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Exploring the impact of internet access within the household on students' levels of academic procrastination: a quantitative study on tertiary education students, using a survey

Declaration

I, Jessica Leigh Smith, hereby declare that the Research Report submitted for the Bachelor of Arts Honours degree to The Independent Institute of Education is my own work and has not previously been submitted to another University or Higher Education Institution for degree purposes

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I would like to give a special thanks toward my supervisor, Megan, who greatly assisted in the process of this research study. I would also like to thank my friend, Tyesha, and my parents for supporting me throughout this process.

Abstract

Procrastination exists as an innate human behaviour with negative consequences. With the movement of academic programs onto online platforms following the outbreak of the Coronavirus and the implementation of 'lockdown' regulations, procrastination serves as a barrier to students' academics. With an increased ability to procrastinate, the internet serves as a known source of distraction and exists as a means to participate in academic procrastination. The growing access to the internet within households could pose a potential threat to students' levels of academic procrastination. This research aims to answer how internet access within the household impacts students' levels of academic procrastination. The research took a quantitative approach where data was gathered from a sample of 30 tertiary education students within South Africa who completed a survey over Google Forms. Notable findings included that the majority of students used the internet six or more hours daily, majority of students used the internet as a tool of academic procrastination, and the most used site or application that students used on the internet and when participating in academic procrastination online. Results regarding the research question, however, were inconclusive and revealed that more research will be needed to shed light on the answer.

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1. Introduction

This research study aims to answer the research question of how internet access within the household impacts students' levels of academic procrastination. This paper is divided into 5 main sections. The first section is labeled introduction where the research question and sub-questions will be laid out in relation to its contextualisation, rationale, problem statement, and purpose statement. The second section is labeled literature review where the theoretical foundation of the research, with reference to Zimmerman's Self-Regulatory Learning: the cyclical phases model and the five-factor personality model, will be discussed. This section will also include information from previous literature in relation to the study's key constructs: procrastination, academic procrastination, and internet access. These key constructs along with additional constructs will also be defined and conceptualised in this section. The next section, research design and methodology, will discuss the study's paradigm, approach, population, and sample as well as how the study will gather data and analyse the data gathered. The next section, which is labelled as findings and interpretation of findings, will involve the identification and analysis of data collection in relation to the research question and the research sub-questions. The validity and reliability of the survey will also be discussed in this section. Lastly, the research paper will be concluded with a summary and implications of the findings along with the ethical considerations and limitations of the study.

1.1. Contextualisation

Procrastination has gained much attention over the past decades from researchers. Procrastination exists as an innate human behaviour, however, it has gained a negative reputation due to its undesired consequences it leads to for individuals. Procrastination can be defined as the purposeful postponement of intended tasks or actions despite negative consequences that may result from the delay (Steel, 2007). Procrastination tends to result in poor mental health, physical health, and failure in goal achievement (Moonaghi & Beydokhti, 2017). In modern society, procrastination has the ability to thrive with the growing trend towards unstructured work and education environments, as well as through the increasing availability of the internet, which for many, serves as a source

of entertainment and opportunities to delay the start or completion of mundane daily activities. Further to this, procrastination is seen more often as there is less emphasis being placed on the need for self-regulatory behaviours, despite there being a greater need for these than ever before. Academic procrastination is no exception to these trends.

Within South Africa, up to date research on procrastination and academic procrastination is slim, and research on the relationship between academic procrastination and internet access are nonexistent.

1.2. Rationale

Academic procrastination poses a threat to any student through its consequences. Academic procrastination is known to cause detrimental effects to the individual. Patrzek, Grunschel, and Fries (2012) noted that academic procrastination negatively affects an individual's mental and physical state. Patrzek et al. (2012) state that academic procrastination reduces the individual's self-esteem and self-image through emotions such as guilt and shame that result from procrastination. Academic procrastination results in heightened stress levels within the individual, which also results in a decreased immune system that is more susceptible to illness (Patrzek et al., 2012). Consequences are not limited to the individual, Patrzek et al. (2012) also identify an individual's private life and academic success as being negatively affected by academic procrastination. These threats hold serious consequences in higher education institutions where high tuition costs and difficult courses can prevent individuals from being able to graduate in normal circumstances. Academic procrastination can delay or prevent graduation for the student, through low grades or incomplete coursework (Patrzek et al., 2012).

With the onset of COVID-19, many students have needed to adapt to online learning and the need for greater self-regulation in the homestead, academic procrastination can become an unwelcome barrier to academic work. In Steel's (2007) research on college students, it was found that 80% to 95% of the individuals who participated in the study procrastinated. The majority of the students' procrastination was found to relate to an avoidance of coursework (Steel, 2007). Students who procrastinate often feel increased

anxiety, stress, remorse at having procrastinated, shame, and feelings of sadness (Patrzek et al., 2012). In more serious cases, academic procrastination can lead to, “mental, physical, and psychosomatic illnesses” (Patrzek et al., 2012, p.197). Therefore, students should aim to decrease their academic procrastination where possible, to avoid these negative costs.

Today, the internet is used as a tool to participate in academic procrastination (Lavoie & Pychyl, 2001). Although procrastination has always been present, the internet allows for easier and quicker engagement in high levels of procrastination within difference settings. This growing usage of internet throughout daily life could potentially affect the amount individuals academically procrastinate. This research aims to gain deeper insight into the impact of internet access in the household on students’ levels of academic procrastination. This research holds value because if internet access in households does influence the amount of academic procrastination in which a student participates, it is important to take note of it due to the consequences mentioned above that may follow. These results will influence how students manage using the internet within the household as well as manage their academic procrastination. Individuals may introduce countermeasures to prevent the misuse of the internet, limit academic procrastination, or control the consequences of academic procrastination. The findings from this study hope to empower students around taking a proactive approach to countering academic procrastination. This research also seeks to influence future studies that deal with academic procrastination and its relationship with internet usage as well as serve as a base for future research within the South African context on academic procrastination.

Academic procrastination was chosen as a topic of interest by the researcher as the researcher often tends toward this behaviour when completing academic work. The inclusion of internet access was a result of the researcher directly experiencing being a tertiary education student who had both experienced having and not having internet access within the household. Although, the internet allows for a vast array of entertainment that can preoccupy the individual, the researcher found that despite having little to no internet access within the household, they still experienced academic procrastination in a similar amount to when they had access to the internet. This topic

peaked the researcher's interest as the researcher wished to determine how internet access within the household affected other individuals who were studying.

1.3. Problem statement

Steel (2007) believes that self-regulation failure is increasing in the general population and states that procrastination is a product of self-regulatory failure. With the presence of a global pandemic and global lockdowns taking place, individuals have also had to take a more self-regulated approach to education through online schooling. The internet can be considered a necessity of life in a pandemic for university students, however, it increases the likelihood that students will be distracted through ease of access to more entertaining activities (Reinecke et al., 2018). Academic procrastination has, therefore, taken on a greater online form as people use the internet as a tool to procrastinate (Lavoie & Pychyl, 2001). Academic procrastination can be defined as a predisposition to delay academic activities (Nair & Sathiyaseelan, 2018). Academic procrastination, in excessive quantity, can be detrimental to the individual's physical health, mental health, and their goal achievement (Moonaghi & Beydokhti, 2017). Although academic procrastination and internet access has been studied within South Africa, most of the studies are outdated or do not explore the relationship between academic procrastination and internet access in relation to each other. Thus, the issue lies in that it remains unknown whether internet access in the household impacts students' levels of academic procrastination. This study aims to gain more information on this relationship in order to fill in this gap in the research.

1.4. Purpose statement

In line with the problem statement mentioned above, the purpose of this study is to explore the impact of internet access in the household on South African tertiary education students' levels of academic procrastination. Thus, the research goals entail determining the length of time tertiary education students spent on the internet per day when at home, if university students use the internet as a tool for procrastination, and identifying which site or application students use the most when academically procrastinating.

1.5. Research question

The research study aims to answer the question: “How does access to the internet within the household impact the amount of time a student participates in academic procrastination?”.

1.6. Sub-questions

On top of aiming to answer the research question, the researcher has identified sub-questions that will also aim to be answered.

Sub-question 1: How much time, on average, do South African tertiary education students spend on the internet per day, at home?

Sub-question 2: Do South African tertiary education students use the internet as a tool of procrastination?

Sub-question 3: What site or application do South African tertiary education students use the most when academically procrastinating?

2. Literature Review

Procrastination has held the interest of researchers due to its irrationality and consistent appearance in human behaviour, despite humankind’s ability to behave and act rationally when chosen. Procrastination is believed to be an inherent behaviour in humans and mentions of it date back to approximately 700BC when a Greek poet named Hesiod refers to it in his poem, ‘Works and Days’ (Hesiod, 1978). Although research on procrastination and academic procrastination before 2010 is abundant, research after is not, making the availability of up-to-date sources limited. South African research is also limited as the amount of information on procrastination, within this context, is lacking. A notable South African study on academic procrastination is Joubert’s (2009) research which aimed to test various factors and their relationships with academic procrastination, including

academic achievement, gender, and personality traits, on high school students. The issue with Joubert's (2009) research is that it is outdated. Internet research, although more up-to-date and abundant, still lacks application regarding procrastination. Research on internet addiction by Thatcher and Goolam (2005), briefly mentions procrastination and its link to internet addiction through distractibility, however as the researchers' aim was to determine the prevalence and characteristics of these individuals, this link was not discussed in depth. Thatcher and Goolam's (2005) research is, also, outdated. Therefore, there is a gap in the South African research and a need to integrate these two topics, procrastination, and the internet, but specifically in relation to tertiary students. The literature review will provide the foundation upon which the core concepts will rest and the lens through which the findings from the study will be analysed and justified. Zimmerman's Self-Regulated Learning: the cyclical phases model along with the five-factor personality model will provide the theoretical underpinning for understanding and making sense of the existing literature on procrastination, as well as making sense of the results of this research study. Procrastination will be discussed in-depth, with particular focus on academic procrastination and its effects on the individual. Internet access will then be reviewed in relation to procrastination. Finally, key concepts will be explained, and their definitions explored in relation to this specific study.

2.1. Theoretical foundation

2.1.1. Zimmerman's Self-Regulated Learning: the cyclical phases model

Zimmerman (2000) defines self-regulation as an individual's belief in their ability to participate in the 'correct' behaviours and emotions, while continuously reflecting and monitoring themselves, to enable the pursuit and completion of their goals. Pintrich (2000) defines the same concept as being as an individual's monitoring, regulation, and control over their behaviour and motivation to achieve a consistent progression toward self-set goals within their contextual environment. This is similar to Zimmerman's definition as the individual monitors themselves as well as aims to achieve a certain goal through self-regulation, however, self-reflection is less prominent according to the latter. Zimmerman's cyclic process of self-regulation revolves around these three stages under different

names: the forethought phase, the performance phase, and the self-reflection phase (Grunschel, Patrzek, Klingsieck, & Fries, 2018).

