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**The Effects of Using Technology while Commuting on students Well-being**

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**Declaration**

I declare that this submission is my own work. Where I have read, consulted, and used the work of others I have acknowledged this in the text.

Signed: **Sophie Smith**

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**Abstract**

The purpose of the current research was to look at how using technology while commuting affected students' wellbeing. Ninety participants— thirty males, fifty-seven females, two non-binary, and one who preferred not to be identified—were recruited at random from the Dun Laoghaire Institute of Art, Design, and Technology (IADT) to participate in this research. The current study employed a quantitative survey research design. Participants used Microsoft Forms to perform an online survey which included a series of demographic questions and a WHO well-being scale. The hypothesis was tested using a two-way analysis of variance (ANOVA), which revealed no evidence of a significant difference between the variables. However, the design had flaws, so suggestions for the study's future direction were made. Overall, there was no discernible difference between students' well-being as measured by the amount of time spent on social media and the modes of transportation. Strengths and weaknesses are discussed. To maintain knowledge in this field, additional research might be helpful.

1. Literature Review

* 1. **Introduction**

The current study will explore the impact of technology use on students’ well-being while travelling, and the implications of this on their overall health and wellbeing. In particular, this thesis examines how the use of technology can affect students' physical, mental, and emotional well-being while travelling, and how the use of technology can impact their overall health and wellbeing. Moreover, the thesis looks at the implications of the use of technology for students' well-being while travelling, such as the potential benefits and risks associated with the use of technology, as well as the potential ethical and legal implications of using technology while travelling. Finally, this thesis considers the implications of the use of technology on students' overall health and wellbeing, and suggests potential solutions to help promote healthy use of technology while travelling.

* 1. **Technology**

Technology has ingrained itself into our everyday lives, and its use when travelling has become commonplace. At beginning of the twentieth century, the term "technology" and applications had evolved significantly, and this evolution has persisted. The environment we live in is dominated by technology. The growth of humankind has been significantly influenced by both culture and technological improvement (Amichai-Hamburger, 2009). Throughout a variety of clever and new methods, technology offers creative ways to do tasks.  People’s lifestyles are now more comfortable due to phones, utilities, and better transport methods. It has aided in improving efficiency for both people, businesses, and colleges. This has unquestionably played a significant role in the advancement of humanity throughout time. Less work and effort required, technology has simplified and improved the quality of individuals lives (McCarthy & Wright, 2004). This has resulted in a shift in communication and transportation. Research and technological progress have enabled others to be independent in every aspect of society.

The lifestyles of persons deemed to be a part of the millennial generation are heavily influenced by technology and social media. Social media is defined by Andreas and Michael (2010) as apps built on theoretical and technological foundations that permit the growth and interchange of knowledge. Most college students now lean increasingly to social media platforms and other types of social media to communicate the newest information, share knowledge, and determine their viewpoints (Azadeh, 2011). Social media is becoming increasingly important for the growth of learning. Therefore, in brand-new, technologically advanced period of interaction and all societal, economic, and academic issues grow swiftly both regionally and beyond international boundaries. Social media promotes connections through economical, convenient, and open messaging services. Social media has had a significant effect on how we communicate in schools and businesses daily.

In discussing the effects of technology use while travelling, it is important to look at its potential benefits and drawback as well. Students can use technology to have contact with friends and family while commuting. It can also be a great way to stay organized, as apps can be used to book flights and hotels, and to keep track of expenses. Technology can also be a great source of entertainment, allowing students to watch movies, listen to music, or play games when travelling. On the one hand, technology can make travelling easier and more enjoyable by providing access to information, entertainment, and communication with family and friends (Singh & Samah, 2018). For example, students can use their phones to check timetables, book tickets, or research destinations. Additionally, technology can provide a sense of comfort and security by allowing students to stay connected with family and friends while they are away. However, there are also some potential drawbacks to using technology while travelling. Excessive usage of technology can lead to feelings of loneliness, as students become too focused on their devices and not on the experiences around them. According to Dhiman (2021) technology can also lead to increased levels of stress, as students are constantly plugged in and have access to a constant stream of information this leads to having an impact on their well-being. Furthermore, Technology use can disrupt sleep habits because blue light from screens can prevent the body from producing melatonin naturally, leading to problems with sleeping (Garett et al., 2016).

While technology can help make travelling easier and more enjoyable, there is an issue of great concern, as the impacts of technology use on students’ well-being are not yet fully understood. According to Park and Lee (2012) research has shown that there are both positive and negative effects of technology use on students’ well-being. On the one hand, technology can be a great tool for staying connected and organized, and for providing entertainment. On the other hand, it can lead to feelings of loneliness, increased stress, and disrupted sleep patterns (Garett et al., 2016). It's essential to use technology wisely and to make sure to take breaks from devices in order to engage with the world around them. By doing this, students can make the most of their travels while also taking care of their physical and mental health.

