The role of social media use in employees perceived stress and productivity across different age groups

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Abstract

Little research has been done on the relationship between the active and passive use of social media on employees perceived stress and productivity. This study aims to investigate the extent to which active and passive use of social media relates to employees perceived stress and productivity and the role of age in this relationships. A questionnaire was administered among employees between the ages of 15 and 62. They completed questions regarding different topics referring to the work context, including their active/passive social media use, perceived stress and productivity. The results provided by correlation and regression analyses showed as expected a positive relationship between active social media use and perceived stress. Furthermore, a negative relationship was found between active social media use and productivity. However, age was not found to be a significant moderator, suggesting that the relationships were not different across age groups, which is not in line with expectations. This study can provide directions that could assist organizations in developing policies that maximize the benefits, and limit the negative outcomes of social media use. However, future research is needed to provide additional support for these findings and should be oriented towards a deeper examination on the concepts active and passive social media use.

Keywords: Social Media Use, Perceived Stress, Productivity, Employees, Age

The role of social media use in employees perceived stress and productivity across different age groups.

Every technological advancement can have a large influence on the life of people and their interaction in the community. The advent of social media has become an important part of everyday life, and due to the wide adoption of smartphones, the use of social media has become more accessible (Kim, Jeong, & Lee, 2010). Social media refers to the computer-mediated tools that allow people to develop, exchange, or share pictures, ideas, videos, and information in virtual networks and communities (Murphy, 2013). A report by Greenwood, Perrin, and Duggan (2016) revealed that social media platform use is rising among adults, with over 52% using two or more social media sites in the United States. Among these social media platforms Facebook remains the most popular social media platform followed by Instagram and Pinterest in the United States.

Previous research on social media has mainly focused on its effect on people's well-being (Woods & Scott, 2016). While it has numerous benefits such as establishing and maintaining relationships, increasing self-esteem, and sharing of information (Best, Manktelow, & Taylor, 2014), social media use has been also associated with negative effects. In their meta-analysis Liu, Baumeister, Yang and Hu (2019) found that social media use has a negative effect on well-being in general. More specifically, social media use can lead to a lower level of happiness, decrease in task performance, and more stress (Brooks, 2015).

Numerous studies have been done on the influence of social media use in the workplace. The results of these studies are conflicting on whether the use of social media has positive or negative outcomes for employees. For example, Cilliers (2013) determined the positive aspects of social media use by employees. Social media seems to improve communication, employees can take charge of their well-being through, it seems to improve

collective bargaining, and organizations are better able to find qualified candidates for a job. Furthermore, social media use among employees creates network opportunities, where they can build relationships and express themselves (Song et al., 2019). In addition, through the use of social media information can be sent immediately to facilitate their work, and collaboration and idea sharing with co-workers is facilitated, which is referred to as mutual intelligence (Mohamed et al., 2019). Also, in companies that encourage their employees to incorporate social media into their workplace, employees feel more attached to the organization and have a more positive attitude towards the organization (Bizzi, 2018).

While some studies thus suggest that the use of social media has positive effects in the workplace, other studies have found more negative outcomes. For example, some research warned that if the use of social media is not managed properly, it can depress organizational performance (Society for Human Resource Management, 2016), or damage relations among employees (Munene & Nyaribo, 2013). According to Mohamed et al. (2019), the use of social media can result in miscommunication and distract employees from their assigned duties.

Previous studies are thus divided about the overall effect of social media use in the work context. To gain a better understanding of whether social media effects are either positive or negative, this study will consider two different types of social media use, more specifically, active and passive use, on two possible consequences: perceived stress and productivity. According Burke et al. (2010) the majority of studies examined the impact of general social media use, and they recognized a lack in division. However, the division of different types of social media use may yield different effects. Therefore, the present study measured the two dimensions of social media use separately. Also, where most research has been done on social media use among young people, little research has focused on older age groups. Therefore, this study will also investigate whether relationships between social media

use and productivity and stress differ across age. First, it is essential to understand the different constructs of this research.

Active and Passive Social Media Use

Social media use can be categorized into two broad groups: active and passive (Trifiro & Gerson, 2019). On the one hand, active social media use refers to situations where individuals engage other social media users actively (Escobar-Viera et al., 2018). For example, posting messages on Facebook, uploading pictures, and commenting on the posts by other users are some forms of active social media use. On the other hand, passive social media use is concerned with simply monitoring the activities of others without any direct involvement between the users (Yu, 2016). For example, when they perform actions such as simply reading the posts of other users, view the photos that they share or just visit their social media profiles.

