about social relation variables

Fig.5. shows all respondents' total number of answers to 22 questions about social media addiction. 10% of respondents answered they disagree, 33% answered they disagree, 40% answered they agree, and 17% answered they agree. Then Table 4 is a description of questions about social relations.

After obtaining the data, then the data obtained will be tested for data validation, data normality, and hypothesis testing to determine the relationship between the social media addiction variable and the social relationship variable. This test is carried out to determine the results of the impact that will occur. The impact of social media addiction on social relationships.

4.1. Validity Test

In this research, there 58 questions were asked. Respondents in this research were 70 respondents from SMK levels to S2. Of the 58 questions, the validity was tested, so 34 questions were valid. This validity test is obtained by counting the following r table:

$$df = n - 2$$

then obtained

$$df = 70 - 2 = 68$$

The following is data for calculating the validity of the question can be seen in Table 5.

Table.5 Calculating the validity of the question

Number Of Question	R count	R table	Status
1	-.107	0,244	invalid
2	.265*	0,244	valid
3	.240	0,244	invalid
4	-.248*	0,244	invalid
5	.172	0,244	invalid
6	.494**	0,244	valid
7	.309*	0,244	valid
8	.154	0,244	invalid
9	.381**	0,244	valid
10	.283*	0,244	valid
11	.022	0,244	invalid
12	.034	0,244	invalid
13	.094	0,244	invalid
14	.554**	0,244	valid
15	.085	0,244	invalid
16	.246	0,244	valid
17	.285*	0,244	valid
18	.255*	0,244	valid
19	.180	0,244	invalid
20	.237	0,244	invalid
21	.215	0,244	invalid
22	.483**	0,244	valid
23	.236	0,244	invalid
24	.197	0,244	invalid
25	-.081	0,244	invalid
26	.025	0,244	invalid
27	.150	0,244	invalid
28	.088	0,244	invalid
29	.432**	0,244	valid
30	.127	0,244	invalid
31	.333**	0,244	valid
32	.394**	0,244	valid
33	.271*	0,244	valid
34	-.002	0,244	invalid
35	.227	0,244	invalid
36	.403**	0,244	valid
37	.182	0,244	invalid
38	.385**	0,244	valid
39	-.152	0,244	invalid
40	.315*	0,244	valid
41	.370**	0,244	valid
42	.323**	0,244	valid
43	.423**	0,244	valid
44	.411**	0,244	valid
45	.426**	0,244	valid
46	.471**	0,244	valid
47	.355**	0,244	valid
48	.252*	0,244	valid
49	.369**	0,244	valid
50	.479**	0,244	valid
51	.266*	0,244	valid
52	.197	0,244	invalid
53	.259*	0,244	valid
54	.310*	0,244	valid
55	.333**	0,244	valid
56	.350**	0,244	valid
57	.430**	0,244	valid
58	.377**	0,244	valid

Table 5 shows that this study used a significance level of 5%. So that when referring to the r table, the value is 0.244. So that if the r count exceeds the r table, then the question is valid and will be processed toward the data normality test stage.

4.2. Data Normality

The next step is to determine whether the data is usually distributed. The Kolmogorov Smirnov count can prove this. The Kolmogorov-Smirnov (referred to as KS henceforth) statistic belongs to the supremum class of EDF statistics, and this class of statistics is based on the most significant vertical difference between the hypothesized and empirical distribution [24]. The following is the value for each variable of Social Media Addiction (x) and Social Relations (y). The result of the one-sample kolmogorov-smirnov test can be seen in Fig.6.

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		70
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	6,00369815
Most Extreme Differences	Absolute	,089
	Positive	,078
	Negative	-,089
Test Statistic		,089
Asymp. Sig. (2-tailed)		,200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Fig. 6. Result of One-Sample Kolmogorov-Smirnov Test

After calculating using SPSS, it is known that the data is usually distributed in complete form, and the value is 0.2. If this exceeds 0.05, then it can be said that the normality of the data is valid. Thus the assumptions or requirements for normality in the regression model have been fulfilled. The next step is to test the hypothesis using the product-moment correlation (Pearson).

4.3. Test the Hypothesis

A simple statistical analysis of Pearson Product Moment Correlation (PPMC) is commonly used to establish the degree or strength of a relationship between samples. Generally, the r values (generated from PPMC) range between −1 and 1, where 1 indicates a perfect positive linear relationship, and a correlation of −1 indicates a perfect negative linear relationship. It has been suggested that correlation coefficients between 0.8 and 1 indicate a strong correlation between samples, while coefficients between 0.5 and 0.8 indicate a medium correlation [25].

Product Moment correlation or Pearson determines the relationship between variables if the data is used as an interval or ratio scale. This analysis is the most widely used. The rationale for Product moment correlation analysis is the change between variables, which means that if a change follows a change in a variable in another variable, the two variables are related.

The following is an explanation of the count of the correlation hypothesis to the data that has been obtained from the questionnaire:

Ho: There is no positive correlation between social media addiction and the quality of social relationships between individuals (negative or insignificant).

Ha: There is a positive correlation between social media addiction and individuals' quality of social relationships (significant).

Testing criteria

Ho cannot be rejected if r count ≤ r table, or Sig. > alpha (α)

Ha is accepted if r count > r table or Sig. ≤ alpha (α), and the positive direction.

The result of the correlations test can be seen in Fig.7.

Correlations

		Kecanduan Medsos	Hubungan Sosial
Kecanduan Medsos	Pearson Correlation	1	,470**
	Sig. (1-tailed)		,000
	N	70	70
Hubungan Sosial	Pearson Correlation	,470**	1
	Sig. (1-tailed)	,000	
	N	70	70

**. Correlation is significant at the 0.01 level (1-tailed).

Fig. 7. Result of Correlations Test

From Fig.7, it was found that the r-value was 0.470, which indicates a positive relationship between social media addiction and the quality of social relationships between individuals, and this is a medium correlation category. With r table 0.2144, the count r-value greater than the r table points to the accepted hypothesis Ha and with a significance value (Sig. (1-tailed)) of 0.000 less than the alpha used, that is 0.05, then the Ha hypothesis is accepted. So, there is a positive and significant relationship between social media addiction and the quality of social relationships between individuals.

5. Conclusion

Pearson Correlation test results show the value of Sig. (1-tailed) as 0.000, so the Sig value is 0.000 <0.05, then the social media addiction control variable has a significant relationship with the social relationship variable. The variable of social media addiction with social relationships has a moderate relationship. Its value is a positive relationship. The direction of the positive relationship means that the variable social media addiction increases, so the social relationship variable will also increase.

The increase in social addiction is directly proportional to social relationships. Prolonged use of social media gives users more time to connect with other users. The use of social media has a good impact, especially in interacting socially. The use of social media makes it easy to communicate with friends and family, making it impossible to make face-to-face contact due to the distance factor. Social media can be used to send the required information easily and quickly and access the information needed. Social relationships with friends or family who have not met for a long time can be connected through social media such as Facebook, Instagram, and others. For these reasons, social media can affect a person's social relationships.

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