

EXCESSIVE SMARTPHONE USAGE AMONG CHINESE HIGH SCHOOL STUDENTS

Abstract. Smartphone usage affects many aspects of a students' life and behavior on a global scale. We are all very dependent on our smartphones to perform many different and useful functions that have become essential in the modern world. In Chinese high schools, students often arrive at school sleep deprived, without having completed assignments, and generally lacking motivation. These behavioral effects have been attributed to excessive smartphone usage, a growing problem with students and the general global population. Previous research has associated increased smartphone use to multiple motivating factors, including maintaining and developing social interactions with those who are not close in proximity, for those who are generally isolate to reach out to others, and to make other social connections. In the present study, researchers made three primary hypotheses regarding what types of motivation students from a Chinese metropolitan area would be related to either increased or decreased smartphone usage, and whether males who were not local to their peers would demonstrate increased smartphone use, for social engagement.

Keywords: Smartphone usage, Chinese high schools, social motivation, social connections, school performance.

1. Introduction

In Chinese high schools, it is so common for students to wake up tired even on weekends with a pile of homework overdue. Were they out of time? Yes, indeed. But not only because of the heavy study workload from school or after class, it was because of the excessive smartphone usage. Smartphone has become so multifunctional, that it can be used as a medium for exchanging and displaying emotions, which affects people's life both positively and negatively (Silva, 2012) make conclusion and commenting on the observation.

Smartphone has a lot of helpful functions. One of the most popular usage of smartphone is social usage. Social usage involves interacting with one's social network through social media interaction, and instant messaging (Elhai et al., 2017). It can help people connecting to each other regardless time and space.

While socializing on smartphone can be so helpful in life, there are a lot of factors that can cause

too much interaction between teenagers and their phones. The fear of missing out, depression, and loneliness can result in more smartphone social usage (Shen et al., 2020). Meanwhile, phubbing can cause addiction of smartphone usage, which leads to a more frequent usage of phone (Niu et al., 2020). People, especially teenagers, may find themselves socializing on their phones for way longer than they would've expected. The over usage of phone takes massive amount of people's time, makes it hard for students to plan their life properly and affects their growth and health. That's why it's important to take a good look into this issue.

1.1. Motivation and smartphone usage

When finding the reason for excessive cellphone usage, it is important to look at what motivates people to use them. There are many variables that affect people's motivation for smartphone usage, including gender, age, mood, and other demographic characteristics. People find support to talk to people with

social usage (Zhang, 2017). They can share their life problems with people who are going through similar things and they don't necessarily have to live near each other. There are more people that are willing to listen to them through social media, so they can feel supported and have a wider resource of audience. Students who are isolated and have trouble establishing relationship with peers are more likely to use smartphone for social usage to fulfill their needs (Lim & You, 2019), and to cope with life problems (Wang et al., 2015). The need for them to communicate with others doesn't go away because the fact that they're isolated. As a result, they manage to find other ways to share their thoughts and feelings, but with the online world. Dealing with problems that go on in life is extremely difficult sometimes, and it gets worse when there is nobody to talk to. Sharing thoughts with people can help people cope with their negative experiences in life.

Emotions can cause different behaviors as a motivation, so they can help us to adapt to our surroundings faster. Emotion can influence human activities in many ways. When people are in a good mood, they tend to help people more often (Isen, 1999). In daily life, it is probably easily to be observed that after someone is in a bright mood, they are more willing to give help to others, while the bad mood can do otherwise. When someone is in a bad mood, they are likely to lose interest in activities and just want to be alone. However, it is also true that bad mood can make people feel isolated and distanced from other people, making them want to interact with people more. One interesting area to explore is the frequency and nature of people's smartphone usage for social purposes.

1.2. Motivation and smartphone social usage

Nowadays, people are getting busier and more exhausted by work and study, that they sometimes struggle to get motivated every day to keep doing what they need to do. There are many variables that can affect people's motivation and behavior, one of which is mood. Moods do not have influence on the goal priority or a lasting impact on the intensity or

persistence of behavior, but they do affect motivations and behavior through directive and informational mood impact.