The forethought phase focuses on the stage before learning starts and involves task analysis and self-motivation beliefs (Grunschel et al., 2018). Task analysis entails assessing, planning, and goal setting for the task (Grunschel et al., 2018). Self-motivation beliefs involve focusing on self-efficacy and goal orientation (Grunschel et al., 2018). Self-efficacy refers to an individual's belief in their ability to change their environment and serves as the base for motivation (Bandura, 1997).

The performance phase centers around the active learning or completion of the task (Grunschel et al., 2018). Key characteristics of this phase are self-control and self-observation (Grunschel et al., 2018).

The self-reflection phase happens after the task, learning activities, or goal has been completed (Grunschel et al., 2018). This phase involves self-judgement and self-reaction.

Steel (2007) views procrastination as a deficit in self-regulation, thus when Grunschel et al. (2018) applied Zimmerman's Cyclic Phases Model to learners who procrastinate, it was found that the learners showed deficits within each of these phases. Grunschel et al. (2018) identified in their study, that individuals who procrastinated lacked planning and goal-setting skills. Furthermore, researchers, Klassen, Krawchuk, and Rajani (2007) also identified in their study of 456 undergraduate students, which explored the relationships between academic procrastination, self-regulation, academic self-efficacy, self-esteem, and self-efficacy for self-regulation, that procrastinating students showed low levels of self-efficacy. These skills and characteristics are identified as requirements in the forethought phase. This means individuals who lack these skills and characteristics are more likely to procrastinate around the completion of tasks or learning activities.

Task aversiveness, as identified by Thatcher, Wretschko, and Fridjhon (2007) is put forward as one of the main reasons for procrastination. This is because individuals who have low perseverance are more likely to procrastinate when task difficulty is high, or the task is unstimulating (Thatcher et al., 2007). Task aversiveness, thus, affects the individual's ability to take action in the performance phase of the model due to the

individual being more likely to be distracted or procrastinate the task, while attempting to complete the task (Grunschel et al., 2018). Task aversiveness, according to Blunt and Pychyl (2000), evokes feelings of dullness, annoyance, and/or hatred. Zimmerman states in his mood management theory that individuals will try to address their negative mood by engaging in more enjoyable tasks (Reinecke et al., 2018). These pleasurable tasks may involve using the internet as a source of entertainment. Another issue that would affect an individual in this regard is their level of distractibility (Grunschel et al., 2018). Steel's (2007) research connects distractibility to procrastination through its ability to interrupt tasks the individual is in the process of completing. Thus, distractibility is higher in individuals who tend to procrastinate (Steel, 2007). The internet can serve as a distraction due to its ease of accessibility and the increased opportunities that are available for the individual to engage in entertaining activities, and thus could present a barrier for students with high distractibility who have internet access (Thatcher et al., 2008).

The final phase, self-reflection, views individuals who procrastinate as being more likely to blame external influences or global attributions for any result they achieved, as proven in Ferrari's (2001) research. This means individuals who procrastinate are unlikely to self-reflect, a necessary step towards correcting their behaviour, and therefore, they will continue to procrastinate going forward.

Based on the aforementioned model, academic procrastination is viewed as a failure in being able to self-regulate and is a product of deficits in the forethought phase, performance phase, and the self-reflection phase task (Grunschel et al., 2018; Steel, 2007).

Zimmerman's model has been criticised as it does not consider emotions required to self-regulate (Panadero & Alonso-Tapia, 2014). Further to this, other theorists have criticised Zimmerman's lack of focus on the origin of self-regulation. However, as Zimmerman's (2000) research is highly regarded in the psychological field and it serves as an integrated model which includes cognitive, behavioural, and motivational aspects, it will be used as a basis for this research. As self-regulation failure is believed to cause procrastination,

Zimmerman's (2000) model will be used to assist in identifying behaviours that relate to academic procrastination in individuals who participate in answering the survey.

2.1.2. Five-Factor Model of Personality

The five-factor model of personality is well-known and acclaimed in the psychological field. The model summarises personality into five core traits in order to assist in understanding human behaviour. It has gone through advancements by various researchers over the years, the latest advancement identifies five main personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism (Kail, Cavanaugh, & Muller, 2019). The personality traits identified by the five-factor model have been proven to have correlations with an individual's levels of trait procrastination, and these correlations will be discussed in depth in this section.

The procrastination that this model refers to is, specifically, trait procrastination. Trait procrastination refers to procrastination which occurs to the extent that it can be seen as a distinguishing characteristic of an individual (Sirois, Yang, & Eerde, 2019). In a study conducted, by Abood, Gazo, Alharbi, and Mhaidat (2019), which included determining the connection concerning procrastination and the five-factor model personality traits, trait procrastination consistently scored a medium to strong correlation with two of the five traits, neuroticism and conscientiousness, found in the model. Procrastination shares a strong negative correlation with conscientiousness (Lee, Kelly, & Edwards, 2006). Lee et al. (2006) define conscientiousness as the predisposition to be co-ordinated and tenacious in achieving one's goals. Conscientiousness, as a trait, is characterised by people who are hardworking, ambitious, persistent, energetic, and meticulous (Kail et al., 2019). Limited conscientiousness remains the strongest predictor of procrastination in individuals (Joubert, 2015; Steel, 2007). Steel (2007) has identified key concepts that relate to conscientiousness and correlate with procrastination. Concepts such as distractibility and intention-action gap, correlate negatively with conscientiousness and positively with procrastination, while organization and achievement motivation correlated negatively with procrastination and positively with conscientiousness (Steel, 2007).

In Lee's et al. (2006) study on procrastination, procrastination was also determined to have a moderate positive correlation with neuroticism. Neuroticism is defined by Lee et

al. (2006) as the predisposition to experience psychological distress and negative emotions. Neuroticism refers to people, who are characterised by anxiousness, hostility, sadness, impulsivity, vulnerability, and self-consciousness (Kail et al., 2019). In relation to Zimmerman's mood management theory, these individuals are more likely to procrastinate in order to 'correct' their negative mood (Reinecke et al., 2018).

Academic procrastination shares these correlations with conscientiousness and neuroticism (Moslemi, Ghomi, & Seyed, 2020). However, in a study done by Steel and Klingsieck (2016), neuroticism was found to be a lesser determinant of academic procrastination once the conscientiousness was controlled. The main trait behind neuroticism that contributes to academic procrastination is impulsivity (Steel & Klingsieck, 2016). Impulsivity works on a reward and punishment principle where individuals are more inclined to choose the reward because it is easier and pleasurable in the short-term, in contrast to the unpleasurable and difficult task which proves to be more beneficial long-term (Steel & Klingsieck, 2016). An example of this is an individual choosing to scroll through social media, an easily accessible and pleasurable activity, instead of working on their assignment, a difficult activity. Steel and Klingsieck (2016) did, however, find that the reasoning individuals used to justify academic procrastination and the activities used to procrastinate were influenced by these neurotic behaviours and emotions, namely: irrational beliefs, low self-efficacy and low self-esteem, task aversiveness, self-handicapping, and/or depression (Steel, 2007).

Although academic procrastination cannot be fully predicted from all of the five personality factors, it can still be predicted through conscientiousness and neuroticism (impulsivity), which will help inform questions relating to behaviour and emotions that play a role in identifying academic procrastination in students completing the survey.

2.2. Review of Previous literature

2.2.1. Procrastination

For purposes of this research study, the positive form of procrastination will not be used. This positive form refers to inaction based on an individual's choice to delay a process in

order to gather more information or until more time is available to them (Steel, 2007). In accordance with this specific study, the literature review will refer to the negative form of procrastination, which holds more undesirable consequences for the individual. Blunt and Pychyl (2005) define procrastination as a person's inability to transform thoughts and intent to participate in actions into the actual actions (intention-action gap). Both Steel's and Blunt and Pychyl's definitions focus on the inactive nature of procrastination, however, they differ in their explanation of the purpose behind the inaction. Steel states that participating in procrastination is intentional, while Blunt and Pychyl's definition maintains that the individual intends to participate in the action. This contrast in intentionality has divided the viewpoints researchers have taken in explaining procrastination (Steel, 2007; Blunt & Pychyl, 2005). Klingsieck (2013) identifies four main theoretical approaches to understanding procrastination: the motivational and volitional psychological approach, the clinical psychological approach, the differential psychological approach, and the situational psychological approach.

Motivational and volitional psychology views procrastination to be a malfunction in the motivation and/or volition aspects of an individual (Klingsieck, 2013). Academic procrastination positively correlates with lack of ambition or aim, and low self-efficiency (Steel & Klingsieck, 2016). Klassen et al. (2008) completed a mixed-methods research study on undergraduates, which aimed to gain insight into academic procrastination, using a self-regulated learning viewpoint. Klassen et al. (2008) demonstrates that academic procrastination is linked to low self-efficacy, specifically, for self-regulation. Linking to Zimmerman's belief that procrastination is a result of poor self-regulation.

The clinical psychological approach centers around the correlation between procrastination and negative emotions, and psychological disorders (Klingsieck, 2013). The main triggers for procrastination are understood to be fear of failure, anxiety, and/or depression, however, a criticism of this viewpoint is that the causal relationship can be reversed (Steel & Klingsieck, 2016). In other words, this perspective can be aligned with the five-factor model of personality and its view of neuroticism, as the negative emotions are characteristics of this trait. Zimmerman's mood management theory can also be

applied here as failure to self-regulate is viewed as an attempt to counter negative feelings.

The differential psychology perspective approaches procrastination as a personality trait (Thatcher et al., 2007; Klingsieck, 2013). Trait procrastination is viewed as being a stable and consistent behaviour in an individual (Diener & Lucas, 2020). This specifically relates to the five-factor model as these researchers equate trait procrastination to its positive correlation with neuroticism and its negative correlation with conscientiousness (Thatcher et al., 2007; Klingsieck, 2013).

Lastly, the situational perspective focuses on contextual and situational factors that lead to procrastination (Klingsieck, 2013). This perspective has become a trend in newer research (Steel & Klingsieck, 2016). Theorists, who follow this belief, view procrastination as a side effect of task aversiveness (Thatcher et al., 2007). Steel and Klingsieck (2016), build on this base and state that a task's attractiveness, importance, or difficulty also affects the likeliness that one will engage in procrastinatory behaviour. This aligns with Zimmerman's Self-Regulated Learning.