* 1. **Well-being**

Well-being has several meanings, each one being appropriate because of the specific characteristics that humans possess. According to Psychology Dictionary (Colman, 2015), well-being is "a state of happiness, being pleased and content, low degrees of anguish, generally positive physical and cognitive health and attitude, or good quality of life."

College experience is a crucial time that provides students with possibilities to build positive habits. To most individuals, the adjustment from school to college is both rewarding and difficult (Whalen et al., 2013). On the one hand, the college experience allows students to broaden their learning and perception, find themselves and create elements of their private individuality, and accomplish self-improvement (Asikainen et al., 2019). Additionally, this transition presents several innovative, realistic, educational, personal, and mental challenges (Kraut et al., 2006). The variety and extent of how individuals recognize and embrace these challenges differs as well. Implementing new social and intimate relationships, issues with housing arrangements, struggles dealing with newly discovered freedom, Isolation, stress caused by being separated from one's family, financial pressures, medical issues, and responding with the requirements of coursework are just a few of the common issues that several individuals will encounter (Geller & Greenberg, 2009). Individuals differ in their ability to deal with challenges or pressure, as well as the effect it has on their overall well-being. While these challenges influence a student’s well-being, technology has improved some challenges they face (Dienlin & Johannes, 2020).

According to Clark et al (2019) travelling has been linked to poor medical complications that are not specifically linked to the act of travelling. It can be caused by a reduced downtime for activities that promote wellness, including exercise, relaxing, and socializing, due to the impact of a poor commute circumstance. A link among school and family, travelling is an essential component of the typical day. The way we travel, and the feeling people get while travelling can affect who we are, not only fitness but also in aspects of our general well-being and lifestyle (Santhosh, 2015). Lengthier commutes and further commutes have been linked to worse mental and physiological results as well as lower well-being (Stutzer & Frey, 2008).

Technology has a direct impact on an individual's wellbeing. As technology has advanced, it has become easier for people to access information and entertainment, which can have a positive impact on an individual's wellbeing. For example, the internet has become an invaluable resource for finding information, connecting with others, and engaging in activities that promote health and wellbeing (Park & Lee, 2012). Additionally, technology can help individuals stay in touch with family and friends, providing an important social outlet. Technology can also have a negative effect on an individual's wellbeing. For example, the internet can be a source of misinformation and can lead to feelings of isolation or depression (Dhiman, 2021). According to Cotton (2008), excessive use of technology can lead to a decrease in physical activity, which can further detract from an individual's wellbeing. The key to ensuring that technology has a positive impact on an individual's wellbeing is moderation. By limiting exposure to technology and using it in a way that is beneficial to mental and physical health, an individual can ensure that technology is a positive influence on their wellbeing (Park & Lee, 2012). Additionally, it is important to be mindful of the information being accessed and the activities being engaged in, as this can also have an effect on wellbeing. Technology can be a powerful resource for promoting wellbeing, but it is important to use it responsibly.

Technology has long been acknowledged as a major factor in many eras of history and development. However, the topic is reframed to look at the demand to "healthy" influences technology, it reveals the intricate, frequently intriguing relationship among well-being and technology. The effects of technology need to be considered from several angles. Individuals are becoming more and more disconnected, worn out and disturbed because of technological innovation (Amichai-Hamburger, 2009). The true definition of wellbeing is questioned by technology suffering now. Loneliness in society, anxiety, and becoming jobless are impacts of technology. Since the variables influencing stronger well-being have evolved along with technology, the spread of technology together with the cycle of well-being can help create a more favorable society (Cotton, 2008). The increasing rates of tension, irritation, and rage brought on by a sense of loneliness, such troubling concerns are raising serious doubts about if technology contributes to wellbeing (Amichai-Hamburger, 2009). This is showing as a barrier to obtaining pleasure. Overall, it is possible to say that technology has provided everyone a different path, as a result it seems to have a good impact on society.

* 1. **Commuting**

Commuting is when a traveler departs the confines of their house, they are traveling on a regular basis from where they live to their work environment or school (Turcotte, 2011). Society today has been significantly impacted by travelling. It’s made it possible for towns to expand to sizes which were before impractical as well as encouraged the growth of cities (Lee, 2012). Commuting has become an essential part of modern life and a reality for many students. Commuting is the act of travelling from one's home to a place of work or study on a regular basis which can be done by car, bus, train, bike, or even walking (Turcotte, 2011). Commuting is an essential part of everyday life for many people, especially those who need to travel long distances.