Most of the research on active and passive social media has focused on the depressed mood of users and showed different impacts on their well-being. For example, various researchers have established that passive social media use exposes individuals, especially adolescents and young adults to a higher risk of anxiety and depression (Thorisdottir et al., 2019; Frison & Eggermont, 2016). Research by Verduyn et al. (2015) suggests that passive social media usage undermines affective well-being. Also, Frison & Eggermont (2015) determined that the active form of social media use was positively related to depressed mood in young man, but was negatively related to young girls' depressed mood as a result of the perceived online social support they feel. Last, passive social media users are less engaged in social media which may reduce their chances of getting addicted to social media and decreases the related negative psychological effects such as stress (MacCormick et al., 2012).

It thus seems that passive and active social media use can have various consequences.

Perceived stress

In general, stress can be defined as a state that occurs when there is a discrepancy between the demands of the environment, an individual, and the estimation of the possibilities to cope with these demands (Kapitein et al., 2006). According to Cohen (1983), perceived stress is a measure of the feeling or thoughts that an individual has about the amount of stress they experience at a given point or period in time.

Researchers have observed with concern that an increasing number of employees are experiencing a high level of stress. For example, the American Institute of Stress (2019) states that 80% of the participants who took part in the survey reported having experienced stress at work. Denq et al. (2019) examined stress and the relation with social media use trough an online experiment conducted in Qualtrics (N=201). Participants were randomly assigned to a stress-enhancing recall activity or a control task and, both groups then completed a questionnaire. From there, the participants were asked to take a 10 minutes break and straight afterwards, they were asked whether they used social media during the 10 minutes break. This study determined that excessive social media use can increase an employee's chance of experiencing stress and suggest that social media use and stress form a loop. As individuals become stressed, they tend to turn to social media for social support and this could further increase the level of stress they experience.

Social media thus seems to impact stress in employees. This is especially relevant nowadays, as there is more information flowing into people's lives than ever before. All this information gives more possibilities for interruptions and distractions. Technologies like social media can have an enormous impact on people's lives (Brooks, 2015). According to Brooks (2015), the use of social media has been implicated in the increase of 'technostress'. Technostress is defined as a state of arousal observed in certain employees who are heavily dependent on computer technologies (Arnetz and Wiholm, 1997). People who are highly

dependent on technologies seemed to experience a higher level of stress (Tarafdar et al., 2007). However, some researchers have noted that social media use can also have stress relieving impacts. For instance, social media offers access to support during difficult moments (Shensa et al. (2016) and allows emotional healing, especially for women (Revathy et al. 2018). Whereas there are some positive effects, the overall effect seems to be adverse. Therefore, it is expected that social media use is positively related to perceived stress.

There is no research found on the consequences on perceived stress for the specific types of active and passive social media use. Nevertheless, previous research on for example, depressed mood, suggests that the consequences depend on how someone uses social media (Frison & Eggermont, 2015). Therefore, both the active and passive use of social media will be included in this study, but predictions will be made based on social media use in general.

Hypothesis 1: Social media use (active and passive) has a positive relationship with perceived stress in the work context.

Productivity

According to Pritchard (1995), productivity can be defined as: 'the combination of efficiency (outputs/inputs) and effectiveness (outputs/goals)'. Effectiveness here is the extent to which set goals are achieved. It is the desire of all kinds of organizations to develop a highly productive workforce. However, many organizations are struggling to bolster the productivity of their employees (Osborne & Hammond, 2017). Evidence indicates that social media use can be one of the factors behind productivity declines. For example, employees can on average get interrupted six to eight times a day by social media (Spira & Feintuch, 2006), and when they come back to the primary task it could take up to 25 minutes to return to the original cognitive state (Czerwenki, Cutrell & Horvitz, 2000). Awolusi (2012) established that distraction through social media use adversely affect employee productivity

and organizational performance, when it is not properly managed to minimize the trade-offs associated with the use of social media.

Baron (1986) provides a theory for understanding the effect that interruptions and distractions have on employees productivity. The Distraction-Conflict Theory adapted to social media use (DCT) consists of three causal parts. Social media sites are distracting (1), the distraction by social media can lead to attentional conflict (2), this attentional conflict leads to a cognitive overload (3). Because of this cognitive overload, created by using social media and performing a complex task at the same time, employees performance on the task is negatively affected. In line with the DCT theory, Jacobsen and Forste (2011) found that in the university classroom social media use was related to lower grades as students were distracted.