2.2.2. Academic procrastination

Although researchers' views of procrastination differ, the interest surrounding procrastination does not. Procrastination is a behaviour that can be found across settings. One setting in which procrastination is most prevalent is the academic context where research has showed that almost all students procrastinate in some form (Ellis and Knaus, 1977; Harriott & Ferrari, 1996; Schouwenburg, 1995). The population samples used in procrastination research are often university students, as these individuals are easily accessible to researchers, this means that procrastination research is often studied through academic procrastination. Thus, research on procrastination mostly relates to academic procrastination unless otherwise stated. Steel (2007) defines academic procrastination as purposefully delaying academic or educational tasks in contrast to the known belief that one may be worse off. This definition follows along the same ideas as Steel's definition of generalised procrastination, the only difference is that the tasks being delayed are academic in nature.

Steel (2007) identifies four major factors that lead to academic procrastination, namely: task characteristics, individual differences, outcomes, and demographics. These notions have then been subdivided based on what is assumed to predict procrastination the best.

Task characteristics focuses on the environmental causes of procrastination (Steel, 2007). Environmental causes refer to the external factors over which the individual has no control (Steel, 2007). Steel (2007) identifies task aversiveness as a strong and consistent predictor of academic procrastination.

Individual differences, according to Steel (2007), follow along the idea of trait procrastination in which procrastination is a part of an individual's personality, thus implying that some individuals are more likely to procrastinate than others based on their personality makeup. This follows the theoretical framework of the five-factor model of personality.

Demographics revolves around physical and cohort moderators (Steel, 2007). Demographic characteristics that affect procrastination include age and gender, however the relationship is weak (Steel, 2007).

Lastly, outcomes refer to the proximal effects that result from academic procrastination (Steel, 2007). Steel (2007) centers outcomes around mood and performance. Mood refers to the individuals attempts at mitigating the negative emotions they experience in the moment by procrastinating, which in turn leads to feeling additional negative emotions later (Steel, 2007). Mood was found by Steel (2007) to not be a definitive predictor of procrastination, thus contradicting Zimmerman's mood management theory. Performance exists as less of a clear determinant of procrastination (Steel, 2007). Procrastination can be said to increase performance in the eyes of the procrastinator, however, procrastination is correlated with poor academic performance and therefore these views were not supported in all research (Balkis & Erdinç, 2009). Procrastination can have no effect on performance according to Chu and Choi's (2005) study on undergraduates. However, Steel (2007) defines procrastination as having negative consequences, otherwise procrastination is impossible to differentiate from time management. Lastly, procrastination has a negative effect on performance as identified by Steel (2007).

A study by Patrzek et al. (2012), on college students, investigated factors, specifically perfectionism, anxiety, and depression, that are as a result of academic procrastination, and found that academic procrastination holds negative consequences to an individual's health, wellbeing, and academic success. Academic procrastination has been proven by Patrzek et al. (2012) to have consequences on an individual's personality, affect, motivation, mental and physical state, their private lives, and the course of their studies. Academic procrastination is accompanied by feelings of guilt, anxiety, sadness, and remorse in the individual (Patrzek et al., 2012).

Patrzek et al. (2012) highlight that students lack motivation to change their procrastination habits and are more likely to blame external sources for their behaviour. Patrzek et al. (2012) state that, in their study, counsellors identified a lack of social networks or contacts correlated with academic procrastination due to conflict between relationships as a direct result of the student's academic procrastination or as a consequence of the stress developed from it. Other consequences to the student's private life included financial issues in achieving their education and the need to change life plans (Patrzek et al., 2012). Students faced higher rates of mental, physical, and psychosomatic illnesses and reported higher levels of stress (Patrzek et al., 2012). Thus, the importance of countering possible factors that may lead to the increase of academic procrastination, and therefore its consequences, has value to the individual as well as their community.

Academic procrastination can endanger the student's ability to complete or succeed in their studies (Patrzek et al., 2012). Academic procrastination, as proven by Patrzek et al. (2012), results in poor grades, poor performance, extending education plans, repeating of assignments, and/or the snowballing of work. All of these can lead to stress or the termination of studies, however, consequences of academic procrastination are personalised to the student (Patrzek et al., 2012).

Most students view procrastination as problematic, but there are still students who received no negative consequences or, even, experienced benefits to their behaviour (Briody, 1980; O'Brien, 2002; Patrzek et al., 2012). Patrzek et al. (2012) identified having more time to socialise, more time to enjoy university life, as well as decreased stress levels were listed as benefits to academic procrastination. Though, it must be noted that

the stress relief is short lived when procrastinating and can instead worsen as the task's due date draws nearer (Patrzek et al., 2012). Chu and Choi (2005) acknowledge that active procrastinators, who purposefully postpone tasks to maximise time management or because they 'work better under pressure', do not receive the negative consequences of passive procrastinators as they still perform the task at the same level to meet their satisfaction and mitigate any consequences. As stated previously, the consequences of academic procrastination are an important characteristic in differentiating between procrastination and time management.

2.2.3. Internet and procrastination

The availability of and access to the internet has vastly increased since its inception, and now more than ever it has become a global necessity in modern-day life. Furthermore, the presence of Coronavirus and the 'lockdown' policies implemented to counter its spread, force individuals to work from home, which has increased the time spent online by individuals drastically.

The internet, in modern-day society, is often used as a tool for procrastination, to the extent that researchers even coined multiple terms for it, such as internet procrastination, cyberslacking, and cyberloafing (Lavoie & Pychyl, 2001; Lim, 2002). Although the internet serves as a powerful and useful tool to individuals, it also serves as the easiest platform to justify and participate in procrastination with the guise of being productive to the mind and to other individuals (Lavoie & Pychyl, 2001). In a study completed by Lavoie and Pychyl (2001) on the amount of internet procrastination in which individuals participate, 50.7% of the participants reported their engagement with internet procrastination as being frequent. Lavoie and Pychyl's (2001) study also identified that 47% of time spent on the internet by the participants was reported to be procrastinatory in nature. Lavoie and Pychyl (2001) theorise that internet procrastination comes about as a result of the individual attempting to mitigate negative emotion, specifically stress. This follows along Zimmerman's mood management theory (Reinecke et al., 2018). Engaging with the internet then becomes an easy activity requiring minimal effort as procrastination becomes a click away (Reinecke et al., 2018). The internet also provides increased

opportunities for the individual to procrastinate or continue procrastinating (Reinecke et al., 2018). An example of this is Youtube's multiple and continuous recommendations of videos to watch following watching one video. These characteristics make it more difficult to self-regulate, thus individuals who possess the trait procrastination, which is already characterised by low self-regulation abilities, are more likely to procrastinate. A German study on 1577 internet users, conducted by Reinecke et al. (2018), aiming to determine the association between trait procrastination, internet usage, and psychological wellbeing of individuals, found that trait procrastination positively correlated with the increased use of the internet as an entertainment source. Reinecke et al. (2018) also found that individuals used the internet to participate in activities which were more pleasant or tempting than the original task. Internet procrastination, although it has short term benefits, still holds the same negative consequences of traditional procrastination, and thus exist as a threat towards the individual's wellbeing (Reinecke et al., 2018).

2.3. Conceptualisation

- This research will use Steel's (2007) definition of procrastination, where he defined procrastination as the purposeful delay of intended tasks or actions despite negative consequences that may result from the delay.
- Academic procrastination is defined as purposefully delaying academic or educational tasks in contrast to the known belief that one would be worse off (Steel, 2007).
- The internet is defined as "an international computer network that allows users all over the world to communicate and exchange information" (Internet, 2007, p. 356).
- Internet access is defined as the ability of an individual to access the internet through any form of electronic devices.
- Household is traditionally defined as "all the people who live together in the same house" (Household, 2007, p. 327). Household in this research study, however, will be defined along the lines of a dwelling like "a house etc. to live in" (Dwelling, 2007, p. 214). The household will assume to be the student's most used place of study or academic workspace aside from the tertiary institution.

- This research study will refer to internet access within the household as being the ability to access the internet through any internet access methods in one's place of living.
- For the purpose of this research study, tertiary institution students will refer to individuals, in South Africa, who are currently completing their full-time degree at a tertiary institution.
- In this study, self-regulation will be referring to an individual's belief in their ability to participate in the 'correct' behaviours and emotions, whilst continuously reflecting and monitoring themselves, to enable the pursuit of and completion of their goals, occurring to the definition outlined by Zimmerman (2000) earlier.

2.4. Conclusion

This literature review set the foundation for this South African research study, on academic procrastination and internet access within the household. Procrastination was dissected and identified as a failure in self-regulation, according to Zimmerman's Cyclical Phases Model, and a product of personality characteristics in relation to the five-factor personality model. Previous literature on procrastination was laid out to set-up a broad understanding of procrastination before discussing academic procrastination. Academic procrastination was then discussed in relation to procrastination as well as in relation to the research question. Internet access in the household was identified as a tool for procrastination. This research study aims to learn more about the relationship between academic procrastination and internet access, to fill in the literature gap, specifically within the South African context. This research study hopes to provide some clarity to future researchers who aim to mitigate academic procrastination which has been proven to have negative effects on students' wellbeing, and physical and mental health.

3. Research Design and Methodology

In order for this research study to provide clarity on the relationship between internet access within the household and academic procrastination, the researcher's methodology must be discussed.

3.1. Paradigm

This research aims to gain a deeper understanding of the relationship between the two variables and thus will take a quantitative approach. Quantitative research is often paired with a positivist paradigm, due to the shared value they both place on objectivity and fact (Jansen, 2020). Positivism is defined as the belief that an objective truth or reality exists and is governed by laws (Jansen, 2020). The positivist paradigm carries certain assumptions about reality and knowledge. Positivists believe that reality and the laws that govern it are discoverable to humans (Jansen, 2020). Positivism's ontological assumption is that the world exists outside of the individual and thus exists an objective reality which can be measured and observed through individuals' senses, experiences, and/or experiments (Maree, 2020). Positivism's epistemological assumptions view knowledge as something real, truthful, and objective, as well as quantifiable (Maree, 2020).

Positivism is known as a research paradigm commonly used in a tertiary education context (Taylor & Medina, 2011). Positivism aims to identify cause-and-effect relationships and attempt to determine future behaviour based off an individual's current behaviour (Plack, 2005). This study aims to determine how internet access within the household impacts students' levels of academic procrastination, which involves the educational setting, a relationship, and the attempt at understanding human behaviour and predicting future behaviour. Thus, the researcher deemed this paradigm to be more fitting for the research study's aim.

3.2. Research approach and design

This section will outline the design of the study. The study will be quantitative in nature and make use of a positivist paradigm. A quantitative approach will be used as the researcher views both variables, internet access within the household and academic procrastination, being studied as quantifiable amounts. The research will take an exploratory approach to the topic, to gather more information about the relationship between academic procrastination and internet access within South Africa. An inductive approach will be taken, where specific circumstances are generalised to the population (Soiferman, 2010). This approach will be used due to the lack of literature on the topic

and within the South African context. The data will be collected through a survey, sent to South African tertiary education students through convenience sampling. Due to time constraints centered around the data collection and research study needing to be completed in under a few months, the research will be cross-sectional in nature meaning the research study will gather data in an once-off time period (Spector, 2019).