According to the U.S. Department of Education’s National Centre for Education Statistics (NCES), in 2016, 40 percent of undergraduate students living off-campus commuted to school. For some, commuting to college is a practical reality, while for others it is a lifestyle choice. Commuting to college can have its advantages and disadvantages, depending on the individual and their circumstances. One of the main advantages of commuting to college is the potential cost savings (Pascarella, 1984). By living off-campus and commuting, students can save money on room and board costs. This can be especially beneficial for students who are already not earning much, such as those who are paying their own way through college. Additionally, it can be a great way to save money, as people often take public transportation to their destination rather than driving their own car. Living off-campus and commuting can give students more freedom and flexibility to pursue outside interests and activities, such as internships, part-time jobs, and volunteer opportunities (Pascarella, 1984). The convenience commuting provides, People can easily travel to places that are far away from their homes, which can be important for work or educational opportunities. Commuting also gives people the opportunity to explore different areas and experience new cultures

However, there are also some potential drawbacks to commuting to college. For example, commuting students may feel isolated from the campus community and miss out on events, activities, and networking opportunities that are available to on-campus students (Legrain et al., 2015). Additionally, commuting students may find themselves facing long commutes and transportation costs, which can be costly and time. Commuting can have a significant effect on a student’s well-being. Long and stressful commutes can be stressful, especially in crowded areas or during rush hour which can contribute to higher levels of stress and anxiety, which may negatively impact one's mental health in general (Novaco et al., 2009). Additionally, commutes can lead to fatigue, making it harder to focus and concentrate in class. They can also affect physical health due to sitting in traffic or on public transportation for long periods of time. According to Novaco et al., (2009) commuting can also take away from the time students could be using for studying, recreation, and other activities that could positively impact their well-being depending on the distance, it can take hours to get to a destination, leaving people worn out at end of the day.

* 1. **The Present Study**

In conclusion, this research seeks to investigate The Effects of Using Technology while Commuting on Students Well-Being as recent research has suggested advantages and disadvantages for commuting and technology usage. However, no research has been done to date in an Irish 3rd level community on the effects of using technology while commuting on students' wellbeing. The following issues are addressed by the current study:

* 1. **Research question**

Does well-being differ between students depending on the mode of transport used and length of time using technology?

* 1. **Hypothesis**

**HA:**

H1: There will be a difference on students well-being based on the type of transport used.

H2: There will be a difference on students well-being based on the time spent using technology.

H3: There will be an interaction between students well-being depending on the mode of transport used and length of time using technology.

**HO:**

HO1: There will be no difference on students well-being based on the type of transport used.

HO2: There will be no difference on students well-being based on the time spent using technology.

HO3: There will be no interaction between students well-being depending on the mode of transport used and length of time using technology.

1. Methodology
   1. **Design**

The current study employed a quantitative survey research design. The web based survey Microsoft Forms was used. Participants reported well-being served as the dependent variable. The first independent variable was how long each participant spent using different activities while commuting. The second independent variable was type of transport used to commute. The relationship between the independent and dependent variables was measured. A two way between ANOVA was used for the statistical analysis.

* 1. **Participants**

The participants in this study included 90 students aged 18 to 40+ years. Participants were recruited in Dun Laoghaire Institute of Art, Design and Technology through a convenience sampling strategy by a survey. In recruiting, participants were students who have access to technology and transport. The participants included 30 males (33%), 57 females (63%), 2 non binary (2%) and 1 prefer not to say (1%). Ethical approval was granted by the Department of Technology and Psychology ethics committee at IADT . All participants were treated in accordance with ethical standards (PSI, 2010).

* 1. **Materials**

A Microsoft online survey was designed which included the information sheet, which outlines the rights of the participants and explains the purpose of the study (see Appendix A). A consent form for the participant's participation in the study and a consent form for the researcher were provided (see Appendix B). Each participant who had agreed to take part in the research was given a debriefing form online. The participant is informed of their participation in the debrief, and they are invited to ask any questions or request the removal of any data they no longer wish to be used. In the debrief, my contact information is given as mentioned in (Appendix C) in case they have any queries regarding the study. An online demographic questionnaire included questions about their gender, age and questions relating to technology and commuting (see Appendix D). Followed by The World Health Organization (WHO) Well-Being Scale which is a self-assessment tool designed to measure and assess a student’s overall well-being. The WHO Well-being scale has been found to be a reliable scale to use when testing an induvial well-being (Topp et al., 2015). Participants rate their satisfaction with each area on a five-point scale, with five being the highest level of satisfaction and one being the lowest. The scores are then used to give an overall picture of the students well-being (see Appendix E).

* 1. **Pilot study**

To assess the feasibility of the study and to find any issues that might have negatively impacted the study, a pilot study (N=4) was carried out. The pilot study allowed the researcher the chance to get comfortable with the study's procedures and ensure all was functioning correctly. A few minor errors were noted and fixed once the pilot research was completed. As the average time to complete the questionnaire was shorter than anticipated, one of the errors was modifying the time estimate. A few small adjustments were made to the demographic questionnaire to include the choice "other" .