Adding to the discussion on the negative impacts of social media on productivity is Walden (2016) who suggests that social media use creates conditions for privacy violations, causes distractions, and makes it difficult for employees to achieve a balance between work and private life. The boundary theory is among the models about work-life balance that can be used to understand how social media use affects productivity in the workplace. According to the boundary theory, people have different roles in their life (e.g. father, boss, employee) and these roles have different identities characterized by goals, beliefs, norms, values, and interaction styles (Koch, Gonzalez, & Leidner, 2012). Distractions caused by social media use at work could lead to an interruption of these roles and disrupt the boundaries (Brooks, 2015). In-role behavior in the work context refers to the various actions that employees are required to complete, for example fully execute assigned tasks, duties, and responsibilities (Vey & Campbell, 2009; Williams, & Anderson, 1991). Researchers are in agreement that social media use affects in-role behavior negatively. For example, Priyadarshini et al. (2020) have noted that people who make excessive use of social media are struggling to focus on and execute their responsibilities as expected. Piszczek & Berg (2014) also established that

individuals need to strive to clear demarcations between the various roles and positions that they occupy, every distraction (e.g. social media) can result in role stress and a decrease in employees productivity.

In contrast to the researchers mentioned above, Wu (2013) determined after the introduction of a social networking tool that social media use can also drive employees productivity and boost job security in information-rich networks, but there is a trade-off between engaging in social communication and gathering various information. So, only when the social media use of employees is well organized and employees are held accountable for their use, social media use can drive both employees work performance and job security. Despite the fact this researcher found that social media use enhances employee productivity, the various negative effects of social media cannot be dismissed. Therefore, it is expected that social media use is negatively related to productivity.

Because there is no research found on the consequences on productivity for the specific types of active and passive social media use, predictions will again be made based on social media use in general.

Hypothesis 2: Social media use (active and passive) has a negative relationship with productivity in the work context.

The Moderating Effect of Age

Previous research on social media found age disparities in social media use: younger individuals are represented stronger on social media networks (Greenwood, 2016). Most of the studies have focused their attention on the influence of social media on students and young adults. In a research among Swiss teenagers conducted by Lutz, Ranzini &, Meckel (2014) it was found that older teens were more stressed because of social media use compared to younger teens. Furthermore, Leist (2013) also established that for older adults not much is known about potentially negative consequences of social media. They only find

that older adults are more likely to misuse data as well as the critical adaption of potentially harmful information which can lead to stress. Besides these findings, little research has been done on the exploration of the effect of different ages on the relationship between the use of social media and perceived stress and productivity in the work context.

Some research has been found that there is a difference in how common and widespread social media is between the different age groups. It is understood that younger employees are far more likely to embrace different social media platforms compared to older employees (Perrin & Anderson, 2019; Pfeil et al., 2009). A possible explanation for this is found by Knowles and Hanson (2018) who determined that older employees find new technologies frustratingly difficult and that it cost them more effort to use. Given that older employees are less used to social media, it is not surprising that older workers report more stress and distracted more when they have to use social media.

It thus seems that older employees experience more negative effects from using social media than younger employees. Therefore, it is expected that the relationship between social media use and perceived stress, as well as productivity, is stronger for an older generation compared to a younger generation.

Hypothesis 3a: The positive relationship between social media usage and perceived stress will be stronger for older people compared to younger people.

Hypothesis 3b: The negative relationship between social media usage and productivity will be stronger for older people compared to younger people.

Context

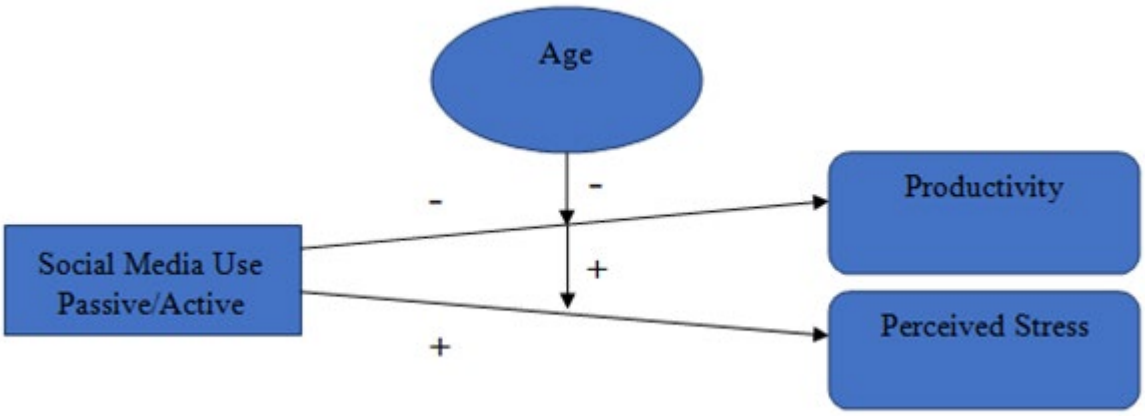
This study has been conducted during the coronavirus pandemic, which affected the working environment of many people. The consequences as a result of the coronavirus on people's well-being and the economic stability are enormous (Fetzer, 2020) and could provide a deviation of the results from the actual impacts of social media in normal situations.