3.3. Population

In order to start collecting data, the researcher must first identify and define their research population.

3.3.1. Population

A research population is defined by Maree and Pietersen (2020) as a group of people who meet the research criteria.

3.3.2. Unit of Analysis

The research will make use of individuals as its unit of analysis.

3.3.3. Target Population and Accessible Population

In this research, the research population or target population is characterised as individuals who are studying at a tertiary institution and who have internet access within their household. An accessible population is defined as an available portion of the target population (Christensen, Johnson, & Turner, 2015). In this research, the accessible population is limited to South African tertiary education students who have internet access within their household.

3.3.4. Population Parameters

The characteristics of a tertiary education student and having internet access within their household are identified as parameters of the research population.

3.4. Sampling

Out of the individuals who meet these criteria, the researcher must identify and acquire a sample that will take part in the research.

3.4.1. Non-probability sampling

Sampling is defined as a random and numerically defined subsection of the target population (Maree & Pietersen, 2020). In this research, the researcher does not have access to the sample frame and therefore cannot utilise probability sampling, and therefore non-probability sampling will be used.

Non-probability sampling is defined by Etikan, Musa, and Alkassim (2016) as a form of sampling where individuals in the population do not have an equal chance of being selected into the sample. Non-probability sampling is advantageous to the researcher as the sampling method is known to be cheaper as well as quicker to implement than its counterpart (Etikan et al., 2016). The researcher has limited time and resources to complete this research, which exists as a barrier to probability sampling. Another issue is that due to the Coronavirus pandemic, which has resulted in governmental regulations being put in place that banned or limit social interactions and social spaces thus limiting the researcher's accessibility to possible participants, other non-probability methods become difficult to complete in the time period given and with limited accessibility to the target population. Due to participant selection being non-random, the research's external validity will be compromised through sample bias. Sample bias limits that ability of the researcher to generalize the results to the target population. This is, inherently, a limitation of the research being conducted. The researcher, however, has a notably unique social network which includes individuals from tertiary institutions across South Africa. These individuals will be chosen as the 'starting' participants, who will go onto share the survey amongst their lecture groups. The variation of institutions and degrees as well as the differentiation in individual characteristics within a lecture group will assist in curbing the chances of sample bias. The researcher does not have control of who chooses to participate and, therefore biases may still be found.

3.4.2. Sampling method

The researcher will use virtual snowball sampling to circulate the survey to possible participants. Snowball sampling is defined as a technique that identifies possible participants through referral from other participants (Vogt, 2005). Snowball sampling allows the researcher to save time and resources when finding participants (Etikan, Alkassim & Abubakar, 2015). This is because the 'starting' individuals are chosen through convenient sampling (Etikan et al., 2015). The greatest shortcoming of snowball sampling is non-random selection of participants through social networks (Browne, 2005). This method creates a sample bias as social networks generally consist of individuals with similar characteristics (Etikan et al., 2015). This in turn, decreases external validity. Snowball sampling was selected by the researcher, due to the ability of the sample type to save time and money, while also ensuring the population parameters are upheld.

Virtual snowball sampling transfers the snowball sampling method onto technological platforms so no in-person contact is needed. This virtual sampling method will be used due to government regulations put in place to curb the Coronavirus pandemic within South Africa. These regulations limit the researcher's accessibility to universities and to participants in person. The uniqueness of the environment also creates a barrier to recruit participants to take part in the survey, when participation involves interacting with a stranger and physically filling in a survey where both actions may result in the individual being infected with Coronavirus. The virtual nature of the survey allows for these barriers to be overcome. The virtual setting also allows the researcher greater access to the target population, specifically individuals studying at different tertiary institutions in other provinces within South Africa. The online nature of the sample method also allows for a better response rate than other sample methods (Baltar & Brunet, 2012).

3.4.3. Sample size

Due to limited resources and time constraints, which can negatively affect evaluations, data analyses, and the collection of a larger sample size, the number of participants will be limited to thirty individuals. Thirty participants allow for a more digestible amount of data to be organised and analysed by the sole researcher within the time limit presented

by the completion of the research study. The limited sample size exists as a limitation in the research as it has a negative effect on external validity. This is because a smaller sample size prevents the research data from reaching data saturation.

3.5. Data collection

Data will be collected through an online survey sent to participants who were accumulated through virtual snowball sampling. The survey aims to collect data on academic procrastination, internet access within the household, and how internet access within the household affects students' levels of academic procrastination. This data will go toward answering the research question, how does internet access within the household impact students' levels of academic procrastination, and the research sub-questions: "What site or application do students use the most when academically procrastinating?", "Do South African university students use the internet as a tool of procrastination?", and lastly, "How much time, on average, do South African students spend on the internet per day?".

The usage of online surveys within this research study holds certain advantages (Rice, Winter, Doherty, & Milner, 2017). Although Rice et al. (2017) research specifically relates to the aviation industry, the information provided on online surveys is still applicable. Rice et al. (2017) listed online survey advantages such as easier access to the research population, lower costs associated with the research process, more timely data collection, reliable data collected, and the allowance of anonymity (Rice et al., 2017). Easier access to the research population will be discussed below with regards to the choice of the internet as the survey platform. There is no access to funding for this research study, thus the researcher preferred a method that require no monetary investment. The availability of time within this research study is limited as the study needs to be completed within a year, thus the benefit of more timely data collection by using an online survey matched this need. According to Rice et al. (2017), data gathered from in-person research and data gathered from online surveys did not differ. This allows for the researcher to choose to gather data through an online survey without compromising the reliability of the data (Rice et al., 2017). As academic procrastination is a behaviour associated with negative connotations and emotions, the researcher preferred the usage of anonymous data

gathering as it would allow for more reliable and truthful responses to the survey questions. By using an online survey, the researcher is capable of gathering the data without the identities of the participants being revealed to them (Rice et al., 2017).

Although online surveys hold the greater benefit to this research study, there are still drawbacks of using this method (Rice et al., 2017). Rice et al. (2017) identify disadvantages such as non-representative samples, low response rates, limited length of study, the lack of behavioural data, and lack of follow-up data. Rice et al. (2017) state that the sample becomes non-representative when a certain cutoff number of participants exist. Due to time constraints, this research study cutoff availability to the online survey once the required sample size was met. Lower response rates are often a result of individuals willing to participate, but who drop the study after reading the instructions or completing only a portion of the online survey (Rice et al., 2017). Online surveys possess a limit to the amount of questions and time an individual needs to complete the survey, unlike in-person data collection, individuals online are less likely to participate if the data collection takes up a large portion of time, thus limiting the length of online surveys to promote higher response rates (Rice et al., 2017). Another limitation of an online survey is that the researcher is not aware of the participant's understanding or behaviour when completing the survey (Rice et al., 2017).

The survey will have an introduction to explain the purpose of the research to participants and to inform the participants that the data collected will be anonymous and confidential. Due to the online nature of the survey, the researcher will ensure that a trusted site with a reasonable security system will be used as a survey platform to ensure the security of the participants and their data. After this, instructions on how to proceed in the completion of the survey will be stated. As the research is quantitative, the survey will consist of majority closed-ended questions. Two open-ended questions will be included; however these questions are non-compulsory to fill out and exist as a supplementary information for the preceding question which aims to answer one of the sub-questions. There are eighteen questions in total and the survey should only take ten minutes to complete. This survey will all be laid out and asked in a format that ensures ethical rigor and avoids the usage of manipulation or bias. The format will also be easy to navigate for participants.

The survey will be online as the Coronavirus pandemic within South Africa has created physical boundaries between the researcher and the participants leaving a physical survey option inaccessible. These boundaries include lockdown regulations countrywide and university regulations, which prohibit university students from attending university unless the students cannot access online classes within their household. The target population of the research is university students with internet access within the household, who are therefore not on campus.

Another barrier is that the virus can spread through social interactions as well as on surfaces, thus making individuals more reluctant to interact with strangers or participate in a physical survey. Making the survey online, allows for 'safe' interactions where the researcher and the participants are not at risk of infection.

The online nature also holds other benefits such as being cost-effective due to the absence of travel costs and limited resources needed. Online data collection also assists in data capturing and removes any error that may result from human collection. This increases the reliability of the research.

3.6. Data collection application

The final survey was created using Google Forms as a platform to gather research data. This platform is user friendly for the development of the survey, freely available, and allows for over ten questions, unlike SurveyMonkey which had also been considered. Google Forms also allowed for different responses for different types of questions asked in the survey.

The platform was tested prior to the final data collection, where the final draft survey was set-up using Google Forms and test-participants were identified to assist in the pilot test to ensure the platform was user-friendly to participants. This pilot test also existed to ensure the questions were clear to future participants and to receive any feedback on where the survey could be improved. This also assisted in countering low response rates and dropping out rates resulting from long surveys or difficult questions. After further improvements, the survey was finalized.

A message was developed to invite individuals to partake in the survey as well as the relevant information about the research with the link to the survey attached. This message worked as the basis for gaining participants through the Whatsapp group chats.

Two individuals, who are students who are studying at a tertiary institution and who had internet access within their household, were identified by the researcher and asked for assistance in the research. These individuals were to complete the survey and share the survey with a 'lecture' group chat over Whatsapp, a messaging platform. A lecture group chat was identified as a form of communication chatroom to share information that specifically relates to academic classes the group of individuals is taking together. The identified individuals agreed to the request and the survey was sent out on Friday, 14 August 2020. The researcher monitored the responses through the Google Forms' platform over the weekend. By the end of the weekend, the responses had not reached the milestone of thirty participants. The poor response rate was not predicted by the researcher, thus the researcher aimed to send out the survey through more individuals who they were in contact with in order to meet the goal for the number of research participants.

Three more individuals were identified and asked to assist in the survey as well as share the survey amongst their lecture Whatsapp group chats. On Wednesday, 19 August 2020, the survey response rate was at the goal of thirty research participants. The survey link was then closed.

One of the identified limitations of an online survey included the misunderstanding of questions by the participants, although the researcher actively attempted to counter this limitation a total of 3 respondents incorrectly answered one or two of the questions, specifically the open-ended questions presented.

3.7. Data analysis

Data will be analysed in an attempt to answer whether internet access impacts students' levels of academic procrastination. Other sub-questions that the data analysis will attempt to answer is whether South African students use the internet as a tool of academic

procrastination, what is the most used site or application used by students when academically procrastinating, and on average, how much time do South African tertiary education students spend on the internet per day. The survey mainly consists of closed-ended, multiple-choice questions. To analyse the data, the researcher will use descriptive statistics.