* 1. **Procedure**

The 90 participants received a briefing that entailed an overview of the study along with an information sheet (see appendix A) that contained additional information and the link for the online survey. Participants were recruited in IADT and through social media. Before taking part in the study, participants who agreed to take part had to tick a box on the consent form (see appendix B) agreeing that they will remain anonymous and confidential. The participant's consent will guarantee a successful ethical outcome ( Silverman, 2010). The researcher indicated that participation was completely optional to the participant and that they could decline to participate in the study. Students who couldn't participate at the time were given a link to the survey so they may participate at a later time (https://forms.office.com/e/tBvbsJpQEe). While the questionnaire was being carried out in class (see appendix D and E ), the researcher remained in the room in case any questions surfaced. It took about five minutes to complete the survey. A debriefing form was provided at the end of the survey to all participants (see appendix C ). Participants were thanked for their time and involvement at the end of the survey.

1. Results
   1. **Overview**

Data was gathered in order to study the effects of using technology while commuting on students’ Well-being. Participants were assessed using an online survey. Using IBM Statistics version 28.01, the relevant statistical analysis was then performed to test the hypothesis. The following key descriptive and inferential statistics was discussed.

* 1. **Descriptive statistics**

The data from 90 participants using SPSS analysis was used. Table 1 displays the summary data of the WHO well-being scale. Figure 1 and Figure 2 displays the N values of the mode of transport and the types of social media used.

**Table 1:**

*Depicting the mean, SD, number of participants, minimum and maximum scores of WHO well-being scale.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Mean | SD | N | Minimum | Maximum |
| Well-being | 16.07 | 4.961 | 91 | 5 | 25 |

**Figure 1:**

*Pie chart depicting the number of participants using each mode of transport. Some participants use more than one type of transport which is show in the pie chart.*

**Graphical user interface, application

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**Figure 2:**

*Bar chart depicting the number of participants using various social media types.*

**Chart, bar chart

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**3.3 Inferential statistics**

Inferential statistics were conducted to analsye three main hypothesis. A two way between subjects ANOVA was used in analysing the result. The alpha level was set at .05 for the statistical test and was used throughout the analysis. Data was analysed by using SPSS software.

Hypothesis 1 stated that there would be a difference on students well-being based on the type of transport used. A two way analysis of variance (ANOVA) was conducted to examine if there was a difference between types of transport used on students well-being. There was no difference found, therefore H1 was not supported.  *F(* 3,89)= . 815, *p= .490*

Hypothesis 2 stated there will be a difference on students well-being based on the time spent using social media. A two way ANOVA was used to employed if there was a difference between the time spent on social media and well-being. There was no difference found, therefore H2 was not supported. *F(*3,89)= .142, *p= .935*

A two way ANOVA was conducted on H3 to determine if there will be an interaction between students well-being depending on the mode of transport used and length of time using social media. There was no significant difference and therefore the result was not supported. *F*(4,89)= .385, *p= .819*

The descriptive and inferential statistics on the above results showed no significant differences between variables on the three hypothesis, which examined students well-being based on the type of transport used, students well-being based on the time spent using social media and the interaction between students well-being depending on the mode of transport used and length of time using social media.

1. Discussion
   1. **Overview of findings**

The purpose of this study was to look into the effects of using technology while commuting on students' well-being. The WHO wellbeing questionnaire was given to participants to compete . The main findings concluded that modes of transportation and the amount of time spent on social media while commuting had no effect on students' wellbeing.

Hypothesis 1 stated that that there would be a difference on students well-being based on the type of transport used. The present study, therefore, did not support the hypothesis that the type of transport used while commuting would effect students well-being. Previous research has showed the advantages and disadvantage of commuting, for example potential cost savings students would face (Pascarella, 1984). According to Novaco (2009) long and stressful commutes can have a negative impact on overall mental health.

Hypothesis 2 posited that there will be a difference on students well-being based on the time spent using technology. Existing studies on this topic is limited. The study focuses on the time spent on social media while commuting and if it effects students' well-being. However, research supports the rejection when it comes to examining students' well-being while using social media during their commutes. Dhiman (2021) measured levels of stress and found that using technology leads to having an impact on their well-being, his findings were positive.

Hypothesis 3 proposed that there will be an interaction between students well-being depending on the mode of transport used and length of time using technology. This hypothesis was also rejected, indicating that no interaction between the dependent and independent variables that existed in the current study. For example, (Santhosh, 2015) stated that our travel habits can have an impact on our who we are, including how fit we are as well as other lifestyle and general well-being factors.