The government has published research-based guidelines on social distancing and staying safe outside home. For example, avoiding busy places and staying 1.5 meters apart. Therefore, many companies ask their employees to work from home which may affect employees perceived stress and their productivity. Research by Moore (2006) has shown a negative relation between homeworkers and perceived stress. However, employees may experience a higher level of perceived stress related to the coronavirus outbreak (Medeiros, 2020). Lastly, working from home can both positively and negatively affect productivity (Allen, 1987). According to this researcher, one of the negative effects of working from home is distraction. As discussed before, the use of social media may negatively affect productivity. Given this context, the research took the effect of working from home into account, and it therefore can be explored whether the use of social media predicts more stress now than before.

The research question developed for this study is:

To what extent does social media use impact employees perceived stress and productivity and to what extent does age moderate these relationships?

Model 1 shows an illustration of the conceptual framework that will guide the present study:



Model 1. Conceptual Model of the Present Study

Method

Participants

In total 163 respondents volunteered to participate in this study. Respondents of the current study were part- or fulltime employees and had to be proficient in the English language. However, 32 participants were excluded as a result of missing values and 17 participants were excluded because they did not have a part- or fulltime job (N = 114). They ranged in age from 15 to 62 years with a mean age of 26.18 years in the total sample (SD= 8.15). Gender was distributed proportionally with the sample consisting of 41.2% (N = 47) males and 58.8% (N = 67) females. Furthermore, 65.8% (N = 75) of participants work in the public sector, 33.3% (N = 38) in the private sector and 0.9% (N = 1) was self-employed. The recruitment of participants was obtained in different ways. For example, via e-mail, by phone, in person or by social media. As a result of these various ways of approaching, employees in several sectors were reached.

Research Procedure

The questionnaire was conducted via Qualtrics, an online survey tool for collecting information from respondents. Filling in the questionnaire took approximately 10 minutes and data collection was completed in May and June 2020. Before participating in this study participants were asked to read general information and complete the informed consent where the purpose of this study is explained, and anonymity is guaranteed. Then participants were asked to give permission to participate in this research. The only requirement to fill in the questionnaire was that the participant had a part- or fulltime job. Participants completed questions regarding several topics, including social media use (active and passive), perceived stress and their productivity at work. Thereafter, demographic questions were asked, including gender and age.

Measures

Social media use. The independent variable was social media use at work. The first general question that was asked for this variable is cumulative and retrieved from Woods and Scott (2006): ‘*’How much time do you spend on social media during working time for purposes not-related to your work?’’*. The social media use intensity of participants was measured in this question with a slider from 0 to 24 hours and adapted to the work context.*

Further, the Multidimensional Scale of Facebook Use (MSFU) developed by Frison and Eggermont (2015) was used to measure the active and the passive form of Facebook use among participants. The MSFU-scale was adjusted to the active and passive form of social media use in general and specified to the work context (APPENDIX A). Participants were asked to respond to the questions on a 5-point Likert-scale, which varied from never (1) to several times a day (5). Social media use active (SMUA) consisted of the first 5 items. An example of an item from SMUA is: ‘*’How often do you post a message on your own social media account during work time?”*. The obtained Cronbach’s Alpha of this subscale was α= .710, indicating an acceptable reliability. Social media use passive (SMUP) consisted of the last 5 items, including for example, “*How often do you visit a social media profile of a (online)friend during work time?’’*. The obtained Cronbachs’s Alpha of this subscale was α=.879, indicating a good reliability. A higher overall score for SMUA, as well as SMUP, means that the participant used more social media in the work context, for purposes not related to work.

Perceived stress. Regarding the variables, the first dependent variable measured was perceived stress. Hence, this variable was measured by the Perceived Stress Scale developed by Cohen, Kamarck and Mermelstein (1983) and consists of 13 items, adapted to the work context (APPENDIX B). The questions include, for example: ‘*’In the last month, how often*

**Note:* question is removed, because the time range was not specified (e.g. daily or weekly use).

have you felt nervous and "stressed" at work?'' and '*'In the last month, how often have you found that you could not cope with all the things that you had to do at work?*''. Participants were asked to respond the questions on a 5-point Likert-scale, which varied from never (1) to always (5), with a higher score indicating more perceived stress at work. Out of the 13 items, 6 items were asked positively and were thus reverse coded. For example, '*'In the last month, how often have you been able to control irritations at work?*''. The reliability of the questionnaire was measured with Cronbach's Alpha, and a value of α =.757 was found, indicating an acceptable reliability.

Productivity. The second dependent variable measured was productivity using 7 items based on the Productivity scale developed by Williams & Anderson (1991) (APPENDIX C). Some examples of the include items are: '*'I adequately completes assigned duties at work''* and *''I meet the formal performance requirements of the job''*. Participants were asked to respond the statement on a 5-point Likert-scale, which varied from strongly disagree (1) to strongly agree (5), with a higher score indicating greater productivity. Out of the 7 items, 2 items were asked negatively and were thus reverse coded. For example, '*'I fail to perform essential duties at work*". The reliability of the questionnaire was measured with Cronbach's Alpha, where a value was found of α = .838, indicating a good reliability.

