Instagram Usage and Sense of Purpose in Life: The Moderating Effect of User

Behavior

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Abstract

Since social media and especially Instagram is growing rapidly it becomes more and more important to understand its impact on various aspects of individuals lives. The influence of Instagram usage intensity and active or passive usage behavior on mental wellbeing is already thoroughly researched, while research in one dimension of mental wellbeing – namely the sense of purpose in life – seems to lack. The goal of this study was to examine the relationship between Instagram usage intensity and sense of purpose in life of university students. Additionally, a possible moderating effect of active and passive usage behavior was investigated. An online survey was conducted, gathering data about university students Instagram usage intensity, their usage behavior, and their sense of purpose in life. The final sample consisted of 75 participants who were contacted via convenience sampling. By conducting a linear regression and two moderator analyses, an insignificant result was observed regarding the relationship of Instagram usage intensity and sense of purpose in life, whereas both active and passive usage significantly, but only slightly moderated the relationship positively. Different limitations, such as the rather small sample size or the possibly slightly outdated Instagram-adapted version of the Passive and Active Use Measure, might explain these findings. Future research should continue to build the knowledge about social media and sense of purpose in life, and this study could be treated as a starting point for further exploration.

Keywords: Passive Instagram Usage, Active Instagram Usage, Sense of Purpose in Life, Instagram Usage Intensity, Mental Wellbeing

Introduction

Social media is everywhere in the modern world. The masses use it amongst other things to indulge in social interaction, seek information, pass time, or be entertained (Whiting & Williams, 2013). More than five billion individuals use social media in 2024 with Instagram being among the biggest contributors with two billion monthly active users as of January 2024 (We Are Social & Meltwater, 2024). Over half of Instagram's users are individuals under the age of 34 and close to 40% are below the age of 24 (We Are Social & Meltwater, 2023). Kessler et al. (2005) conducted a study revealing that the inception of three-quarters of all participants' lifetime mental disorders occurred prior to reaching the age of 25, emphasizing this age range as particularly vulnerable. As many individuals of said age are users of Instagram it must be explored how the social media platform affects their mental health. While extensive research revealed that overall mental wellbeing is associated with Instagram Usage (Moreton & Greenfield, 2022; Mackson et al., 2019; Keyte et al., 2020; Kuss, 2017) and one's social media usage patterns (Escobar-Viera et al., 2018; Godard & Holtzman, 2024; Thorisdottir et al., 2019), only few studies addressed one specific dimension of mental wellbeing within this context (Ryff, 1989): the sense of purpose in life. Possessing a sense of purpose in life contributes to mental wellbeing (Zika & Chamberlain, 1992), as well as greater satisfaction in life (Bronk et al., 2009). Montag et al. (2023) and Keum et al. (2022) found relationships between social media usage behavior and sense of purpose in life, but more research must be conducted to fully understand the underlying mechanisms. Therefore, to further contribute to the understanding of the impact of social media on mental health, this paper seeks to explore the relationship of Instagram Usage, user behavior, and the sense of purpose in life.

Instagram: Motivation and Usage Patterns

Firstly, it must be understood why and how individuals use social media or more specifically Instagram. Based on the uses and gratifications theory – a theory whose basic premise it is that one seeks out media to fulfill needs and reach gratification (Lariscy et al., 2011) – Whiting and Williams (2013) found ten motivations why individuals use social media in general. Namely these motivations are: 1) social interaction, 2) information seeking, 3) passing time, 4) entertainment, 5) relaxation, 6) expression of opinions, 7) communicatory utility, 8) convenience utility, 9) information sharing and 10) surveillance/knowledge of others. Hwang and Cho (2018) state that individuals use Instagram especially because of its perceived ease of use, social interaction, and its entertainment factor. Bradley (2015) found that individuals primarily post on Instagram to keep up with friends, or to pass time. Jun (2022), on the other hand, explored that Instagram is not only used for communication, but also for identity-seeking and self-expression. Thus, there are several motivations to use Instagram, but not every user demonstrates all of them. Literature divides user types of social media broadly in passive and active users (Verduyn et al., 2017; Trifiro & Gerson, 2019).

Verduyn et al. (2017) define active social network usage as engaging in activities that facilitate exchange with others, these activities can be one-on-one exchanges or nontargeted exchanges and often produce information. Conversely, passive social network usage involves activities focused on observing others without direct engagement and information consumption without direct communication with the content creator (Verduyn et al., 2017). Gerson et al. (2017) identifies active usage through activities such as posting status updates, commenting, chatting, posting photos, or liking and commenting on the newsfeed. Passive usage was characterized through activities such as checking what others are doing, viewing photos, browsing the newsfeed without interacting or looking through friends' profiles

(Gerson et al., 2017). Depending on the usage pattern, different effects of social media on one's mental wellbeing were discovered in the literature.