* 1. **Theoretical and Practical Implications**

The effects of using technology while commuting on students' wellbeing were the focus of the current research. The current research provides theoretical contributions on the area of students well-being, social media and different modes of transportation. In contrast to earlier research, this study looked into how different types of transportation and the amount of time spent on social media while commuting had an effect on  students' wellbeing. The study's findings demonstrated that it had no appreciable impact on their wellbeing. Therefore there is a need for more research in this field as a result. However, other research could look into reasons why students engage on social media while commuting other than the time spent using social media while commuting. Additionally, it appears that variables like how quickly or how comfortably a particular mode of transportation is can influence students' decisions could be investigated.

* 1. **Strengths and Limitations**

This study has identified multiple strengths, the most notable being the use of the WHO Well-being Scale. In psychological research, this scale is a dependable, effective, and frequently employed measurement (Topp et al., 2015). The current study was beneficial in that it filled a void in the literature by investigating well-being, the time spent on social media during commutes, and the form of transportation used. Previous research had only considered either well-being and social media, or well-being and commuting (Park & Lee, 2012). Lastly the sample number in the current study was N= 91 which was a large sample size. The sample size of participants in the study conducted by certain researchers in this field was not as large.

Having undergone the study's advantages, there are clear drawbacks. Due to recruitment at Dun Laoghaire Institute of Art, Design and Technology (IADT), it is possible that the findings of the present research cannot be applied to the larger population. This might be the case because students across all Irish colleges might not experience the same effects of well-being. Another drawback of this research is that it used a survey approach, whereas the outcomes might have been different if an experimental approach had been used.

* 1. **Future Research**

Future researchers who take an interest in looking into social media, commuting, and well-being may find some useful advice in this study. The gender bias in this research was there. (30 males and 57 females). Taking this into consideration might produce outcomes opposite to those seen in the current research.

According to literature, the use of public transportation is increasing as a result of the rising expense of living (Pascarella, 1984). An increasing number of people are suffering effects on their wellbeing, which is having a negative impact on the Irish population. Future research in this field must be done without delay. Students felt that there were a number of challenges when commuting, which led to a rise in stress and general wellbeing (Santhosh, 2015).

Finally, instead of just concentrating on social media as a whole while commuting, future study may look into different forms of it. Additionally, examining how students' well-being varies in relation to written and visual based social media networks which could contribute to study on contemporary forms of social media

* 1. **Conclusion**

In conclusion, the current research finds no link between using technology while commuting and students wellbeing. The results of the current study also contribute support to studies on the relationship between students' well-being , their length of time using social media and mode of transportation. The study's additional results also suggest areas for future researchers to examine further.

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1. Appendices

**6.1 Information sheet: ( Appendix A)**

**Title of project**: The effects of using technology while commuting on students well-being

You are being invited to take part in the research that examines the effects of using technology while commuting on students well-being. This project is being undertaken by Sophie Smith for her major research project as part of the BSc (Hons) in Applied Psychology, IADT.   
  
Before you decide whether you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with someone you trust. If there is anything that is unclear or if you would like more information please ask, our contact details are at the end of this information sheet. Thank you for reading this.  
 **What is the purpose of the project?**  
The purpose of this study aims to explore the potential effects of using technology while commuting on students overall wellbeing. This research seeks to determine whether or not students overall wellbeing is positively or negatively impacted by using technology in their commute.  
 **Who is being invited to take part?**  
You are being invited to participate in this study as this study is aimed towards students over the age of 18.  
 **What is involved?**  
If you choose to participate, you will be asked to complete an online questionnaire. The online questionnaire will be distributed as an online link or via email. You will be asked demographic questions regarding you age, gender and questions relating to technology and commuting. Followed by a WHO-5 well-being questionnaire. The questionnaire will take approximately 5 minutes.     
  
**Do I have to take part?**  
You are free to decide whether you wish to take part or not.  If you do decide to take part, you will be asked to sign a consent form that lets us know you have read this information sheet and understand what is involved in the research. You are free to withdraw from this study at any time and without giving reasons. As a student, whether you choose to take part in this study or not, your marks, assessments, or future studies will not be impacted.  
 **What are the disadvantages and risks of taking part?**  
Although it is highly unlikely you will experience any risk or disadvantages from participating in this study, you may choose not to answer the questions if you do not wish to.  
  
**What are the possible benefits of taking part?**  
I cannot promise the study will help you, but by taking part in this study you will be assisting a fourth year Applied Psychology student to complete their major research project.

