

EMPIRICAL PAPER

Data Science in Research, Business and Society

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Introduction

Social networking services (SNS) have become essential to the daily lives of modern societies. Social media consumption is one of the most popular online activities. In 2020, over 3.6 billion people were using social media worldwide, a number set to hit almost 4.41 billion by 2025.

The (SNS) products that include media which can be viewed, commented, and most important shared, have become an indispensable activity in people's lives. Social Media can be quickly defined by dividing the concepts. The term media refers to content in the form of audio, text, video, which are published and shared online. The social part gives users the opportunity to share content and communicate with each other. People use the technology to stay informed, compare and buy products and keep in touch with family and friends. However, now it is also possible to follow individuals that aren't a part of one's immediate social sphere. The downsides? Humans have evolved to be incredible social beings and we are quite attentive to the behaviour and status of others. Through tribal communities and thousands of years we have been tuned to be quite aware of the people in our surroundings and our own relation to those people. The ability to find ones position in a hierarchy of individuals is in psychological terms called social comparison and interpersonal skills. With social media however, the ladder is not present, we default to compare ourselves with others to an extent that latest mental health statistics can only indicate are increasingly harmful to us [logos argument : 1/3 teen girls on Instagram develop eating disorders].

In this context we were interested in how social media is affecting students' ability to deal with daily stresses and further exactly how social media might be affecting their moods and what short-term effects this might include. Also, being students, we found that we had a unique perspective on how the technology may affect our peers and each of our daily academic lives. Since adolescents enrolled in educational institutions are expected to be attentive and aware, a sort of rope pulling effect occurs between the institutions and social networking services being able to engage the daily lives of teens enrolled in educational institutions. Going into the research collective personal experience pointed in a direction of how students' moods might be affected which was a lower satisfaction in one's own productivity due to being distracted by social media. This affecting perception of oneself and thereby mood in negative light.

Background

A number of previous studies have investigated various social networks and probed in the core knowledge of integrated social networks. But most of them study

Methods

Research question: How do students perceive the short- and long-term effects daily usage of Facebook have on their emotions?

Study design - Epistemology

This study aims to examine the relationship between Facebook and university students. The focus was to know why people use Facebook and how they use it. We also wanted to know how they feel after using it. It was a general assumption that the before mentioned questions would help us structure our study design. The research design was a qualitative explorative case study based on results from a semi-structured interview with a diverse and multi-cultural participant group. The epistemology behind the study was rooted in a moderate social constructivist framework. Interview results were produced by an inductive analysis which framework come from Braun and Clarke (2006) and interpreted, drawing upon perspectives from behavioral psychology, and social psychology. Sample size was increased with observational data that was scraped data from an anonymous forum. These results were analyzed using a quantitative sentiment analysis. We collected the statements of student's self-reflection regarding the interview questions. The participants had not seen the questions before the interview took place. In consideration to the participants emotions and self-evaluation and the conditions of the qualitative investigation of their statements – we found the semi-structured interviews to be a great fit – since it encourages a less formal and more comfortable setting for the users, but also in turn a more precision in the data collection. This interview structure allowed respondents from time to time, to open about more sensitive issues they were experiencing regarding their Facebook usage. Furthermore, after the interview each of our researchers noted attention to detail regarding the interviewer's body language and tone.

Which as a result provided us with better sense of qualitative data? It was used to insert into each transcription to compare to previous and future data. To get a better understanding of how people feel about this topic, we collected data from Reddit, given that the population of our research was going to be small after all. This made our research a mixed method approach and the intent was to leave the research with a larger potential for generating new ways of understanding the complexities and contexts of the experience of Facebook usage by students.

Organizing the interview (the qualitative data)

The purpose behind the interviews was to gain a rich qualitative insight into the subjective experiences regarding FB usage. The interviews were performed in such a manner that each group member interviewed a person each. To increase the validity of our study, all the participants in the interview where all had a unique cultural background. This is since students from Denmark might be more likely to have their own standards of using Facebook, while this may not be representative at large. A tactic to create a calmer environment to reduce the subject's tension was done by asking introductory questions that we already had information about before starting the interview, an example of such questions: *"Do you use any social media platform?"*, *"Can you explain in a few words why you use Facebook and what are you looking for?"*. Each interviewee made mental field notes relating to the posture and tone of the subject for which probing questions followed, a sample of these types of questions include, *"Can you say something more about [subjects previous answer] while using Facebook?"*, *"Can you give a more detailed description of how you interact with Facebook?"*.