Social Media and Mental Wellbeing

In general, good mental wellbeing can be understood as experiencing positive mental health, while those that possess mental wellbeing feel good and act well (Hafiza et al., 2019). Mental wellbeing is comprised of several dimensions, namely: Self-acceptance, Positive relations with others, Autonomy, Environmental mastery, Purpose in Life and Personal Growth (Ryff, 1989). The presence of good mental wellbeing is of high importance for the quality of life of individuals, enabling them to be active and experience life as meaningful (Friedli, 2009). In accordance with this, Maccagnan et al. (2018) found several benefits that mental wellbeing can bring: 1) improved health, 2) reduced antisocial behavior, 3) improved social relationships and 4) improved productivity. Santini et al. (2022) reported that higher mental wellbeing predicts lower risk of mental disorders. Similarly, Weich et al. (2011) found mental wellbeing in general to be highly correlated to mental illness. It becomes clear that low mental wellbeing can be detrimental and hurtful for the overall life of a human being – this is especially true for young people as they are particularly vulnerable towards the effects of low mental wellbeing (Kessler et al., 2005) – and therefore how important it is to understand what causes it.

In the context of social media, active usage is positively related to subjective well-being, as it increases social capital and connectedness (Verduyn et al., 2017). Thorisdottir et al. (2019) found that active usage causes decreased symptoms of anxiety and depressed mood. Additionally, it can lead to an increase in self-esteem as well as an increase in happiness (Marengo et al., 2021). Nevertheless, active usage can sometimes yield negative effects, as social media engagement with attractive peers can result in dissatisfaction with one's own body image (Hogue & Mills, 2019). This is due to the psychological mechanism

of social comparison, which occurs commonly on social media sites and encapsulates one's

comparison with peers, leading to often negative feelings (Verduyn et al., 2020).

　　　Passive engagement on social networks has been linked to decreased

subjective well-being due to its propensity to foster envy and promote upward social

comparison (Verduyn et al., 2017). This is further supported by Escobar-Viera et al. (2018),

who discovered a higher prevalence of depressive symptoms among passive social network

users compared to their active counterparts. Thorisdottir et al. (2019) explored that passive

usage leads to increased symptoms of anxiety and depressed mood. Similarly, Wang et al.

(2014) identified a negative predictive relationship between passive social media usage and

subjective well-being. Moreover, Roberts and David (2023) highlighted that passive usage

correlates with lower perceived social connection and heightened stress levels. Depending on

how social network sites are used, they can affect a person's mental well-being negatively or

positively (Verduyn et al., 2017). However, behavioral patterns in usage are not the only

determinant of the effects of social media on one's well-being.

　　Research showed that the intensity of social media usage itself is of great importance

when considering the mental well-being of users. Keyte et al. (2020) and Roberts & David

(2023) identified a relation between increased Instagram use and poor mental well-being. A

systematic review targeting research about the relationship of Instagram use and mental well-

being resulted in associations of heightened Instagram usage and lowered self-esteem, social

comparison, depressive symptoms, a negative body image and disordered eating (Faelens et

al., 2021). Hardy and Castonguay (2018) found a relation between heightened Instagram use

and increased anxiety for users above the age of 30. Over the course of three studies Roberts

& David (2023) found that social media usage behavior moderates the effects that social

media use intensity had. For frequent social media users, more passive engagement led to less

social connection, lower wellbeing, and higher stress, while more active engagement led to

more social connection (Roberts & David, 2023). Thus, usage intensity of social media as well as usage behavior appear to affect a person's mental well-being. Previous research has mainly focused on general wellbeing, while little research has been done on the specific dimensions of it. Within this context, one dimension of mental wellbeing has been particularly little researched (Ryff, 1989), namely the sense of purpose in life.

Sense of Purpose in Life

Ryff (1989) characterizes a strong sense of purpose in life as encompassing a sense of direction and intentionality, a perception of meaning in both present and past experiences, the presence of beliefs that give life purpose, and the presence of goals for living. A low sense of purpose on the other hand is described as having few goals, lacking a sense of direction, seeing no purpose in past life experiences, and having no beliefs that give life meaning (Ryff, 1989). Apart of contributing to general mental well-being (Zika & Chamberlain, 1992), having a high sense of purpose in life can lower the risk of being physically inactive, developing sleep problems and having an unhealthy BMI (Kim et al., 2020). Bronk et al. (2009) identified that having a sense of purpose in life is associated with overall greater life satisfaction.