Gender, grades, residency and smartphone social usage

Girls are more likely to be affected by the social interactions and stresses. Therefore, they will be more likely to use cellphone for social usage (Gore et al., 1993). Girls have higher chances of underestimating their cellphone usage for texting, which means they use it for social usage more than they thought, leading to a longer use of smartphone social usage. They tend to use cellphone more when they don't realize it, which was motivated by all kinds of effects in life. The younger they are, the less frequent they use cellphone for texting and social usage. (Forgays et al., 2014). Residency can influence people's social smartphone usage, too. People with a local residency may tend to use their phone for social usage more because they have more connection locally that they need to maintain through regular communication. On the other hand, people who are not local may use it less frequently for social purposes because they don't have a wide range of acquaintances. But it is possible that there are no significant differences between local and nonlocal people's usage of phone socially since nonlocal people may want to socialize more than people who already know quite a lot of people locally, resulting in frequent social usage of phone, too.

The present study

The present study aimed to test the following hypotheses: Hypothesis 1): people with study motivation are unlikely to use smartphone primarily for social activities; 2) people with bad mood motivation are unlikely to use smartphone primarily for social purposes; Hypothesis 3): Nonlocal students, male, higher grade is less likely to use phone primarily for social activities.

Method

Sample and procedure

Data were collected from an intermediate school in a metropolitan city in China. A trained graduate

student approached potential participants during psychology class sessions. The potential participants were given instructions which includes the purpose and procedure. The trained graduate student obtained informed consent from the participants and their parents. The participants fill out the same copy of paper-and-pencil survey continuously for 15 days. Towards the end of the study, each participant also completes a one-time questionnaire that includes demographic questions and other questions that assessed their trait characteristics.

Measures

Categorical variable.— The first one was the measurement of smartphone use motivation. It was measured by one item in the questionnaire: “what was your primary motivation to use smartphone yesterday?” The participants were given 6 motivation options to choose from: bad mood, study related, boredom, emergency, unconsciousness, and relaxation.

Dependent variables.— smartphone social usage. This was measured using one item on the daily survey. “What was your primary smartphone usage yesterday?” social, gaming, entertainment and study were provided to choose from. The participants can only choose one out of the four. Before analyzing the data, they were recoded into 4 binary variables.

Covariates.— Age, grade and residency are all measured as categorical variables in the one-time questionnaire. There are three options for the variable of hukou: local residency, nonlocal residency, and don’t know (the participant didn’t know where his or her residency was). Grade is also measured as categorical variables, giving the participants 2 options: junior grade in intermediate school and senior grade in intermediate school.

Results

Descriptive statistics

Table 1 presents descriptive statistics for the sample characteristics. Study variables and covariates are significantly different across smartphone use motivation. Among participants with the six smartphone use motivations, those who were mo-

tivated to use smartphones because of unconscious reasons reported highest frequency of using smartphones primarily for social activities. Students who use phones for the motivation to study are more likely to use nonsocial usage rather than social usage. Students who are motivated by bad mood are also more likely to use phones for nonsocial activities. Age differs across each group. Those who use phones because of bad moods were reported oldest age verses the other groups. Among boys, the biggest motivation for them to use phone for social usage is study related, and they use phone for this motivation more than girls. Among local students, the biggest motivation is study related.

Results from multilevel logistic regression analyses

Table 2 presents the results of the multilevel hierarchical logistic regression analyses with the smartphone usage measure as outcome variable. The smartphone social usage had ICC values (.76) that were above the conventional criteria (>.10; Snijders & Bosker, 1994), which required a multilevel data structure. Then, to examine our hypotheses, logistic regression model was analyzed by testing the main effect of motivations on smartphone social usage after considering the grade, gender, and Hukou variables.