Age. Age, the moderator in the current study, was measured with the open question: *''What is your age?''.* Respondents were asked to indicate their age in numbers. **Control Variables.** To ensure that the relation between social media use and perceived stress, and the relation between social media use and productivity is not influenced by other factors, this research controls the following variables: Gender, Work from home since Corona (0-100%) and Used to work from home (0-100%).

Data Analysis

The data was analyzed in IBM SPSS statistics version 24. First, a preliminary analysis was conducted to examine the missing values, check the reliability and to see if the items were normally distributed. A descriptive analysis of the variables was performed to summarize the data, which described the characteristics of the sample, including means and standard deviations. Secondly, a correlational analysis has been performed to describe the strength and direction of the relationship between the variables. Then, hierarchical multiple regression analyses were performed to examine the relation between active/passive social media use and perceived stress, the relation between active/passive social media use and productivity and in particular the role of age in these relationships. In total 4 multiple regression analyses were performed, where either perceived stress or productivity was the dependent variable, active/passive social media use the independent variable, and age the moderator variable. The independent variable and moderator were first centered before testing a moderation effect in a new model. Then, it was checked whether interaction effects were significant to test the hypotheses that age moderates the relationship between social media use and productivity/perceived stress. The interaction with social media active was examined first followed by the interaction with social media use passive in another model. When the interaction effects were not significant, main effects will be examined for the models not including the interaction term.

Results

Descriptives

A correlational analysis has been performed to summarize the data of the participants and to see whether there were any correlations between the dependent variables *Perceived Stress and Productivity*, the independent variables active social media use (*SMUA)* and

passive social media use *(SMUP)* and the control variables *Age, Working from home since Corona (%), Used to work from home (%)* by means of Pearson Correlation-coefficient (Pearson's *r*). In Table 1, the descriptive statistics and the correlations are shown.

There is a significant negative correlation between perceived stress and productivity (r = -.54, p = <.001). As expected according to the formulated hypothesis about the relation between social media use and perceived stress and productivity, the correlation is positive for social media use active and perceived stress (r = .35, p = <.001) and negative for social media use active and productivity (r = -.24, p = <.05). Contrary to what was expected according to the hypotheses, the passive form of social media use was not significantly correlated with both perceived stress and productivity.

Furthermore, as expected a significant negative relationship between work from home and perceived stress (r = -.20, p = <.05), and work from home and productivity (r = -.18, p = <.05) was found. Lastly, these results indicate that people who work from home used more active social media(r = .19, p = <.05). And, employees who worked from home since the coronavirus outbreak reported significantly more passive social media use, compared to office workers (r = .27, p = <.05).

Table 1: *Pearson Correlation Coëfficients for the Correlation Between the Dependent Variables, the Independent Variables and the Control Variables and the Mean and SD*

	1	2	3	4	5	6	M	SD
1. Perceived Stress	-						26.67	5.98
2. Productivity	-.540**	-					28.18	3.93
3. SMUA	.350**	-.237*	-				11.32	3.88
4. SMUP	.135	.011	.547**	-			13.84	5.73
5. Age	-.041	.035	.024	-.105	-		26.18	8.15
6. Work from home since Corona (%)	-.018	.002	.072	.272**	.100	-	38.59	42.49
7. Used to work from home (%)	-.199*	-.184*	.188*	.140	.054	.223*	9.97	20.48

Note. *$p < 0.05$, **$p < 0.01$; N = 114.

Hierarchical Regression Analyses

In order to answer the research question, four hierarchical linear regression models were computed and examined, after checking the data for assumption violation regarding: normality, linearity, homoscedasticity and multicollinearity. In the analyses no serious violations were found, meaning that the data is suitable for further analysis.

To test the first hypothesis that social media use is positively related to perceived stress, a hierarchical multiple regression analysis was performed that examined which factors are predictive of perceived stress and whether an interaction effect exists between social media use, both active and passive, and age on perceived stress (Table 2). Model 1 included the centered independent variables SMUA and SMUP, age and the control variables gender, the percentage of work done from home generally and the percentage of

work done from home since the corona outbreak. This model explained 18.3% of the variance in perceived stress (R2adjusted= .137, F = 3.989, p = .001). Within this model, the active use of social media turned out to be the only significant predictor, indicating that a more active use of social media was associated with higher perceived stress scores (B =.643, p<.001). In Model 2, the interaction between age and active social media use was included. This model explained 20.8% of the variance in perceived stress (R2adjusted = .156, F=3.987, p =. 001), and was not a significantly better model compared to the model without the interaction term (R2change = .026, Fchange = 3.428, B = .026, p = .067). This suggests that the relationship between perceived stress and SMUA was not different across age groups, which is not in line with the hypothesis. Last, in Model 3 the interaction effect between age and passive social media use was added to model 1 and explained 20.1% of the variance in perceived stress (R2adjusted=.148, F =3.803, p =.001). However, the addition of the interaction between age and social media use passive did not cause a significant change in the variance that was explained (R2change =.018, Fchange = 2.379, B = .020 p = .126). This suggests, contradicting the hypothesis, that there was no significant effect for the interaction with age and social media use passive in the relation with perceived stress.