The effect of social media on purpose of life is only moderately researched. A study from Zhanna (2019) found that the number of likes received on Instagram predicted the participants overall sense of purpose in life. Abuhussein and Magatef (2022) found that depending on the content shared, social media use can have a negative or positive impact on the sense of purpose of life. Montag et al. (2023) identified a relationship between problematic social media usage and lower sense of purpose in life. Lastly, active social media users reported on having a higher sense of purpose in life compared to less active users (Keum et al., 2022). Although these results provide first insights, a comprehensive understanding of the interaction between the intensity of social media use, user behavior and sense of purpose in life is still lacking.

Research Objective

The interaction of mental wellbeing and social media is well researched, with high usage intensity and passive usage behavior having mostly negative and active usage behavior having mostly positive effects on mental wellbeing (Escobar-Viera et al., 2018; Faelens et al., 2021; Hardy & Castonguay, 2018; Keyte et al., 2020; Marengo et al., 2021; Roberts & David, 2023; Thorisdottir et al., 2019; Verduyn et al., 2017). Roberts & David (2023) were able to depict these interactions in a relationship in which usage behavior moderates the relationship of usage intensity and mental wellbeing. Sense of purpose in life is a dimension of mental wellbeing (Ryff, 1989), usage behavior has a comparable effect on sense of purpose in life as on mental wellbeing (Keum et al., 2022) and Montag et al. (2023) found a relationship between social media usage intensity and sense of purpose in life. Based on these similarities it is expected that the relationship between social media and sense of purpose in life might be similar to the relationship of social media and mental wellbeing – more precisely, that social media usage intensity and sense of purpose in life have a negative relationship, which is positively moderated by active usage and negatively moderated by passive usage.

This study aims to build on the body of research and add to the understanding regarding relations of intensity of social media use, active or passive social media usage and sense of purpose of life. Given that young people are particularly vulnerable (Kessler et al., 2005) to the issues related to a lack of purpose in life, such as diminished mental well-being (Zika & Chamberlain, 1992), and Instagram is one of the biggest social media platforms with a young userbase (We Are Social & Meltwater, 2023; We Are Social & Meltwater, 2024), this study focuses on university students as the target group and uses Instagram for measurement of usage patterns. Therefore, the research questions of this paper are:

1) "How is Instagram usage intensity associated with the sense of purpose in life of university students?"

2) "To what extend does passive and active usage behaviour moderate the effect of

Instagram usage intensity on the sense of purpose in life of university students?"

Drawing from the literature reviewed earlier the following hypotheses (see Figure 1) were

formulated:

1) H1: A negative relationship exists between Instagram usage intensity and the

sense of purpose in life of university students.

2) H2: Passive usage behavior negatively moderates the relationship between

Instagram usage intensity and the sense of purpose in life of university students.

3) H3: Active usage behavior positively moderates the relationship between

Instagram usage intensity and the sense of purpose in life of university students.

Figure 1

The hypothesized relationship between Instagram Usage Intensity, Usage Behavior and