After each interview we prioritized to gain feedback and debrief each participant by asking how they felt during the interview which helped us our intuition in interpreting the interview data

Interviewing and interpreting data

The interview environment where in focus - one participant was seated next to his classmates on the hallway of the university - the interviewee politely asked the participant if it would be okay for him to move to the other end of the hallway, away from his classmates. An important advantage that

controlling the interview environment like this gave us was to decrease the likely of the participants to feel they were being judged by their peers

Since we were interested in knowing about the student's emotional state post FB-usage we need to investigate causalities regarding their actions. To get a grasp of this we investigated the reasons for usage (*i.e., triggers causing them to open FB*), the process and substance of their actions while using FB (*behaviours while using FB*).

Starting with raw data and from there on grouped in 4 different themes from which codes were created.

Codes used in the thematic analysis

- Reasons for using FB
- Triggers to use FB
- Behaviour while using FB
- Mood change

However, gathering and analysing the qualitative data from the interviews to increase the sample size. Looking through the scraped data themes were identified relating to their behaviour

*“... Uhm, mainly if I'm just **bored**, at home, and I have nowhere else to be or **nothing** else to do.” (Most common reason now)*

In our scraping of a Reddit post regarding why 845 individuals quit their FB usage. A sentiment analysis was made of the several different comments

Data cleaning and ethics (the quantitative data)

During the classification of our scraped data, we applied a critical technical practice (CTP) based on ethical concerns regarding the possibility that the qualitative data which was rich on information could be used to aggregate a specific person's identification. By sorting out any information's that could be used to reidentification our CTP was based on intentional data scarcity which included not collecting names, age, addresses and estimation of geographical locations of the anonymised reddit data. In choosing which information's to exclude we limited the precision of our studies.

Demographic variables and geographical data could potentially have helped us in the social psychological studies of the subjects and hidden trends might have appeared, but this could also challenge the ethics around our research, even though it could have strengthened the findings.

Findings

Reasons for using FB

Commonalities from our participants Facebook usage. It was easy to notice that our subjects have the same types of interactions, the same reasons to use FB like, the need to be updated with different events which are organised in their network or by the groups where they are members and to communicate with friends.

However, it was clearer after doing the thematic analysis on their behaviour that some of the subjects also stated that their usage often had something

“... I have been using it a lot more lately trying to get a house here in Denmark.” (Person A)

Triggers to use FB

It was clear from our interview data that the most common trigger for starting FB usage for where social interest, these included the users benefits from features such as groups, events and most often messages. Nevertheless, some of the themes in the participants triggers also included being bored. The two different triggers coded in our thematic analysis were processed and categorised regarding behavioural theories on motivation. The main trigger for most of our participants being social interest for FB usage was categorised as being an intrinsic motivation factor, while being bored was categorised as being extrinsic.

However, the fact that one of our interview participants admitted that his sense of capability was decreased after watching other more skilled which meant that usage of FB for some had an immediate and short-term effect on their mood.

Behaviour while using FB

Immediate and

“It may affect but that's hard for me to kind of notice, because that would be a gradual, small, short term change where it's much easier for me to notice.”

Discussion

Limitations

The methodology in the study could have been increased by first working out the observational data based on the data scraped subreddit rather than starting with the interviews. Since first using the larger dataset to find commonalities and trends that would specify themes and codes that the interview would be based on would be better. Interviews are usually used to fill out holes after a rich data collection.

The semi-structured interview provided an opportunity for the interviewers to increasingly follow up on sensitive that our respondents were experiencing and in lead the researchers to learn more about answers to some questions and the reasons behind the answers. This current study didn't account for demographic variables since this may have showed differences in behaviour

Since the main pillar in the qualitative aspect of our research lies on the participants self-evaluation this is not regarded as a highly valid way of data gathering, since the participants own biases and defences are interfering with the data collection. Social desirability

The longitude of the study was not profound enough to validate the long-term effects of the students daily Facebook usage, to gather further information on their behaviour a longitude of

Conclusion and future work

I will make a case for social comparison and individuals' sense of capability being decreased based on theories that I will stitch together with my own empirical findings (P4: og craftsmanship)

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References

Appendix

Implications of study

"a methodological problem that arises when researchers rely on asking people to describe their thoughts, feelings, or behaviors rather than measuring these directly and objectively. The self-report bias is often cited as a reason to use direct observation whenever practicable"