**How will my information be used?**

Your responses to the questionnaire will be combined with all other participants data and statistically analysed. No individual’s data will be identifiable in the final report. The results of this analysis will be reported in the thesis for the BSc (Hons) in Applied Psychology in the Dun Laoghaire Institute of Art, Design & Technology. This can be requested through the Library at IADT, or by emailing the researcher (N00191436@iadt.ie) or my supervisor (cliona.flood@iadt.ie). This study may also be published in an academic journal article and may be written about for blog posts or media articles, and these can be requested from the researcher.  
  
**How will my data be protected?**  
Under the EU General Data Protection Regulation (GDPR) the legal basis for collecting data for scholarly research is that of public interest. The regulations regarding the protection of your data will be followed. Only data which is needed for analysis will be collected. By giving your consent to take part in the study you are consenting to the use of your data as detailed in this information sheet.  
  
The data will be retained by the researcher for at least one year and may be retained for up to 7 years if the results of the study are published in certain capacities (e.g., in a journal article). There is also a possibility that the fully anonymised dataset may be submitted to a journal and made available to other researchers and academics worldwide for verification purposes, but if this occurs it will be ensured that you are not identifiable from the data.  
  
As the supervisor on this project, I, Cliona flood, am responsible for ensuring that all datasets will be stored in accordance with GDPR regulations and those which are not submitted to a journal will be fully deleted on or before January 2030.  
  
You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/  
  
**Who has reviewed the study?**  
This study has been approved by the IADT Psychology Ethics Committee.  
  
**What if you have any questions or there is a problem?**  
If you have a concern about any aspect of this study, you may wish to speak to the researcher who will do their best to answer your questions.  You should contact Sophie Smith at N00191436@iadt.ie  
or my supervisor Cliona flood at Cliona.flood@iadt.ie.    
 **Thank you.**  
  
**Date**

14th of February 2023

**6.2 Consent form: (Appendix B)**

**Title of Project:**The effects of using technology while commuting on students well-being

**Name of Researcher:**Sophie Smith

## Please tick box

|  |  |  |
| --- | --- | --- |
| 1 | I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. | □ |
| 2 | I understand that my participation is voluntary and that I am free to withdraw at any time. | □ |
| 3 | I understand that data collected about me during this study will not be identifiable when the research is published. | □ |
| 4 | I am over 18 | □ |
| 5 | I agree to take part in this study. | □ |

**6.3 Demographic form: (Appendix D)**

1.Please provide us with an anonymised code which we can use to identify your data if you later wish to have it removed from our dataset. Please do so by answering the following two questions. What are the second letters of your first and last name? (For example, if your name is Jane Smith, these letters would be ‘AM’) and What are the last three digits of your telephone number for example (Jane Smith, 087689032 – AM032)

2.How old are you?

* 18 - 25
* 26 – 35
* 36 – 46
* >45
* Prefer not to say

3.By what gender do you identify?

* Woman
* Man
* Non-binary
* Prefer not to say

4.What is you level of education?

* Undergraduate student
* Postgraduate student
* Certificate student
* Prefer not to say

5.How often do you use public transport?

* Daily
* Weekly
* Monthly
* Never

6.How long does you journey typically take? (Answer in minutes)

* 0-15 minutes
* 15-30 minutes
* 30-60 minutes
* Over an hour

7.What public transport do you take?

* Bus
* Luas
* Train
* Dart

7.While com muting what type of technology do you use?

* Phone
* Ipad
* Laptop
* Tablet
* Other

8.What activities do you participate in ?

* Instagram
* Snapchat
* Facebook
* Music
* Communicating
* Other

9.How much time do you spend on these activities while commuting?

* 0-15 minutes
* 15-30 minutes
* 30-60 minutes
* Over an hour

**6.4 The WHO-5 Well- being Questionnaire: (Appendix E)**

1.I have felt cheerful and in good spirits

* All the time
* Most of the time
* More than half the time
* Less than half the time
* Some of the time
* At no time

2.I have felt calm and relaxed

* All the time
* Most of the time
* More than half the time
* Less than half the time
* Some of the time
* At no time

3.I have felt active and vigorous

* All the time
* Most of the time
* More than half the time
* Less than half the time
* Some of the time
* At no time

4.I woke up feeling fresh and rested

* All the time
* Most of the time
* More than half the time
* Less than half the time
* Some of the time
* At no time

5.My daily life has been filled with things that interest me

* All the time
* Most of the time
* More than half the time
* Less than half the time
* Some of the time
* At no time

**6.5 Debriefing information form: (Appendix C)**

**Title of Project:**The effects of using technology while commuting on students well-being

**Name of Researcher:**Sophie Smith  
  
**Thank you very much for taking part in this research study.**  
This study is designed to investigate the effects of using technology while commuting on students well-being. Your participation in this study has helped a final year student in the completion of her major research project for the BSc Applied Psychology.  
  