Table 2: *Summary of Hierarchical Regression Analyses of the Dependent Variable Perceived Stress on the Demographic Variables, Control Variables, Independent Variables and the Interactions*

Predictor Variables	*Model 1*			*Model 2*			*Model 3*		
	B	SE_B	β	B	SE_B	β	B	SE_B	β
SMUA	.643**	.169	.417	.579**	.170	.375	.575**	.173	.372
SMUP	-.086	.115	-.083	-.080	.114	-.076	-.040	.118	-.039
Work from home since Corona (%)	-.010	.013	-.073	-.011	.013	-.077	-.013	.013	-.092
Used to work from home (%)	.050	.027	.170	.044	.027	.151	.044	.027	.152
Gender	2.167	1.104	.179	1.845	1.106	.153	2.140	1.097	.177
Age	-.045	.066	-.061	-.026	.066	-.035	.029	.081	.039
SMUA*Age				.026	.014	.168			
SMUP *Age							.020	.013	.169
R^2		.183			.208			.201	
F		3.989**			3.987**			3.803**	

Note. * $p < .05$, ** $p < .001$; *(N=114).* Gender is dummy coded (1 = male, 0 = female).

Next, to test the hypothesis that social media use is related negatively to productivity and whether there is a difference in age in the relationship between active and passive social media use on productivity, another hierarchical multiple regression was performed. The results are displayed in table 3. Model 1 included, SMUA, SMUP and all control variables. This model explained 12.7% of the variance in productivity (R2adjusted= .078, F = 2.592, p = .022). Within this model, the active use of social media turned out to be the only significant predictor. In line with the hypothesis, the active use of social media was associated with lower productivity scores among employees (B = -.369, p = .002). In Model 2, the interaction effect between age and active social media use were included. This model explained 12.9% of the variance in productivity (R2adjusted = 0.71, F = 2.239, p = .037),

and was not a significantly better model compared to the model without the interaction term (R2change=.002, Fchange=.229, B = .005 p = .633). This suggests that the relationship between productivity and SMUA was not different across age groups, which is not in line with the hypothesis. Model 3 predicted whether an interaction effect exists between the passive form of social media use and age on productivity, this interaction term was added to model 1. The total variance in productivity explained by this model is low: 12,7% (R2adjusted=.069, F=2.204, p=.040). However, the addition of the interaction between age and social media use passive did not caused a significant change in the variance that was explained (R2change=.000, Fchange=0.018, B = -.001, p = .894). Again, contradicting the hypothesis of the moderating effect of age in this relationship, an interaction between age and either passive social media was not supported by these results.

Table 3: *Summary of Hierarchical Regression Analyses of the Dependent Variable Productivity on the Demographic Variables, Control Variables, Independent Variables and the Interactions*

Predictor Variables	*Model 1*			*Model 2*			*Model 3*		
	B	SE_B	β	B	SE_B	β	B	SE_B	β
SMUA	-.369*	.115	-.363	-.380*	.118	-.374	-.364*	.119	-.359
SMUP	.154	.079	.224	.155	.079	.225	.151	.081	.220
Work from home since Corona (%)	.001	.009	.008	.001	.009	.007	.001	.009	.009
Used to work from home (%)	-.032	.018	-.166	-.033	.018	-.171	-.032	.018	-.165
Gender	-1.014	.752	-.127	-1.071	.764	-.135	-1.012	.755	-.127
Age	.036	.045	.075	.040	.045	.082	.032	.056	.066
SMUA*Age				.005	.010	.046			
SMUP *Age							-.001	.009	-.015
R^2		.127			.129			.127	
F		2.592*			2.239*			2.204*	

Note. * $p < .05$, ** $p < .001$; *(N=114).* Gender is dummy coded (1 = male, 0 = female).

Discussion

The purpose of this research was to investigate and explain the impact of active and passive social media use on employees' perceived stress and productivity. Furthermore, this study aims to answer the question whether these relationships are moderated by age. The majority of the existing studies examined the impact of general social media use, and they recognized a lack in division. However, the division of different types of social media use may yield different effects (Burke et al. (2010). Also, where most research has been done on social media use among young people, little research has focused on older age groups. Therefore, to contribute to existing studies, the present study measured the two dimensions of social media use separately and investigated the influence of different age groups on these relationships.