Descriptive statistics are used to simplify large amounts of data into manageable and understandable summaries of the data (Pietersen & Maree, 2020). This exists as a advantage of descriptive statistics. The description of the data in quantitative research makes use of central tendency, variation, and shape (Pietersen & Maree, 2020). The data analysis, this research will employ includes the central tendency. Central tendency includes the data's mean, mode, and median (Pietersen & Maree, 2020). A mean refers to the calculated average of the total values (Pietersen & Maree, 2020). A mean will be calculated for all questions where the questions delegate numerical responses, specifically in relation to hour-related questions that will assist in answering the research question and the sub-question of, "On average, how much time do South African tertiary education students spent on the internet per day?". The mode is defined as the most common value in the data (Pietersen & Maree, 2020). The mode for each question will be noted as it will serve as the basis for understanding the large majority of the questions within the survey specifically in relation to the sub-questions relating to the usage of the internet as a tool of academic procrastination and in determining the most used site or application when academically procrastinating. The median is defined as the middle value of all the responses (Pietersen & Maree, 2020). This statistic will not be calculated as it is not relevant to this research.

A disadvantage of using descriptive statistics is that other information relating to the data may get overlooked such as one individual being an outlier that may skew the data drastically (Pietersen & Maree, 2020).

The most common responses will be noted for each question in the survey. If there are more than two possible answers for the participant to select, the order of most frequent to less frequent given response will be noted.

Each question with its group of responses will be analysed individually and then viewed in relation to the entire survey. Other trends in the answers of specific individuals that also apply to the group as a whole will be analysed.

The data will be analysed in relation to the sub-questions. Lastly, the data will be analysed with the main research question in mind: “How does access to the internet within the household affect the amount of time a student participates in academic procrastination?”.

3.8. Data analysis application

With assistance of the survey platform, the data has been analysed. For the closed-ended questions, Google Forms assisted in data analysis by tallying and creating percentages for the responses for each question in a pie graph format or bar graph format. This assisted in giving an overview of the results to each question, specifically in determining the most common and least common responses. For the two open-ended questions, Google Forms just listed the responses.

The Google Forms platform also stores all responses from the participants and groups a single participant's responses together, which can be downloaded as a Excel spread sheet which assists in organising the data collected to contribute to further data analysis by the researcher and cuts out physical data capturing done by the researcher, which may result in human error. One limitation of using Google Forms is that participants needed to have a Google account in order to complete the online survey.

Each question and its responses were analysed and the frequency of each reply was noted, although Google Forms did provide an overview of this, in a percentage, the researcher wanted to make note of the specific number that contributed to the development of the percentages. This is because in smaller samples, like in this research, percentages can be misleading.

Two questions focusing on ‘the most used site or application’ for a specific behavior were identified as problematic as one participant responded with the ‘Other’ category and when asked in the next question, “If ‘other’ please specify:” the participant specified that the site was Youtube. Youtube is classified as a social media site (Khan, 2017). As such this

response had to be added to the previous question response choice as 'Social Media'. Thus, the Google Forms analysis could not be used by the researcher in these two questions and instead had to adjust the responses manually.

The analysis of patterns and trends in the data were determined through the organising of data and survey responses of all thirty participants into an excel spreadsheet, where each question and each answer group were broken down. An example of this, using Question 10, is where participants were grouped depending whether they answered 'Yes' or 'No' to the question. The researcher then analysed if participants who responded with 'Yes' had a general tendency to answer other questions with one or two specific answers and then separately do the same for participants who answered "No".

The patterns and trends were then observed by the researcher by studying the data and making notes. Overall patterns and trends were made easier to identify as responses were coded by highlighting certain responses in a specific color.

4. Findings and Interpretation of Findings

In this section, the research findings will be laid out and discussed in relation to the research question as well as the sub-questions. It was found that more data needed to be gathered to present a clearer picture of how internet access within the household impacts levels of academic procrastination that students in tertiary education institutes participated in. One finding did reveal that academic procrastination and internet-related procrastination had a strong relationship with distractibility in students. Other findings include that 80% of respondents spent 6 hours or more on the internet daily, the usage of internet as a tool of procrastination, as well as the identification of social media as the most used application when academically procrastinating. Each of these findings will be broken down further in this section. Percentages will be used, however it should be noted that the usage of percentages for the sample size of 30, may distort the results and thus where necessary the number of participants will also be included.

4.1. Research question: How does internet access within the household affect students' levels of academic procrastination?

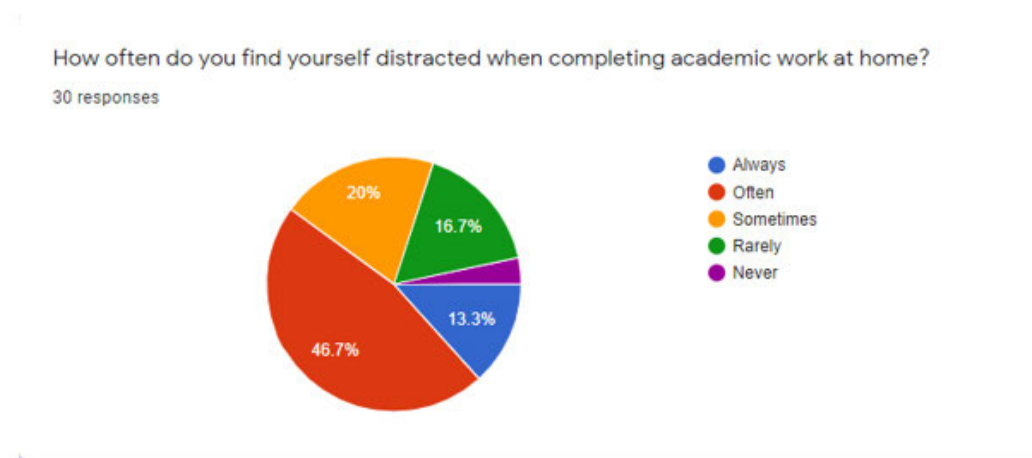


Figure 5: Distractibility when completing academic work

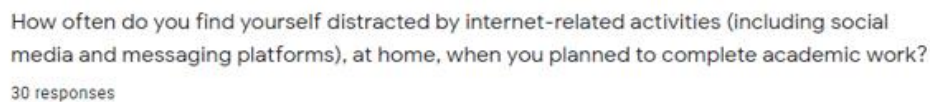


Figure 7: Internet-related activities instead of completing academic work

46.7% of respondents stated that they 'often' found themselves distracted when completing academic work at home followed by 'Sometimes', 'Rarely', 'Always', and 'Never' (Figure 5). Later when asked how often they are distracted by internet-related activities a similar trend was identified with 'Often' being the highest response followed by 'Sometimes', 'Rarely', 'Always', and 'Never' (Figure 7). 19 of 30 responses totaled excessive online academic procrastination. Excessive, in this research, includes both 'Always' and 'Often' responses. This totals 63.3% of the sample, which is greater than

Lavoie and Pychyl's (2001) findings of 50.7% of participants engaging in frequent internet procrastination.

Notable patterns from these two figures revealed that all students stated that they procrastinate to some amount. This is aligned with Steel's idea that the large majority of tertiary education students academically procrastinate and his belief that distractibility is higher in individuals who procrastinate. This also mirrors Zimmerman's (2000) Self-regulated Learning: The Cyclical Phases Model, where procrastination is a result of a failure in the performance phase of completing a task. It also allows the researcher to determine that the internet can serve as a distraction which matches Thatcher's et al. (2008) research. This pattern also revealed that the majority of students (18 of 30) tended to partake in excessive academic procrastination.

However, due to the small sample size, the actual difference between students who excessively academically procrastinate and those who 'Sometimes' or mildly procrastinate (mild procrastination refers to the total of 'Rarely' and 'Never' responses) is small.

How often do you find yourself completing other unrelated tasks over academic work, when at home?

30 responses

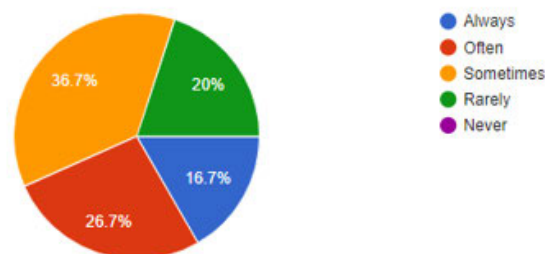


Figure 6: Unrelated tasks instead of completing academic work

How often do you delay academic work at home until you are in a better mood or have more energy to complete it?

30 responses

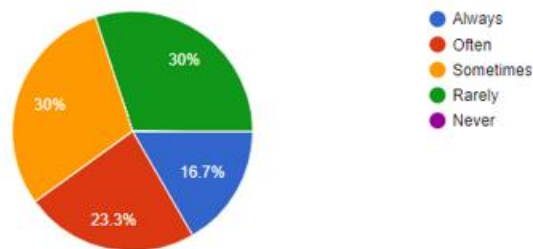


Figure 8: Delayed academic work to counter negative mood (Zimmerman's mood management theory)

When working online at home, how often do you find yourself going to unrelated sites or applications?

30 responses

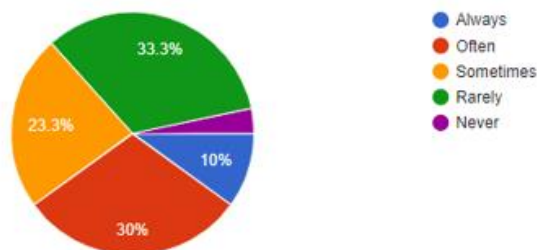


Figure 13: Unrelated sites or applications instead of completing academic work online

Another note to make is that the pattern of excessive academic procrastination as the majority of the sample does not carry across all the academic procrastination-based questions. In figures 6, 8, and 13, the majority of responses were in the combination of the 'Sometimes', 'Rarely', and 'Never' categories.

Do you feel that the statement, "I work better last minute", applies to you?

30 responses

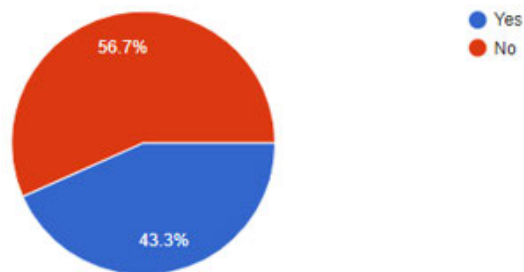


Figure 10: I work better last minute

How often do you use the internet to assist in completing academic work when at home?