Sense of Purpose in Life
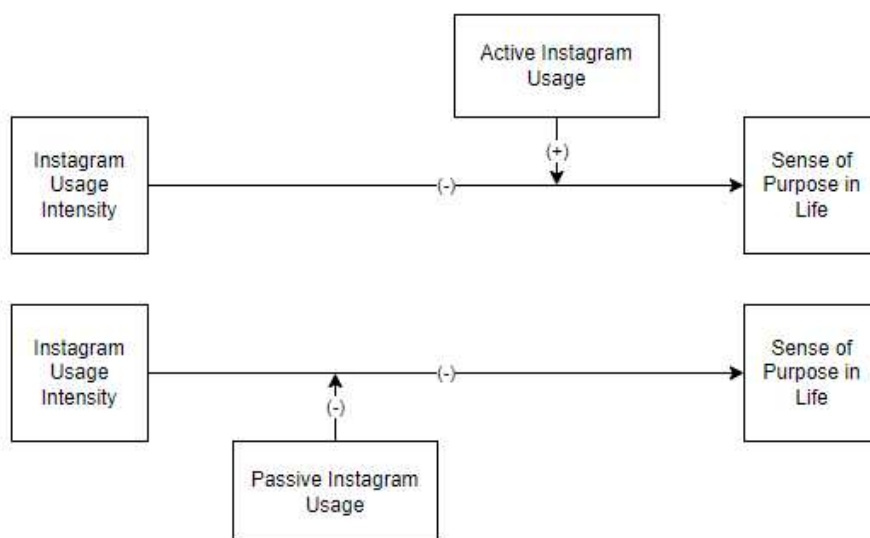
Methods

This study was designed as a quantitative online survey research. By using this research design, it was possible to effectively reach students and gather data that would allow to examine possible moderation effects. Every student who was enrolled at a university during the time of the study was able to take part in the online survey.

Participants

Recruitment has been conducted via convenience sampling, Instagram, student groups on WhatsApp and the usage of the SONA system, provided by the University of Twente. In total 105 participants started the questionnaire. The data was cleaned of 30 participants that dropped out of the survey, did not fill out all relevant questions or incorrectly answered the control question. The demographics of the remaining sample are reported in Table 1. Most participants were German and currently in their bachelor's degree. While a big part of the sample attended the University of Twente or WWU Münster, more than half of the sample attended other universities. This might have been the case as an international audience was reached via WhatsApp and Instagram. The questionnaire gained ethical approval by the Ethics Committee BMS at the University of Twente (File number is 240507). After opening the questionnaire participants had to fill out a consent form to ensure their agreement on participation.

Table 1

Demographics

	N	*%*	*M*	*SD*
Gender				
Male	36	48		
Female	38	50.67		
Other	1	1.33		
Age			22.23	2.33
Nationality				
Dutch	11	14.67		
German	47	62.67		
Other	17	22.67		

Current Level of Study			
Bachelor	53	70.67	
Master	20	26.67	
Other	2	2.67	
Current University			
University of Twente	25	33.33	
WWU Münster	8	10.67	
Other	42	56	

Note. $N = 75$

Materials

The participants needed a device with an internet connection to access the questionnaire on Qualtrics. Apart of demographic questions, three already validated questionnaires were used to assess Instagram usage intensity, passive/active usage behavior and the sense of purpose in life.

Social Networking Time Use Scale

The social networking time use scale (SONTUS) was used to assess Instagram usage intensity (Olufadi, 2016). The questionnaire consists of 29 items, measuring five components (1: relaxation and free periods; 2: academic-related periods; 3: public-places-related use; 4: stress-related periods; 5: motives for use), which were presented to the participants on a 11-point-scale (1: Not applicable to me during the past week – 11: I used it more than 3 times during the past week but spent more than 30 min each time). An example of an item used in the SONTUS is: "Kindly use the scale below to indicate how often you always use the social networking sites like Facebook, Instagram, WhatsApp, Twitter, Myspace, Pinterest etc., during the past week in the following situations and places: When you are waiting for a bus/train at the bus/train station." The items were rephrased to only address Instagram. The scoring and coding of the items was done as presented in Appendix A. Based on the results, the SONTUS allows to classify each participant as being a low, average, high or extremely high Instagram user, with a score of 5-9 representing a low, a score of 10-14 an average, a score of 15-19 a high and a score of higher than 19 an extremely high Instagram user. Olufadi

(2016) reports a Cronbach's alpha for the whole scale of $\alpha = 0.93$, while the internal consistency of each component was as follows: "Relaxation and Free periods" ($\alpha = 0.91$); "Academic-related purposes" ($\alpha = 0.89$); "Public-places-related use" ($\alpha = 0.85$); "stress-related Periods" ($\alpha = 0.86$): "Motives for use" ($\alpha = 0.83$). In the current study a Cronbach's alpha of $\alpha = 0.95$ was calculated for the whole scale and for each component as follows: "Relaxation and Free periods" ($\alpha = 0.82$); "Academic-related purposes" ($\alpha = 0.81$); "Public-places-related use" ($\alpha = 0.85$); "stress-related Periods" ($\alpha = 0.86$): "Motives for use" ($\alpha = 0.81$).