**Withdrawal information**If you have any questions about this study, or if you would like to withdraw your data from the study, please contact the researcher (N00191436@iadt.ie) or my supervisor (Cliona.flood@iadt.ie). In your email let them know your unique ID code.  
  
If you submit a request for data removal, all data collected from you will be securely deleted. You will be able to remove your data from the study until 14/02/2023 when the data will be combined and analysed. Data removal will not be possible after that date. Please keep a copy of this information in case you wish to remove your data after leaving this screen.  
  
**Data protection**Your data will be treated according to GDPR regulations. You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/   
  
**Support resources**If you have been affected by the content of this study in any way, the organisations below may be of assistance.  
  
Pieta house www.pietahouse.ie / 1800 247 247  
Aware www.aware.ie / 1800 804 848  
  
**Thank you again for taking the time to participate in this research.**  
If you have any questions about this study, please contact the researcher Sophie Smith (N00191436@iadt.ie) or my supervisor Cliona Flood (cliona.flood@iadt.ie).

**6.6 Confirmation of consent for data use:**

1. Having completed the questionnaire:
   * I consent to the researchers using my answers for their research
   * I wish to have my answers removed from the research

**6.7**

|  |  |  |  |
| --- | --- | --- | --- |
| **Between-Subjects Factors** | | | |
|  | | Value Label | N |
| What public transport do you take? | 1 |  | 64 |
| 2 |  | 17 |
| 3 |  | 6 |
| 4 |  | 2 |
| How much time do you spend on these activities while commuting? | 0-15 Minutes; | 0-15 Minutes; | 18 |
| 15-30 Minutes; | 15-30 Minutes; | 27 |
| 30-60 Minutes; | 30-60 Minutes; | 31 |
| Over an hour; | Over an hour; | 13 |