30 responses

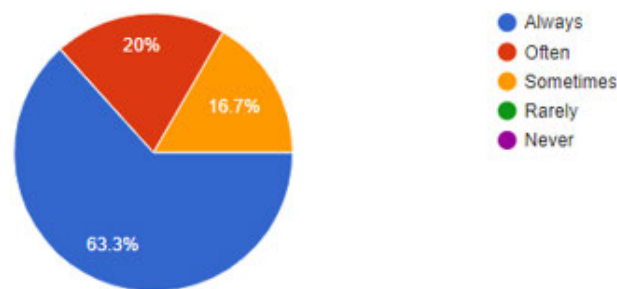


Figure 12: Use of the internet to assist in the completion of academic work

Other indicators that suggest that excessive academic procrastination makes up close to half of the sample is that 13 respondents stated that they work better last minute (Figure 10) which is classified as a 'procrastinator's belief' which does not mirror reality. It also follows the idea, from Zimmerman's (2000) Self-regulated Learning: the Cyclical Phases Model's self-reflection phase, that individuals will not change their behaviour as they 'judge' the results of the behaviour incorrectly. This also follows along the pattern in the research that revealed that individuals who answered 'Always' to being distracted when completing academic work, answered yes to working better last minute. These individuals also answered 'Always' to using the internet for their academic work (Figure 12).

How often do you find yourself still working on an assignment or other academic work the day before it is due?

30 responses

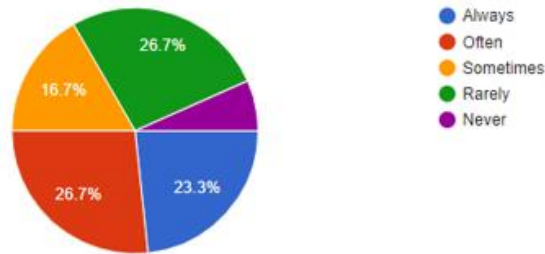


Figure 9: Working the day before the due date

15 respondents stated that they 'Always' and 'Often' find themselves working the day before the assignment is due (Figure 9), which may indicate poor planning or time management. Poor planning and/or time management are traits more often found in procrastinating individuals as found in the literature review.

Academic procrastination was often associated in the literature review with individual handing in assignments late. This falls in line with poor time management and lack of planning traits also associated with academic procrastination. Although individuals were still working on an assignment the day before, 19 respondents stated that they 'Never' handed in work late, while only 3 respondents stated that they 'Often' handed in work late.

On average, how much time per day do you believe you spend procrastinating academic work at home?

30 responses

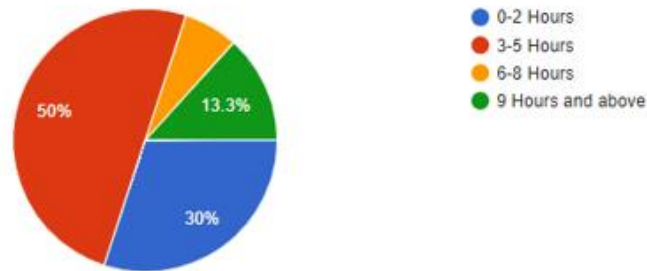


Figure 14: Time spent academically procrastinating

Of the time you procrastinate academic work, how much time do you spend on the internet?

30 responses

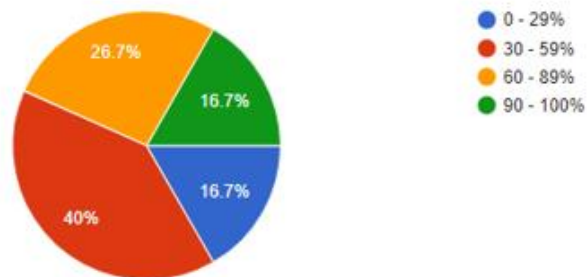


Figure 16: Time spent on internet when academically procrastinating

When asked how much time respondents believed they spend procrastinating academic work, 80% stated they spent five or less hours academically procrastinating (Figure 14). Of this time academically procrastinating, the majority of the respondents stated they spent 30 to 59 percent of this time on the internet (Figure 16). Although noted later by the researcher, the options available for this question should have been improved upon through changing the options to have smaller gaps between each option or have been replaced by an open-ended question. This overlooked detail can be seen as a limitation in the research. However, it does show us that internet procrastination, as a percentage of academic procrastination, is not prominent.

Another interesting finding included that the assumption that individuals would make use of the internet to counter their negative mood that resulted from their academic work was disproved. Individuals' answers on Zimmerman's mood management theory question (Figure 8) revealed 'Sometimes' and 'Rarely' as the majority with 9 participants selecting each option. This suggests that individuals are not likely to academically procrastinate to manage their mood (Reinecke, et al., 2018).

Although distractibility was strongly associated with academic procrastination and internet-based academic procrastination, the rest of the data gathered does not follow this strong association. However, as the data is self-reported, this difference, in some form, could be the result of individual bias. Academic procrastination has generally negative associations, thus the individual may underrepresent the amount of time they spend on the internet or academically procrastinating to counter negative feelings resulting from academically procrastinating. This may, however, be seen as a stretch. Although the research has provided more data on the subject, specifically in the South African context, the research results do not bring forward a definitive conclusion to the research question. More information will need to be gathered through a larger sample size as well as an inclusion of a control group to allow for comparison.

4.2. Sub-question: How much time, on average, do South African students spend on the internet per day, at home?

On average, how much time per day do you spend on the internet (including social media and messaging platforms), at home?

30 responses

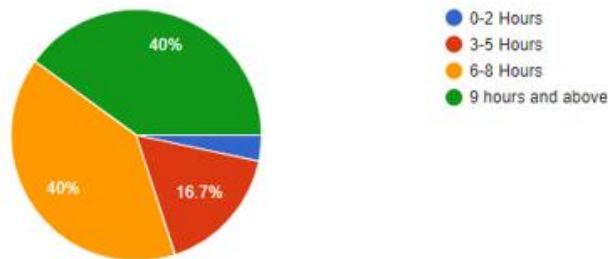


Figure 2: Time spent on the Internet

How often do you use the internet to assist in completing academic work when at home?

30 responses

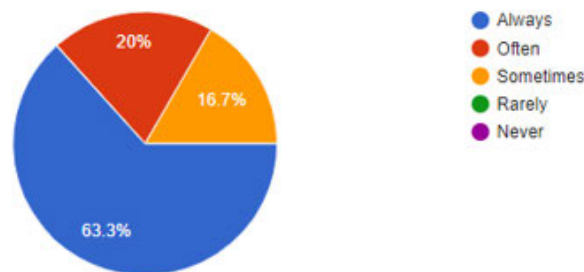


Figure 12: Use of the internet to assist in the completion of academic work

With the increased time spent within the household due to Coronavirus lockdown and the general trend of individuals growing use of the internet in daily activities, it is no surprise that the amount of time spent on the internet for the majority of individuals were in the upper number of hours spent (Figure 2). This internet usage includes using the internet as a means to complete academic work with 63.3% of respondents (Figure 12) selecting that they 'Always' use the internet to assist in completing academic work. No one selected 'Rarely' or 'Never' when using the internet to complete academic work.

4.3. Sub-question: Do South African university students use the internet as a tool of procrastination?

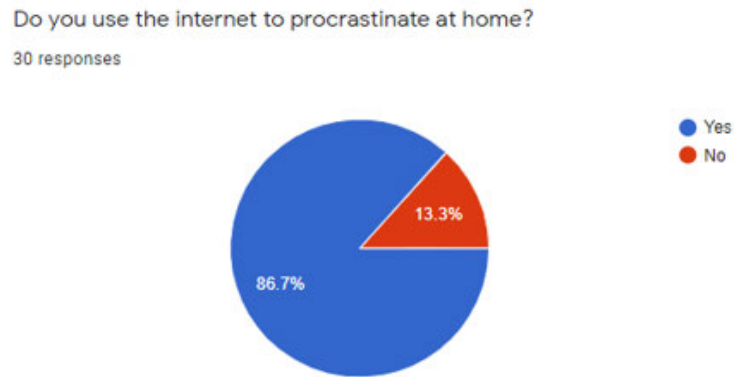
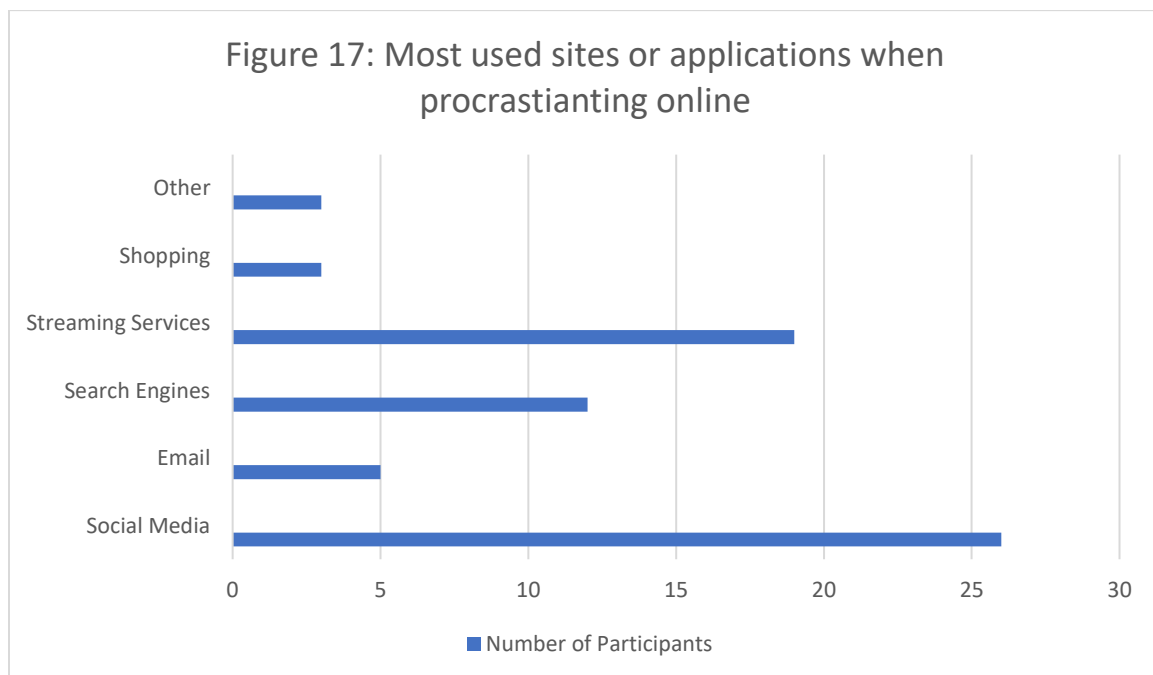
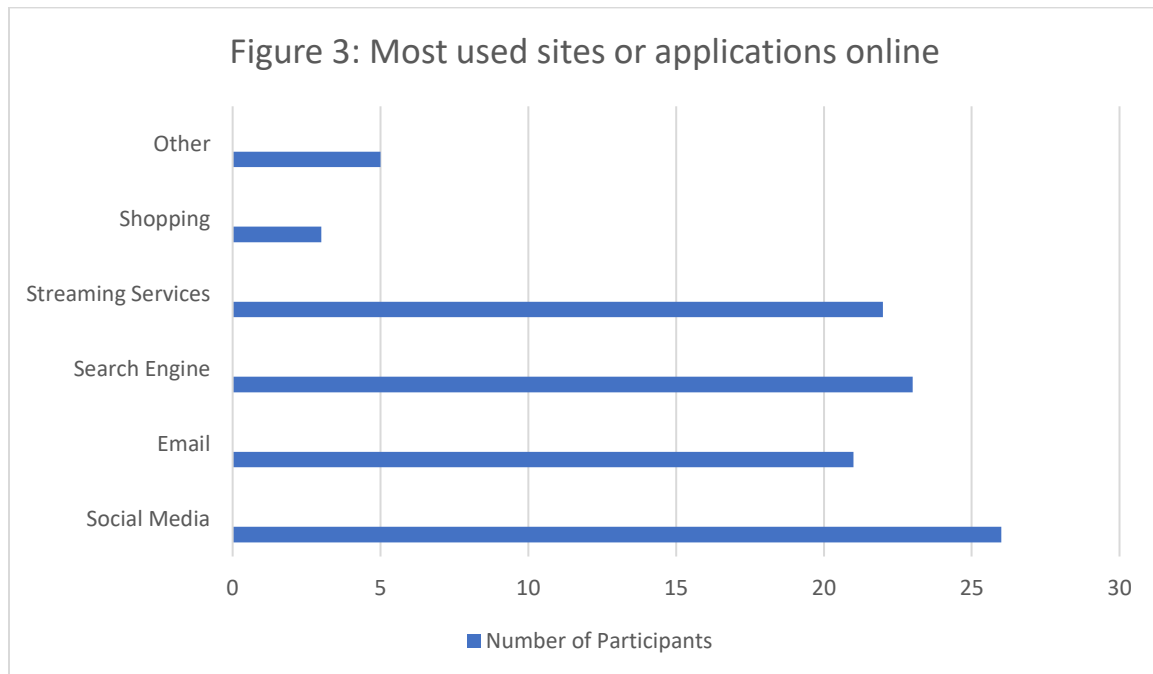


