**CSCI.4923.04 Capstone in Interprofessional Informatics**

**Capstone Introduction**

Sachin Karki

Texas Woman’s University

Denton, Texas

Author Note

Sachin Karki, Texas Woman’s University, Mathematics & Computer Science

**Background**

With the dawn of the modern digital era of information and technology, almost everything is rapidly evolving, and the field of communication is no exception to that. Communication has always found its pace to change simultaneously with the speed of technology. Within the last decade, the global connectivity has taken a massive leap forward and the level of communication has skyrocketed in this period. It’s no doubt that internet and smartphones have played a pivotal part and billions of people are inside the shell of global network and communication. While it can be argued that not everyone has access to the internet, most people do own a smartphone therefore they are somewhat able to stay in connection.

A report from PewResearch.org suggests that as of 2020 approximately 5 billion peoples have the access to smartphones and this number is projected to significantly increase within coming years. While it is exciting that a lot of people are able to stay in touch, the modern era of smartphones has ushered in a whole new generation of communication and transmission of information. Smartphones are the modern iteration of traditional cellphones that just does tasks ranging from minor to major and possibly even more. A standard smartphone is capable to enough to carry out tasks like calling, texting, emailing, taking pictures and videos, loading wide range of applications etc. The smartphone is an “on-the-go” device that one can take anywhere and do anything a phone can do and beyond. A smartphone generally has a hefty price tag attached to it when it comes to a certain brand and set of features. An iPhone 12 which is a latest sensation in smartphone world by the tech giant Apple costs about $699 for the entry tier model. There are other cheaper smartphones that does the same thing as an iPhone does with few restrictions to certain features but the point is, smartphone can be budget-friendly therefore making it affordable for everyone to own and use one. The evolving technology holds the credit for the increment in global connectivity. These technological changes have led to a revision in the very definition of addiction for it not only refers to drug or substance abuse, but now also includes behavioral addictions such as gambling, internet gaming, or even excessive smartphone use (Boumosleh & Jaalouk, 2017). While the global population seems to be jumping on the bandwagon of owing smartphones, there are cases and instances coming out in recent years that excessive use of a smartphone can have a detrimental effect on our health. We aim to take a close look at those effect, analyzing and finding patterns of new insights and evidence and interpreting new meanings through this paper.

**Datasets**

To initiate an analytical narrative for this study, a primary dataset was located via plos.org, from a cross-sectional study between smartphone addiction, depression, and anxiety. The paper titled ***“Depression, anxiety, and smartphone addiction in university students- A cross sectional study”*** from authors *Jocelyne Matar Boumosleh and Doris Jaalouk* will be a laying foundation for the analysis and visualization needed for this study. The dataset retrieved from their prior study contains a random sample of 688 undergraduate students from the Notre Dame University (NDU) along with the raw information about their socio-demographics, lifestyle behaviors, academics, and personality type. For an instance, weekly time spent on the smartphone, specific activity a smartphone was used for, long term effects induced from excessive smartphone use and so on. The dataset served the authors the purpose to ask and answer some of the crucial questions related to their study. i.e. if smartphone addiction poses a threat to mental health of undergraduate students. We will work further with the retrieved dataset to find some more insights from statistical analysis and visualization.

**Preparation**

As assumed not all aspects of our retrieved dataset will be relevant to our analysis. To prepare our dataset in a way it appeals rightfully to our study we must curate it with steps like merging and cleaning. First of all, the dataset will be split into two other datasets. One of the datasets will be a depiction of variables related to smartphone activity meanwhile the other one will be a depiction of the effects it caused. The dataset retrieved from the prior study has some interesting insights that can be used to curate new forms and format of findings. For an instance, the personality type that were prone to excessive smartphone usage in accordance with their interpersonal habits, the number of smartphone users who were likely to admit their excessive use etc. Once relevant aspects of the dataset are selected and separated, new dataset will be used for running analysis and visualization to define and describe nuances of our findings.

**Planning and Methodology**

For our purpose, the dataset will be used to find, analyze, and extract new insights from the variables using statistical correlation and regression. This paper will explore the link between each variable within the dataset and define the nature of such relationship if there exists any.   
To do so, either R, SAS or Python will be effectively utilized to carry out all statistical findings. For an instance, if any relation between different personality types and smartphone addiction exists and describing that relationship. In addition to this, what interpersonal behaviors they practiced were susceptible to addiction and describing the nature of that relationship by directly comparing to the ones which were less susceptible to addiction. Furthermore, any resulting visualization will be done in Tableau. For an instance, group of individuals with personality type A with their respective interpersonal habits and their frequent activities, number of people who would strongly agree on their excessive smartphone use and number of those who deny and so on.

**References**

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