Passive and Active Use Measure Scale

The passive and active usage behavior was assessed by using the Instagram-adapted version of the Passive and Active Use Measure (Trifiro & Gerson, 2019). The adapted version of this scale by Trifiro & Gerson (2019) that was used in this study consists of ten items, with five assessing Passive Usage and five assessing Active Usage. These items were presented randomly to the participants and scored on a 5-point scale (1: Never – 5: Very frequently). An example of an item for the Active Use subscale is: "How frequently do you perform the following activities when you are on Instagram? (Note: Choosing "Very Frequently" means that about 100% of the time that you log on to Instagram, you perform that activity): Posting photos to your profile." An example of an item for the Passive Use subscale is: "How frequently do you perform the following activities when you are on Instagram? (Note: Choosing "Very Frequently" means that about 100% of the time that you log on to Instagram, you perform that activity): Viewing photos." The scoring was conducted by summing all related items for each subscale, with a high score on the Passive Usage subscale indicating high passive usage and a high score on the Active Usage subscale indicating high active usage. Gerson et al. (2017) assessed adequate internal consistency of the original scale for the relevant subscale (passive $\alpha = 0.70$), while Trifiro & Gerson (2019) found a Cronbach's alpha of $\alpha = 0.73$ for the Active Use Measure. The current study found

good Cronbach's alpha for the Active Use Measure ($\alpha = 0.83$) and moderate Cronbach's alpha for the Passive Use Measure ($\alpha = 0.66$).

Revised Sense of Purpose Scale

The sense of purpose in life was measured by using the awareness of purpose subscale of the Revised Sense of Purpose Scale (Yukhymenko–Lescroart & Sharma, 2019), as this subscale measures the "subjective sense that one's life has a purpose to fulfill and having the clarity about one's purpose in life" (Sharma et al., 2017, p.195). This subscale consists of five items and has an internal consistency of $\alpha = 0.95$ (Yukhymenko–Lescroart & Sharma, 2019). An example of an item of the revised sense of purpose scale is: "To what extent do you agree with the following statements?: My purpose in life is clear." In the current study a Cronbach's alpha of $\alpha = 0.95$ was found. The responses to these items were made on a 7-point scale (1: strongly disagree – 7: strongly agree) and scored by summing the items, with a high score indicating high sense of purpose in life.

Procedure

The data collection of the online survey took place from 08.04.2024 to 07.05.2024. The survey started with a brief introduction and general information regarding the study. After consenting to participate, participants were asked whether they are currently enrolled at a university and whether they use Instagram. Answering "no" to either of these questions would end the survey. After this, questions regarding demographics (gender, age, nationality, current level of study, current university) were presented. Following, the questions about Instagram usage intensity were presented on three different pages. Afterwards the items regarding active or passive usage and sense of purpose in life were shown on two pages. After this, the participant completed the questionnaire and could close the website. One control question was mixed between the items to check for frivolous participation.

Data analysis

To answer the research question of how Instagram Usage Intensity affects sense of purpose in life and how passive or active usage behavior moderates this effect and to test the aforementioned hypotheses a research plan was created. The dependent interval-scaled variable in this analysis is the measure of sense of purpose in life, while the independent interval-scaled variable is Instagram Usage Intensity. The moderating interval-scaled variables are passive and active Instagram usage. All analyses were conducted in the statistical computing software R, while a significance level of $\alpha = .05$ was considered statistically relevant.

Descriptive analysis was performed to gain an overview of the demographics as well as a first impression of the collected data. Mean scores and standard deviations were calculated. Pearsons's correlation effect was calculated for descriptive purposes. Following, the first hypothesis was tested by conducting a linear regression analysis. The assumptions of linearity, homoscedasticity, independence, and normality were checked by plotting the dependent variable against the independent one. The assumptions were met.

To test the second hypothesis and the third hypothesis a moderator regression was conducted for each moderator. Once again, the assumptions of linearity, homoscedasticity, independence, and normality were checked by plotting of the relevant variables, as well as the use of the Durbin-Watson test. The assumptions were met.

<div align="center">

Results

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After conducting the study, the following results were achieved. First the descriptives of the sample will be discussed, followed by the correlations of the variables. After that the results of the linear regression and moderator analyses will be presented.

Descriptive Statistics

After applying the coding scheme of the SONTUS scale, the participants overall mean score was 11.51 ($SD = 4.25$). Therefore, according to SONTUS, the sample consists of

average intensity Instagram users. The mean active Instagram usage score of the sample was

13.27 ($SD = 4.39$) and the mean passive Instagram usage score was 18.05 ($SD = 3.45$). Lastly,

the overall mean score for the perceived sense of purpose in life was 21.91 ($SD = 7.39$). The

correlations between each variable can be found in Table 2. A significant relation was found

between Usage Intensity and Passive Instagram Use. Strong relations were found between

Usage Intensity and Active Instagram Use as well as between Passive Instagram Use and

Active Instagram Use. No significant correlations were found between Purpose in Life and

any of the other variables.