The first hypothesis stated that active and passive social media use had a positive relationship with perceived stress at work. This was partly supported by the results, which showed a significant positive relation for active social media use and perceived stress at work. Another interesting finding in this study partly confirms the second hypothesis, where a negative relationship was expected between active and passive social media use and productivity in the workplace. The correlation analysis and hierarchical regression analysis showed how an increased active social media use is related to lower productivity scores. Contrary to what was expected, the passive form of social media use was not significantly related to both perceived stress and productivity. Furthermore, the regression analyses showed that the relationship between active and passive social media use and perceived stress, and the relation with both forms of social media on productivity were not different across age groups, which was not in line with the expectations.

Notably, an increase in perceived stress was also found to be related to lower productivity of employees. This supports Ghafar and Mohamed (2016) findings that job stress directly and

significantly contributes to work avoidance. Also, Dailet et al. (2020) suggests that more stressed people are more likely to be addicted to social media. This excessive use of social media results in detrimental effects on productivity (Priyadarshini et al.,2020), which is in line with the hypothesis.

The main finding in the regression analyses indicates that the use of social media was associated with a higher prevalence of perceived stress, this was in line with previous research (e.g. Brooks, 2015) and partly in line with the hypothesis. Only the active form of social media use was found significant in the relationship with perceived stress. According to Kuss and Fernandez (2016), empathic concern, conscientiousness, and depression were examples that related to addiction in social media use. These psychological factors indicate that employees are somewhat emotionally invested in social media. One explanation for the significant relationship with active social media users might be that there is a deficit in inhibitory control over their use of social media since they need to constantly respond to their counterparts on social media on time. This increases the technostress, which seems more associated with active social media use (Duke & Montag, 2017). In this research participants use social media significantly more in the passive way and thus choose only to observe and be informed by the content of social media rather than engaging with it. As a result, passive social media users may be less engaged and emotionally invested in social media and this could reduce their chances of getting addicted to social media, which could decrease the negative psychological effects such as stress (Frison & Eggermont, 2015). This could explain the higher stress scores with an increase of active social media use. However, the expected positive relationship between passive social media use and perceived stress is not significant in this research. Interventions should mainly focus on the active social media users, but more research is needed between these two constructs and to see if the relation differs in strength compared with active social media use.

Another main finding in the regression analysis was that active social media use is negatively related to productivity. This relationship supports, for example, the distraction-conflict theory, suggesting that distractions reduce creativity and performance in jobs that require creative thinking and concentration (Murphy, 2007). Also, distraction can result in motor behavior on complex tasks and negatively affects employees productivity (Baron, 1986). Active use of social media requires more attention compared with passive use, to understand and react to other social media posts and sentiments, as well as, post or share something on their own account. Active users have to engage deeper with the content on social media, this could provide greater distraction as it demands more concentration. This could explain the lowering of productivity scores with an increase in specific active social media use, but not for the passive form. Companies should focus on the difference between active and social media use in their policy. For example, only the passive use of social media is to a certain extent permitted during working hours. However, these differences need to be explored further by additional research.

Furthermore, based on literature (e.g. Knowles & Hanson, 2018; Leist, 2015), this research hypothesized that the impacts of social media use would be more substantial for older people than younger people. The regression analyses rejects these hypotheses, the moderator age has no significant influence on the relationships between active, as well as passive social media use on perceived stress and productivity. One explanation for this might be that age was disproportionally distributed across the sample, the participants included mainly young adults with an average age of 26 years. Also, recent research has shown that younger individuals were highly susceptible to social media addiction compared to older age groups, and users who manifest empathy towards others may have an enhanced psychological resiliency against addiction (Dailey et al., 2020). These findings were not included in this study and might explain the differences in findings. For example, social support with

associated empathy could mediate the relationship of social network use on perceived stress. However, considering there are specific differences in other studies found, age as well as, influential factors such as social support should be taken into account in future research.

Additionally, working from home was associated with decreased effects of both perceived stress and productivity for employees (Allen, 1987; Medeiros, 2010). Many companies ask their employees to work from home due to the coronavirus. This allowed employees to manage their social media use without restrictions from employers (Choudhury et al., 2020). Also, the home environment may reduces employees productivity as result of proximity to families, friends, and other distractions. Last, working from home had a positive impact on employees psychological wellbeing, and thus reduced their perceived stress (Moore, 2016). This research is in line with the existing knowledge, the correlation matrix indicates that the coronavirus pandemic affects both relationships.