Figure 15: Internet as a tool of procrastination

According to Lavoie and Pychyl (2001), students use the internet as a tool of procrastination. This is substantiated within this research as the majority of respondents stated that they made use of the internet as a tool of procrastination (Figure 15).

4.4. Sub-question: What site or application do students use the most when academically procrastinating?



Social media was found to be the most used application when online with 83.3% of respondents selecting it (Figure 3). Social media was also found to be the most used application when a student procrastinates online with 83.3% of respondents selecting it

(Figure 17). It should be noted that two respondents made errors when answering. One misclassified YouTube as 'Other' under figure 3 and 17 when it is classified as 'Social Media' and the other respondent misunderstood figure 17 as they answered, "Spending time in the garden", the researcher adjusted the graph to reflect these errors by moving one participant's Other (Youtube) under Social Media and by removing the participant's Other (Spending time in the garden) as it did not relate to any other option or the question in general. However, even when these errors were considered, social media would have still been the respondents' majority choice in each question. The majority of individuals who selected social media in question 3, also selected social media in question 17. Social media matches the main characteristics of procrastination with distractibility through its easy accessibility as well as its continuous availability of new information. The majority of participants selected multiple options suggesting other internet activities could also hold importance. This research did not question which application of the multiple selection the participant spent the most time on and did not include more specific sites and applications. This, therefore, exists as a limitation in the research and can provide a basis for further research into the subject.

4.5. Other findings of interest

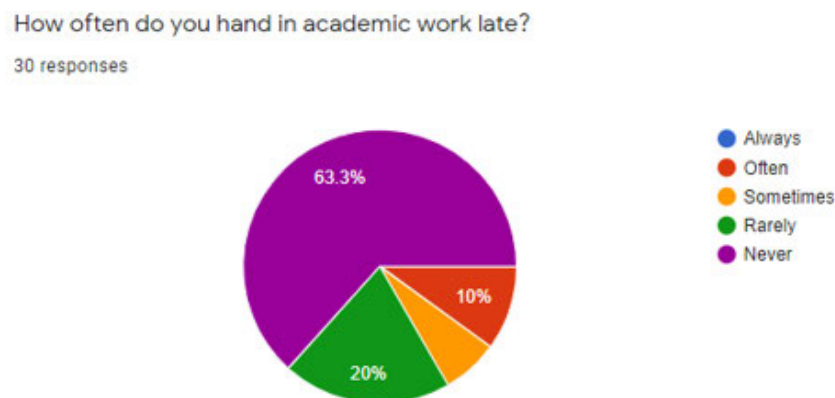


Figure 11: Late academic work

Individuals who answered 'Rarely' for being distracted by internet-related activities (Figure 7), also answered 'Rarely' for distracted in a more general sense (Figure 5), in completion of unrelated tasks over academic work (Figure 6), and on how often they access unrelated sites or applications once online (Figure 13) as well as 'Never' for handing in academic work late (Figure 11). Lack of participation in these behaviours follows the negative correlation between academic procrastination and conscientiousness identified in the literature review.

4.6. Conclusion

Although the data did not reveal a definitive answer to the research question of how internet access within the household impacts students' levels of academic procrastination, notable findings were still gathered which can contribute to further research into the subject. These findings include the relationship between excessive academic procrastination and distractibility, the use of internet as a tool of academic procrastination, that respondents spent roughly 6 hours or more on the internet each day, and lastly, that the majority of the time spent online, both academically procrastinating or not, was spent on social media.

4.7. Validity and Reliability

Due to time constraints, the survey could not be tested thoroughly, regarding its validity and reliability. These limitations are discussed alongside attempts by the researcher to minimise the effect of these limitations.

4.7.1. Validity

Validity is defined, by Maree and Pietersen (2020), as the ability of a measure to accurately measure what it aims to measure. The survey is being developed by the researcher, which automatically means that the validity to the findings may decrease as it has not been tested and verified by a third party. Thus, any mistakes or weaknesses that have been overlooked by the researcher may affect the results. To counter this the

researcher will take steps to verify questions and to explore other surveys on procrastination and internet access in order to gain deeper insight into the line of questioning generally used. The researcher will also seek advice and knowledge from more experienced researchers.

Internal validity refers to the ability of the researcher to control confounding variables in order to determine that the independent variable is the causal factor of a change in the dependent variable (Maree & Pietersen, 2020). As the data collection was survey-based, the researcher could not directly control possible confounding variables. Thus, the researcher included questions on these variables that may impact the results of the study.

External validity is defined by Maree and Pietersen (2020) as the degree to which the results of the study can be generalised to the rest of the population. A limitation that may affect the external validity is the choice of convenience sampling. Convenience sampling cannot ensure that the sample is representative of the population and thus the generalisability of the results will be limited. This choice in sampling, also, creates the possibility of sampling bias which states that the sample results may differ from the results of the population as a whole (Etikan et al., 2015). The researcher planned to overcome this limitation by diversifying the identified 'snowball' individuals that will be distributing the survey to fellow students.

4.7.2. Reliability

Reliability is defined as the ability of a measure to consistently and continuously measure the desired variable with little to no variation (Maree & Pietersen, 2020). Due to time constraints, the survey cannot be tested thoroughly, regarding its reliability, through test and retest methods. This exists as a limitation.

The researcher took specific steps to maintain ethical conduct when analysing and reporting the results of the survey along with being open about any limitations that appeared.

5. Conclusion

5.1. Summary of the findings as they relate to the research question

Data gathered on the impact of internet access within the household on students' levels of academic procrastination revealed the need for more research to be completed on the subject, however it did reveal a link between excessive academic procrastination and an individual's distractibility as well as presented answers to the research sub-questions.

5.2. Implications of Findings

By gathering information and data on this topic, allows for future researchers to build off the findings of this study. This, specifically, holds true in the South African context where internet access and its relationship with academic procrastination exists as a gap in the literature. The results of the study can also be used to assist students in strategising their academic work in order to maximise time while minimising online academic procrastination.

5.3. Ethical considerations

When conducting research, it is important to consider the ethical requirements that need to be upheld to ensure the safety of the participants and the credibility of the findings. Ethics refers to standards of 'right' or 'correct' behaviour (Ethics, 2007). In research, this would involve actions like gaining informed consent from research participants, ensuring, and maintaining confidentiality of participants, as well as avoiding the potential harming of participants, whilst taking part in the study.

The researcher will ensure that the participants' identities remain anonymous and therefore, the participant's choice to participate in the research study will be taken as a form of consent. Informed consent is ensured by allowing the individual to freely choose to participate in the research study with information on the research study provided both in the message sent to possible participants as well as in the introduction section of the online survey.

Due to the nature of the research study and the topic which it aims to answer, academic procrastination and internet access, is unlikely to cause harm, however procrastination is viewed by society as a negative behaviour due to its consequences and its lack of forethought, and is known to cause negative emotions in individuals who participate in the behaviour (Reinecke, et al., 2018). Therefore, the survey will phrase the questions in a way that mitigates the participants from experiencing any negative emotions in response to academic procrastination.

Due to the technological basis of the research, the researcher should have preventative measures in place to prevent confidential information gathered during the data collection process from being leaked to third parties. The sharing of information will be limited, and caution will be taken to uphold as much privacy for the participants, as possible, through methods such as the usage of anonymity. The information and data gathered during the research study will only be shared across protected platforms, Whatsapp and Google Forms. The researcher's data will be protected in a passworded locked folder on a laptop to which only the research can access.

The researcher needs to ensure their research remains unbiased and fair to all stakeholders. The researcher also needs to be ethical when they report their results to the public and avoid altering any results. To promote this the researcher will be transparent with methods of interpreting the data gathered as well as any notable flaws in the study. To conduct research in South Africa, one must gain approval from the relevant bodies to conduct the research study, in this case, the Ethics Committee.

5.4. Limitations of the study

A notable limitation of this study is the small sample size which decreases the external validity. Although the researcher aimed to use a diverse sample, it does not guarantee that the sample is representative of the entire student population, thus again decreasing the external validity. The time limit of the research creates barriers regarding the extent to which the researcher can delve in-depth into the topic. Lastly, due to the onset of Coronavirus lockdowns, within South Africa, the researcher had to be flexible in order to

adjust to any new or changing regulations. The usage of snowball sampling creates a respondent bias. As the online survey is a self-report survey, participants may inaccurately report their behaviours whether purposefully or unconsciously, which also serves as a limitation in this study.

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7. Annexure A – Survey

8/21/2020

Exploring the impact of internet access within the household on students' levels of academic procrastination

Exploring the impact of internet access within the household on students' levels of academic procrastination

* Required

Introduction

Thank you for taking the time to complete this survey. Before proceeding please read the following:

This survey aims to explore the impact of internet access, within the household setting, on students' levels of academic procrastination. Participants should have access to the internet within their household and be a student at a tertiary institution. Please note that this survey is anonymous and that any information will remain confidential and will only be shared with my research supervisor. I would also like to remind you that you do not have to answer any questions that may cause discomfort. This survey consists of 18 questions. It should take roughly 6 minutes of your time to complete.