Table 2

Pearson's Correlation Effect

Variable	1	2	3	4
Usage Intensity	-	0.285*	0.607**	-0.214
Passive Instagram Use	0.285*	-	0.586**	0.188
Active Instagram Use	0.607**	0.586**	-	0.087
Purpose in Life	-0.214	0.188	0.087	-

Note. * $p < 0.05$. ** $p < 0.01$

Linear Regression Analysis

To test the first hypothesis – that a negative relationship exists between Instagram

usage intensity and the sense of purpose in life of university students – a linear regression

analysis was performed. The results of this analysis can be found in Table 3. It can be

concluded that there was no significant relation between Instagram usage intensity and sense

of purpose in life ($R^2 = .046$, $F (1,73) = 3.502$, $p = .065$). Therefore, the hypothesis must be

rejected.

Table 3

Linear Regression Analysis Instagram Usage Intensity & Sense of Purpose in Life

Variable	B	SE	t	p	95% Confidence Interval	
					Lower bound	Upper bound
Intercept	26.18	2.43	10.76	<0.001	21.33	31.02
Instagram Usage Intensity	-0.37	0.2	-1.87	0.065	-0.77	0.02

Note. Dependent variable: Sense of Purpose in Life; *N*=75

Moderator Analysis: Passive Instagram Use

To test the second hypothesis – that passive usage behavior negatively moderates the relationship between Instagram usage intensity and the sense of purpose in life of university students – a moderator regression analysis was performed. The results of this analysis can be found in Table 4. It can be concluded that there was a significant relation between Instagram usage intensity and sense of purpose in life, as well as Passive Instagram Usage ($R^2 = .099$, F $(2,72) = 3.971$, $p = .023$). A higher Instagram Usage Intensity was associated with decreased levels of sense of purpose, whereas a higher passive Instagram usage moderated this effect positively. Therefore, the hypothesis must be rejected, as an amplification of the negative effect of Instagram Usage Intensity by passive Instagram usage was expected.

Table 4

Moderator Analysis: Passive Instagram Usage

Variable	B	SE	t	p	95% Confidence Interval	
					Lower bound	Upper bound
Intercept	27.68	2.49	11.12	<0.001	22.72	32.64
Instagram Usage Intensity	- 1.24	0.46	-2.68	0.009	-2.17	-0.32

| Passive Instagram Use * | 0.04 | 0.02 | 2.07 | 0.042 | 0.001 | 0.08 |
| Instagram Usage Intensity | | | | | | |

Note. Dependent variable: Sense of Purpose in Life; *N*=75

Moderator Analysis: Active Instagram Use

To test the third hypothesis – that active usage behavior positively moderates the relationship between Instagram usage intensity and the sense of purpose in life of university students – a second moderator regression analysis was performed. The results of this analysis can be found in Table 5. It can be concluded that there was a significant relation between Instagram usage intensity and sense of purpose in life, as well as Active Instagram Usage (R^2 = .11, $F(2,72) = 4.431$, $p = .015$). A higher Instagram Usage Intensity was associated with decreased levels of sense of purpose, whereas a higher active Instagram usage moderated this effect positively. Therefore, the hypothesis can be accepted, as active Instagram usage was anticipated to moderate the negative effect of Instagram Usage Intensity positively.

Table 5

Moderator Analysis: Active Instagram Usage

Variable	*B*	*SE*	*t*	*p*	95% Confidence Interval Lower bound	Upper bound
Intercept	29.66	2.82	10.52	<0.001	24.04	35.28
Instagram Usage Intensity	-1.25	0.43	-2.89	0.005	-2.12	-0.39
Active Instagram Use * Instagram Usage Intensity	0.04	0.02	2.27	0.026	0.005	0.076

Note. Dependent variable: Sense of Purpose in Life; *N*=75

Discussion

The aim of this study was firstly to examine how Instagram usage intensity is associated with purpose in life of university students and secondly to explore how passive

and active usage behavior moderate this relationship. It was expected that a negative relationship exists between Instagram usage intensity and sense of purpose in life, while passive usage behavior moderates this relationship negatively and active usage behavior moderates it positively.