After controlling for all covariates, the results provided support for our hypothesis regarding the motivations disparities on smartphone social usage. We found that students who were motivated to use smartphone for study and bad mood had lower probability to use phones for social usage than the reference group, which were the students who use phones because of unconsciousness motivation. Specifically, students motivated by study related motivation ($OR = 0.07, p < .001$) and by bad mood ($OR = 0.06, p < .01$) are much less likely to use phones primarily for social usage than students motivated by unconscious reasons. Similarly, students with nonlocal hukou ($OR = 0.50, p < 0.1$) have lower probability to use smartphone primarily for social usage than students that didn’t know their hukou.

Table 1. – Sample descriptive statistics: Chi-square and one-way ANOVA results (N= 1626)

Variables	M ± SD (Mdn) or%							X ² (df) or F (df _b , df _w)
	Totals	Boredom (N=469)	Study related (N=842)	Contact (N=60)	Unconsciousness (N=163)	Relaxation (N=66)	Bad mood (26)	
habitusage								85.35(15)***
Social	593	208	231	26	86	30	12	
Entertainment	550	121	348	17	37	21	6	
gaming	212	57	113	7	22	8	5	
study	142	43	80	9	3	5	2	
age	13.00±0.81	12.99±0.88	12.97±0.77	13.13±0.83	12.95±0.84	13.27±0.67	13.35±0.89	2.98(5, 1620)*
AgeAt-FirstUsage	9.84±2.28	9.65±2.52	10.06±2.21	9.05±2.31	9.44±1.82	10.03±2.23	10.10±1.63	4.87(5, 1620)***
gender								18.54(5)**
Male	997	300(30.09%)	536	34	79	35	13	
Female	629	169(26.87%)	306	26	84	31	13	
hukou								114.96(10)***
local	641	153	399	10	42	29	8	
nonlocal	534	156	238	24	79	23	14	
Don't know	195	91	59	14	30	1	0	
grade								18.53(5)**
7	807	252	403	32	89	26	5	
8	819	217	439	28	74	40	21	
Social usage								288.34(5)***
Social	1047	275	145	32	98	25	4	
Nonsocial	579	194	697	28	65	41	22	

Conclusion and Discussion

People who use phone because of bad mood tend to not use it for social purposes. Dealing with social relationships can be tiring and cause people to think too much. It is one of the important factors influencing people's mood. For example, when you have friends around you who is not doing well, they usually become less active online and talk to people. That can be because socializing is exhausting, and since they are already in a bad mood when they use the phone, it is unlikely for them to use it for social usage to increase the chance of getting more tired and getting into a worse mood. (The influence of mood on perceptions of social interactions).

Table 2. – Social usage

	Odds ratio		
	1	2	3
Variables		M ₀	M ₁
Main effects			
Smartphone use motivations			
Unconsciousness (ref.)			
Study related			0.07 ***
Emergency			0.58
Boredom			0.77
Not in study mode			0.34
Bad mood			0.06 **
Covariates			

<i>1</i>	<i>2</i>	<i>3</i>
Grade		
7 th grade (ref.)		
8 th grade		0.57
Gender		
Female (ref.)		
Male		0.54
Hukou		
Don't know (ref.)		
Local		0.10
Nonlocal		0.50 *
Intercept	0.26	7.86 *

The current study show that smartphone use behaviors differed between local and non-local students. Students with non-local residency, who often do not have consistent housing, may have different behaviors regarding phone usage. Students with local residency are most likely to grow up in the area

since young. It is possible that they have a stronger bond and relationship within the city. When growing up, they may have a more stable friendship with peers around them. On the other hand, students who with non-local residency have a high chance of moving when growing up. The environment they live in may be inconsistent, with constant moving from place to place and high frequency of fitting into a new environment. Therefore, they are less likely to have a strong and consistent bond with people around them due to environmental reasons. As a result, their less and weaker social relationships can lead to a less frequent smartphone usage of social activities.

Overall, it is interesting to see how people deal with phone usage and out of different motivation. Most people never really notice the choices they make when they're picking up their phone as a normal action. But behind these decisions is how complicated factors affect us.

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