Instructions

Please answer the questions below by selecting the response that applies best to you.

1. Do you have internet access in your household? *

Mark only one oval.

- ☐ Yes
☐ No

2. On average, how much time per day do you spend on the internet (including social media and messaging platforms), at home? *

Mark only one oval.

- ☐ 0-2 Hours
☐ 3-5 Hours
☐ 6-8 Hours
☐ 9 hours and above

3. When you are online, which sites or applications do you access the most? (Multiple options can be selected for this question) *

Check all that apply.

- ☐ Social Media
- ☐ Email
- ☐ Search Engine
- ☐ Streaming Services
- ☐ Shopping
- ☐ Other

4. If 'Other' please specify:

5. How often do you find yourself distracted when completing academic work at home? *

Mark only one oval.

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

6. How often do you find yourself completing other unrelated tasks over academic work, when at home? *

Mark only one oval.

- ☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

7. How often do you find yourself distracted by internet-related activities (including social media and messaging platforms), at home, when you planned to complete academic work? *

Mark only one oval.

- ☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

8. How often do you delay academic work at home until you are in a better mood or have more energy to complete it? *

Mark only one oval.

- ☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

9. How often do you find yourself still working on an assignment or other academic work the day before it is due? *

Mark only one oval.

- ☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

10. Do you feel that the statement, "I work better last minute", applies to you? *

Mark only one oval.

- ☐ Yes
☐ No

11. How often do you hand in academic work late? *

Mark only one oval.

- ☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

12. How often do you use the internet to assist in completing academic work when at home? *

Mark only one oval.

- ☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

13. When working online at home, how often do you find yourself going to unrelated sites or applications? *

Mark only one oval.

- ☐ Always
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

14. On average, how much time per day do you believe you spend procrastinating academic work at home? *

Mark only one oval.

- ☐ 0-2 Hours
☐ 3-5 Hours
☐ 6-8 Hours
☐ 9 Hours and above

15. Do you use the internet to procrastinate at home? *

Mark only one oval.

- ☐ Yes
☐ No

16. Of the time you procrastinate academic work, how much time do you spend on the internet? *

Mark only one oval.

- ☐ 0 - 29%
☐ 30 - 59%
☐ 60 - 89%
☐ 90 - 100%

17. Which sites or applications do you use the most when you procrastinate online at home? (Multiple options can be selected for this question) *

Check all that apply:

- ☐ Social Media
☐ Email
☐ Search Engines
☐ Streaming Services
☐ Shopping
☐ Other

18. If 'Other' please specify:

This content is neither created nor endorsed by Google.

8/31/2020

Exploring the impact of internet access within the household on students' levels of academic procrastination

Google Forms

<https://docs.google.com/forms/d/1WVtd8w4LzVuD-XPhVgts7BkxtenVGLJ0teDQugELmA/edit>

7/7

8. Annexure B – Ethical clearance





9. Annexure C – Examples of completed surveys

9.1. Example 1: Completed Survey

Responses cannot be edited

Exploring the impact of internet access within the household on students' levels of academic procrastination

* Required

Introduction

Thank you for taking the time to complete this survey. Before proceeding please read the following:

This survey aims to explore the impact of internet access, within the household setting, on students' levels of academic procrastination. Participants should have access to the internet within their household and be a student at a tertiary institution. Please note that this survey is anonymous and that any information will remain confidential and will only be shared with my research supervisor. I would also like to remind you that you do not have to answer any questions that may cause discomfort. This survey consists of 18 questions. It should take roughly 6 minutes of your time to complete.

Instructions

Please answer the questions below by selecting the response that applies best to you.

Do you have internet access in your household? *

☒ Yes

☐ No

On average, how much time per day do you spend on the internet (including social media and messaging platforms), at home? *

- ☐ 0-2 Hours
- ☒ 3-5 Hours
- ☐ 6-8 Hours
- ☐ 9 hours and above

When you are online, which sites or applications do you access the most? (Multiple options can be selected for this question) *

- ☒ Social Media
- ☒ Email
- ☐ Search Engine
- ☒ Streaming Services
- ☒ Shopping
- ☐ Other

If 'Other' please specify:

.....

How often do you find yourself distracted when completing academic work at home? *

- ☐ Always
- ☐ Often
- ☒ Sometimes
- ☐ Rarely
- ☐ Never

How often do you find yourself completing other unrelated tasks over academic work, when at home? *

- ☐ Always
- ☒ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

How often do you find yourself distracted by internet-related activities (including social media and messaging platforms), at home, when you planned to complete academic work? *

- ☐ Always
- ☐ Often
- ☒ Sometimes
- ☐ Rarely
- ☐ Never

How often do you delay academic work at home until you are in a better mood or have more energy to complete it? *

- ☐ Always
- ☐ Often
- ☒ Sometimes
- ☐ Rarely
- ☐ Never

How often do you find yourself still working on an assignment or other academic work the day before it is due? *

- ☐ Always
- ☒ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

Do you feel that the statement, "I work better last minute", applies to you? *

- ☐ Yes
- ☒ No

How often do you hand in academic work late? *

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☒ Never

How often do you use the internet to assist in completing academic work when at home? *

- ☒ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

When working online at home, how often do you find yourself going to unrelated sites or applications? *

- ☐ Always
- ☒ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

On average, how much time per day do you believe you spend procrastinating academic work at home? *

- ☐ 0-2 Hours
- ☒ 3-5 Hours
- ☐ 6-8 Hours
- ☐ 9 Hours and above

Do you use the internet to procrastinate at home? *

- ☒ Yes
- ☐ No

Of the time you procrastinate academic work, how much time do you spend on the internet? *

- ☐ 0 - 29%
- ☒ 30 - 59%
- ☐ 60 - 89%
- ☐ 90 - 100%

Which sites or applications do you use the most when you procrastinate online at home? (Multiple options can be selected for this question) *

- ☒ Social Media
- ☐ Email
- ☐ Search Engines
- ☐ Streaming Services
- ☐ Shopping
- ☐ Other

If 'Other' please specify:

.....

Submitted 8/14/20, 10:17 AM

9.2. Example 2: Completed Survey

Responses cannot be edited

Exploring the impact of internet access within the household on students' levels of academic procrastination

* Required

Introduction

Thank you for taking the time to complete this survey. Before proceeding please read the following:

This survey aims to explore the impact of internet access, within the household setting, on students' levels of academic procrastination. Participants should have access to the internet within their household and be a student at a tertiary institution. Please note that this survey is anonymous and that any information will remain confidential and will only be shared with my research supervisor. I would also like to remind you that you do not have to answer any questions that may cause discomfort. This survey consists of 18 questions. It should take roughly 6 minutes of your time to complete.

Instructions

Please answer the questions below by selecting the response that applies best to you.

Do you have internet access in your household? *

☒ Yes

☐ No

On average, how much time per day do you spend on the internet (including social media and messaging platforms), at home? *

- ☐ 0-2 Hours
- ☐ 3-5 Hours
- ☐ 6-8 Hours
- ☒ 9 hours and above

When you are online, which sites or applications do you access the most? (Multiple options can be selected for this question) *

- ☒ Social Media
- ☒ Email
- ☒ Search Engine
- ☒ Streaming Services
- ☐ Shopping
- ☐ Other

If 'Other' please specify:

.....

How often do you find yourself distracted when completing academic work at home? *

- ☐ Always
- ☒ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

How often do you find yourself completing other unrelated tasks over academic work, when at home? *

- ☒ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

How often do you find yourself distracted by internet-related activities (including social media and messaging platforms), at home, when you planned to complete academic work? *

- ☒ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

How often do you delay academic work at home until you are in a better mood or have more energy to complete it? *

- ☐ Always
- ☒ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

How often do you find yourself still working on an assignment or other academic work the day before it is due? *

- ☒ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

Do you feel that the statement, "I work better last minute", applies to you? *

- ☒ Yes
- ☐ No

How often do you hand in academic work late? *

- ☐ Always
- ☒ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

How often do you use the internet to assist in completing academic work when at home? *

- ☒ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

When working online at home, how often do you find yourself going to unrelated sites or applications? *

- ☐ Always
- ☒ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

On average, how much time per day do you believe you spend procrastinating academic work at home? *

- ☐ 0-2 Hours
- ☐ 3-5 Hours
- ☐ 6-8 Hours
- ☒ 9 Hours and above

Do you use the internet to procrastinate at home? *

- ☒ Yes
- ☐ No

Of the time you procrastinate academic work, how much time do you spend on the internet? *

- ☐ 0 - 29%
- ☒ 30 - 59%
- ☐ 60 - 89%
- ☐ 90 - 100%

Which sites or applications do you use the most when you procrastinate online at home? (Multiple options can be selected for this question) *

- ☒ Social Media
- ☐ Email
- ☒ Search Engines
- ☒ Streaming Services
- ☐ Shopping
- ☐ Other

If 'Other' please specify:

.....

Submitted 8/14/20, 10:22 AM

10. Annexure D: Final Research Report Summary Document Template

Title: Exploring the impact of internet access within the household on students' levels of academic procrastination: a quantitative study on tertiary education students, using a survey

Research (R) Purpose	R question	R Rationale	Seminal Authors	Literature Review	Paradigm	Approach	Data Collection Method	Ethics	Key Findings	Recommendations
To determine how internet access affects academic procrastination in university students	How does access to the internet in the household setting affect the amount of time a student participates in academic procrastination?	Academic procrastination has negative consequences, thus if internet contributes, interventions can be put in place.	Steel (2007)	Theme 1: Procrastination Theme 2: Academic procrastination Theme 3: Internet and procrastination	Paradigm: positivism Epistemology: Ontology: Reality exists and can be studied Axiology: Objectivity is valued highly.	Quantitative Population: University Students	Online Survey	Consent Confidentiality No harm Unbiased No alteration of findings	More research needs to be done.	More research needs to be done on the topic.
R problem	Sub-questions	Key concepts	Key Theories			Population	Data Analysis Method	Limitations	Key contribution	
Exploring the impact of internet access in the household on students' levels of academic procrastination: a quantitative study on South African (SA) tertiary education students	How much time, on average, do South African tertiary education students spend on the internet per day, at home? Do South African tertiary education students use the internet as a tool of procrastination? What site or application do South African tertiary education students use the most when academically procrastinating?	Procrastination Academic Procrastination Internet Internet access Household Internet access in household University students Self-regulation	Zimmerman's Self-Regulated Learning: the cyclical phases model Five-Factor Model			The characteristics of a tertiary education student and having internet access within their household are identified as parameters of the research population.	Individuals Google Forms Excel	Sample size is small Sample is not representative of population Time-limit cannot research in-depth Sample bias	Provides more information on the topic, specifically regarding South Africa.	
						Sampling				
						Non-probability Snowball Sampling Size: 30 participants				