Based on the results of the conducted linear regression, no significant relationship between Instagram usage intensity and sense of purpose in life of university students could be determined. Neither do the correlations present evidence for a significant relationship between Instagram usage intensity and sense of purpose in life. This is in contrast to previous scientific work, that found a relationship between Instagram usage intensity and sense of purpose in life (Montag et al., 2023). Additionally, it is in contrast to the assumed similarities to the well-researched relationship of Instagram usage intensity and mental wellbeing (Keyte et al., 2020; Roberts & David, 2023; Faelens et al., 2021; Hardy and Castonguay 2018), considering that purpose in life is a dimension of mental wellbeing (Ryff, 1989).

There are several possible explanations for this outcome. One possibility is the usage of the SONTUS scale to evaluate Instagram usage intensity, as it is a different approach compared to the evaluation methods used in the mentioned previous research. This was done in an attempt to get more thorough data on usage intensity, compared to just asking how much time is spent on Instagram, but this difference in measuring usage intensity might have led to variations in findings. Another factor could be found in differences in the samples of the studies. This study focused solely on university students, thereby creating a young sample whose Instagram related behavior and general characteristics might vary strongly compared to the different and mostly more diverse samples of other studies. This idea is supported by the work of Fietkiewicz et al. (2016), who investigated different generations behavior towards social media and found many differences in frequency of use, motivation of use or the preferred social media platform that is visited. Lastly, previous research accounted for

different confounding variables such as age (Hardy and Castonguay 2018) or self-compassion (Keyte et al., 2020) that this study did not consider. These differences might have significantly impacted the results.

The results of the moderator analyses revealed significant relationships. Both passive and active Instagram use were found to be slightly positive moderators. In the case of active usage this is in line with the previous research, as active Instagram users were found to report higher sense of purpose in life (Keum et al., 2022). The effect of passive Instagram use contradicts expectations, as a similar relationship to that seen in the context of mental well-being – a predominantly negative effect of passive Instagram usage (Verduyn et al., 2017; Escobar-Viera et al., 2018; Thorisdottir et al., 2019; Wang et al., 2014; Roberts and David, 2023) – was anticipated. The moderator effects suggest that higher levels of Instagram use, whether passive or active, are associated with a greater sense of purpose in life.

The fact that both passive and active usage are moderating in the same direction is noteworthy, as previous studies linked passive usage to negative outcomes. Possible explanations could be found in the different sample compared to other studies as stated above. Additionally, the previous studies did not use the Instagram-adapted version of the Passive and Active Use Measure, but other measures, which could explain some differences. The scale was used in the current study as it was a good fit for its purposes, while other studies focused not solely on Instagram but social media as a whole. Furthermore, Valkenburg et al. (2021) challenged the belief that passive social media usage leads to purely negative effects, by stating that "social media browsing may lead to positive, negative, or no effects among individuals, depending on a variety of dispositional, developmental, social, and situational antecedents, mediators, and moderators" (p. 15). Meier and Krause (2023) mentioned that passive social media usage can cause inspiration, enjoyment and that positive content can be emotionally infectious. Based on these assumptions it is possible that the

sample of this study simply passively used Instagram in a more positive way than the samples of previous studies, leading to a positive instead of a negative effect. Passive usage could be too broad of a classification and many other factors should be incorporated to understand an individual's usage behavior more thoroughly.

The fact that the moderator analyses resulted in significant results, whereas the linear regression yielded insignificant results could hint at a more complex relationship. This is supported by the finding, that sense of purpose in life is not correlated significantly with any of the other variables. Sense of purpose in life might not solely be determined by intensity of Instagram usage, but rather by several other factors. Prior research identified that some factors such as performing physical activities and prosocial behavior or volunteering are related positively to sense of purpose in life, whereas depressive symptoms, anxiety symptoms or hopelessness are related negatively to it (Nakamura et al., 2022). Having fewer friends, living alone and being unemployed or retired are associated with lower sense of purpose in life (Chen et al., 2020). Also, an individual's personality type and possessing self-compassion influences the sense of purpose in life (Suh & Chong, 2021). All of these non-exhaustive factors could influence the relationship of social media and sense of purpose in life in one way or another. These insights, together with a more nuanced measurement of usage behavior could enable future research to take the next step in better understanding the relationship of social media and sense of purpose in life.

Limitations

While being a successful study as a whole, some limitations of this study have to be considered. Firstly, the final sample size of 75 individuals can be considered as rather small when compared to other studies, whereas more participants could lead to better generalizability and reliability of the results.