Practical Implications

The most important practical implication of this study is that it could guide organizations considering allowing their employees to use social media. Social media use for not work-related purposes can result in negative consequences, like lower productivity and higher perceived stress among employees. The amount of time that employees spent on social media on a day, should also be a point of attention for organizations. As emphasized by Walden (2016), the regulations in the use of social media in organizations should be structured in a way that does not increase stress to workers. Due to the integrated abilities of social media to divert attention from work, it negatively affects productivity. Overuse can result in addiction which is associated with negative emotions, such as stress. This study could assist these organizations in developing policies that maximize the benefits of social media use while limiting the adverse outcomes, so as employees understand implications of their actions concerning the boundary between work- and personal boundaries.

Limitations and Future Research

The current study was conducted within the time of the Covid-19 pandemic. The consequences as result of this impactful crisis are enormous and may provide a deviation of the results from the actual impacts of social media in normal situations. Therefore, the results should be interpreted with this in mind.

Another limitation is that since this study used cross-sectional data, nothing can be concluded about the direction of causality. Participant have to fill in the questionnaire just at one concrete moment, which means that different factors can influence and cause deviation in results. In this research, the effects of social media use on perceived stress and the effects of social media use on productivity were measured separately. Future research could introduce both stress and productivity together, as both of these factors are related as well (Ghafar and Mohamed, 2016; Priyadarshini et al., 2020). However, how both of these factors work together in relation to social media has not been investigated. For example, it could be that the amount of stress a person experiences due the use of social media, also affect their productivity. Another explanation could be that the use of social media at work leads to a decrease in productivity, and that from getting behind at work, people experience more stress. To disentangle this process, studies should further investigate the reasons behind the increased stress levels and decreased productivity. Also, other influential factors can affect the relationships conducted in this research, such as other stressors (e.g. arguing with co-workers, home-related problems). To control these factors, researchers can choose a different study design, such as a longitudinal study with more in-depth questioning. In this study participants have to fill in the questionnaire multiple times during at least one year and is therefore more representive.

Moreover, regarding the generalizability of this study, the data was gathered in the Netherlands and consisted of mostly young, higher educated participants. Hence, the

results can be not generalized to other settings and future research could conduct a similar study with a more diverse sample, including age, education, occupation, to test whether the results hold. Another suggestion for future research is to include gender as mediator. However, no significant relation with gender was found in this study, the role of gender deserves more attention. For example, previous research suggest that the active form of social media use was positively related to depressed mood in young man, but was negatively related to young girls' depressed mood as a result of the perceived online social support they feel. Lastly, other variables that could be of influence could be considered, like the effect of social support given by social media.

Advancements in technology have resulted in an exponential rise in the use of social media platforms and have been shown different impacts in organizations. Despite some limitations, this study showed how the active form of social media use is related to a lowered productivity and higher stress levels among employees, and is not different across age groups. The implications of the findings are significant and contribute to the growing literature on the use of social media in the work context. With this knowledge, organizations get more insights in the different forms of social media use and their consequences. However, additional research is needed to provide additional support for these findings and for them to be applied into organizational policies.

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APPENDIX

A. MSFU

The following questions will ask you about your **personal** social media use, thus just for purposes not-related to your work.

1. How often do you send someone a personal message on social media during work time?
2. How often do you chat with someone on social media during work time?
3. How often do you post a message on your own social media account during work time?
4. How often do you post a picture on your own social media account during work time?
5. How often do you post/share something else (e.g., a picture or video) on your own social media account during work time?
6. How often do you visit a social media profile of a (online)friend during work time?
7. How often do you visit a social media profile of someone who is not a (online)friend during work time?
8. How often do you watch photos on social media of (online)friends during work time?
9. How often do you watch photos on social media of someone who is not a (online)friend during work time?
10. How often do you read your news feed during work time?

B. Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly at work?
2. In the last month, how often have you felt that you were unable to control the important things at work?
3. In the last month, how often have you felt nervous and “stressed” at work?
4. In the last month, how often have you been able to control irritations at work?

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring at work?
6. In the last month, how often have you felt confident about your ability to handle your personal problems at work?
7. In the last month, how often have you felt that things were going your way at work?
8. In the last month, how often have you found that you could not cope with all the things that you had to do at work?
9. In the last month, how often have you felt that you were on top of things at work?
10. In the last month, how often have you been angered because of things that were outside of your control at work?
11. In the last month, how often have you found yourself thinking about things that you have to accomplish at work?
12. In the last month, how often have you been able to control the way you spend your time at work?
13. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them at work?

C. Productivity/In-role behaviors

To what extent do you agree with the following statements?
1. I adequately completes assigned duties at work.
2. I fulfill responbilities specified in job description.
3. I perform tasks that are expected from me.
4. I meet the formal performance requirements of the job.
5. I engage in activities that will directly affect my performance evaluation.
6. I neglect aspects of the job which I obligated to perform.
7. I fail to perform essential duties at work.