Secondly, the Instagram-adapted version of the Passive and Active Use Measure was created in the year 2019, whereas this study was held in 2024. As Instagram is a rapidly

growing platform the functions of the platform as well as the user behavior has changed considerably since the year 2019. Therefore, it is possible, that the Instagram-adapted version of the Passive and Active Use Measure that was able to effectively divide Passive and Active users in 2019 is slightly outdated nowadays. Perhaps incorporating the functions and user-behaviors of today's Instagram, such as reels or live rooms, could have resulted in a clearer division of the moderating effects of Active and Passive behavior.

Lastly, some assumptions were made while conducting this study. As the relationship of Instagram usage intensity, usage behavior and sense of purpose in life is not thoroughly researched yet, some hypothesized similarities to the relationship of Instagram usage intensity, usage behavior and mental wellbeing were drawn while constructing research questions and hypotheses. As sense of purpose in life is a dimension of mental wellbeing (Ryff, 1989), these assumptions are not far-fetched, but it might have been more thorough to separately measure the relationship between sense of purpose in life and mental wellbeing beforehand, to guarantee that the assumptions were permissible.

Future research

In the future this study could be replicated. A bigger sample should be recruited and the taken assumptions should be checked in more detail. Most importantly, an updated version of the Instagram-adapted version of the Passive and Active Use Measure must be used to ensure a valid representation of nowadays active and passive usage behavior.

Generally, the relationship of social media and sense of purpose in life must be explored in more detail. This could be done by conducting studies on different social media platforms, such as TikTok or Facebook. Another possibility would be to conduct longitudinal studies to track changes in usage intensity and sense of purpose in life. Qualitative studies could be beneficial as well, as the concept of purpose in life can be complex and different for every individual. Qualitative methods such as interviews could allow to explore more

nuanced perspectives and understand how individuals personally define sense of purpose in life in the context of social media.

Lastly, based on the results of this study, different ways of social media engagement could be analyzed and studied to find a possible relationship between them and sense of purpose in life. First ideas could be to understand what kind of content users consume, in what content they actively participate, or what content they share and investigate if a relationship to sense of purpose in life exists. Many other factors could get involved, highlighting the possible complexity of the relationship.

Conclusion

In conclusion, this study did not find a significant relationship of Instagram usage Intensity on sense of purpose in life of university students. It did find a small, significant, positive moderating effect of both passive and active Instagram usage on this relationship. These results show that a relationship between Instagram usage behavior and sense of purpose in life exists, but more research must be conducted to fully understand it. This study did one of the first steps in exploring the relationship of social media and sense of purpose in life. It paves the way for future studies to improve on it and adds to the existing research.

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Appendix

Appendix A

Scoring was adopted from Olufadi (2016).

In scoring the SONTUS, five component scores are derived. The components scores are summed to produce a global score that ranges from 5 to 23. This approach is in line with the results of our confirmatory factor analysis, which reveals a 5 first-order factors with a 1 second-order factor as the best model for the SNOTUS construct.

Coding Instruction: each and every items in SONTUS is coded as follows:

- 1 = if a respondent select the Likert scale 1–3.

- 2 = if a respondent select the Likert scale 4– 6.

- 3 = if a respondent select the Likert scale 7–9.

- 4 = if a respondent select the Likert scale 10 or 11.

Component 1: relaxation and free periods.

Sum of items 2, 6, 7, 12, 14, 21, 22, 24 and 26 scores	Component 1 score
9–12	1
13–16	2
17–20	3
21–24	4
25–28	5
29–32	6
>32	7

Component 2: academic-related periods

Sum of items 1, 5, 10, 13, 28, and 29 scores	Component 2 score
6–9	1
10–13	2
14–17	3
18–21	4
>32	5

Component 3: public-places-related use.

Sum of items 4, 9, 17, 19, and 23 scores	Component 3 score
5–8	1
9–12	2
13–16	3

Sum of items 4, 9, 17, 19, and 23 scores	Component 3 score
17–20	4

Component 4: stress-related Periods.

Sum of items 3, 8, 15, 16, and 27 scores	Component 4 score
5–8	1
9–12	2
13–16	3
17–20	4

Component 5: motives for use.

Sum of items 11, 18, 20, and 25 scores	Component 5 score
4–7	1
8–11	2
>11	3

Global SONTUS score: sum of the five component scores: _____
Interpretation:

- An individual with a global score that ranges from 5 to 9 is regarded as low user of SNSs.

- An individual with a global score that ranges from 10 to 14 is regarded as average user of SNSs.

- An individual with a global score that ranges from 15 to 19 is regarded as high user of SNSs.

- An individual with a global score that is more than 19 is regarded as extremely high user of SNSs.