**6.8**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Descriptive Statistics** | | | | |
| Dependent Variable: totalwellbeingscore | | | | |
| What public transport do you take? | How much time do you spend on these activities while commuting? | Mean | Std. Deviation | N |
| 1 | 0-15 Minutes; | 16.20 | 4.858 | 15 |
| 15-30 Minutes; | 17.65 | 5.442 | 17 |
| 30-60 Minutes; | 16.68 | 4.087 | 22 |
| Over an hour; | 15.10 | 5.486 | 10 |
| Total | 16.58 | 4.830 | 64 |
| 2 | 0-15 Minutes; | 16.00 | 7.937 | 3 |
| 15-30 Minutes; | 14.11 | 5.622 | 9 |
| 30-60 Minutes; | 15.33 | 8.963 | 3 |
| Over an hour; | 13.50 | 3.536 | 2 |
| Total | 14.59 | 5.938 | 17 |
| 3 | 30-60 Minutes; | 14.17 | 2.858 | 6 |
| Total | 14.17 | 2.858 | 6 |
| 4 | 15-30 Minutes; | 16.00 | . | 1 |
| Over an hour; | 20.00 | . | 1 |
| Total | 18.00 | 2.828 | 2 |
| Total | 0-15 Minutes; | 16.17 | 5.182 | 18 |
| 15-30 Minutes; | 16.41 | 5.549 | 27 |
| 30-60 Minutes; | 16.06 | 4.412 | 31 |
| Over an hour; | 15.23 | 5.102 | 13 |
| Total | 16.07 | 4.961 | 89 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **6.9 Levene's Test of Equality of Error Variancesa,b** | | | | | |
|  | | Levene Statistic | df1 | df2 | Sig. |
| totalwellbeingscore | Based on Mean | 1.761 | 8 | 78 | .098 |
| Based on Median | .712 | 8 | 78 | .680 |
| Based on Median and with adjusted df | .712 | 8 | 42.830 | .680 |
| Based on trimmed mean | 1.694 | 8 | 78 | .113 |
| Tests the null hypothesis that the error variance of the dependent variable is equal across groups. | | | | | |
| a. Dependent variable: totalwellbeingscore | | | | | |
| b. Design: Intercept + Whatpublictransportdoyoutake +  Howmuchtimedoyouspendontheseactivitieswhilecommuting + Whatpublictransportdoyoutake \*  Howmuchtimedoyouspendontheseactivitieswhilecommuting | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **6.10 Tests of Between-Subjects Effects** | | | | | | | | |
| Dependent Variable: totalwellbeingscore | | | | | | | | |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Powerb |
| Corrected Model | 146.752a | 10 | 14.675 | .567 | .836 | .068 | 5.670 | .272 |
| Intercept | 5901.282 | 1 | 5901.282 | 228.002 | <.001 | .745 | 228.002 | 1.000 |
| Whatpublictransportdoyoutake | 63.258 | 3 | 21.086 | .815 | .490 | .030 | 2.444 | .219 |
| Howmuchtimedoyouspendontheseactivitieswhilecommuting | 11.007 | 3 | 3.669 | .142 | .935 | .005 | .425 | .075 |
| Whatpublictransportdoyoutake \*  Howmuchtimedoyouspendontheseactivitieswhilecommuting | 39.834 | 4 | 9.958 | .385 | .819 | .019 | 1.539 | .134 |
| Error | 2018.844 | 78 | 25.883 |  |  |  |  |  |
| Total | 25142.000 | 89 |  |  |  |  |  |  |
| Corrected Total | 2165.596 | 88 |  |  |  |  |  |  |
| a. R Squared = .068 (Adjusted R Squared = -.052) | | | | | | | | |
| b. Computed using alpha = .05 | | | | | | | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **6.11 Multiple Comparisons** | | | | | | | |
| Dependent Variable: totalwellbeingscore | | | | | | | |
|  | (I)  How much time do you spend on these activities while commuting? | (J)  How much time do you spend on these activities while commuting? | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|  | Lower Bound | Upper Bound |
| Tukey HSD | 0-15 Minutes; | 15-30 Minutes; | -.24 | 1.548 | .999 | -4.30 | 3.82 |
| 30-60 Minutes; | .10 | 1.508 | 1.000 | -3.86 | 4.06 |
| Over an hour; | .94 | 1.852 | .958 | -3.93 | 5.80 |
| 15-30 Minutes; | 0-15 Minutes; | .24 | 1.548 | .999 | -3.82 | 4.30 |
| 30-60 Minutes; | .34 | 1.339 | .994 | -3.17 | 3.86 |
| Over an hour; | 1.18 | 1.717 | .902 | -3.33 | 5.69 |
| 30-60 Minutes; | 0-15 Minutes; | -.10 | 1.508 | 1.000 | -4.06 | 3.86 |
| 15-30 Minutes; | -.34 | 1.339 | .994 | -3.86 | 3.17 |
| Over an hour; | .83 | 1.681 | .960 | -3.58 | 5.25 |
| Over an hour; | 0-15 Minutes; | -.94 | 1.852 | .958 | -5.80 | 3.93 |
| 15-30 Minutes; | -1.18 | 1.717 | .902 | -5.69 | 3.33 |
| 30-60 Minutes; | -.83 | 1.681 | .960 | -5.25 | 3.58 |
| Scheffe | 0-15 Minutes; | 15-30 Minutes; | -.24 | 1.548 | .999 | -4.66 | 4.18 |
| 30-60 Minutes; | .10 | 1.508 | 1.000 | -4.21 | 4.41 |
| Over an hour; | .94 | 1.852 | .968 | -4.36 | 6.23 |
| 15-30 Minutes; | 0-15 Minutes; | .24 | 1.548 | .999 | -4.18 | 4.66 |
| 30-60 Minutes; | .34 | 1.339 | .996 | -3.48 | 4.17 |
| Over an hour; | 1.18 | 1.717 | .925 | -3.73 | 6.08 |
| 30-60 Minutes; | 0-15 Minutes; | -.10 | 1.508 | 1.000 | -4.41 | 4.21 |
| 15-30 Minutes; | -.34 | 1.339 | .996 | -4.17 | 3.48 |
| Over an hour; | .83 | 1.681 | .970 | -3.97 | 5.64 |
| Over an hour; | 0-15 Minutes; | -.94 | 1.852 | .968 | -6.23 | 4.36 |
| 15-30 Minutes; | -1.18 | 1.717 | .925 | -6.08 | 3.73 |
| 30-60 Minutes; | -.83 | 1.681 | .970 | -5.64 | 3.97 |
| LSD | 0-15 Minutes; | 15-30 Minutes; | -.24 | 1.548 | .877 | -3.32 | 2.84 |
| 30-60 Minutes; | .10 | 1.508 | .946 | -2.90 | 3.10 |
| Over an hour; | .94 | 1.852 | .615 | -2.75 | 4.62 |
| 15-30 Minutes; | 0-15 Minutes; | .24 | 1.548 | .877 | -2.84 | 3.32 |
| 30-60 Minutes; | .34 | 1.339 | .799 | -2.32 | 3.01 |
| Over an hour; | 1.18 | 1.717 | .495 | -2.24 | 4.60 |
| 30-60 Minutes; | 0-15 Minutes; | -.10 | 1.508 | .946 | -3.10 | 2.90 |
| 15-30 Minutes; | -.34 | 1.339 | .799 | -3.01 | 2.32 |
| Over an hour; | .83 | 1.681 | .621 | -2.51 | 4.18 |
| Over an hour; | 0-15 Minutes; | -.94 | 1.852 | .615 | -4.62 | 2.75 |
| 15-30 Minutes; | -1.18 | 1.717 | .495 | -4.60 | 2.24 |
| 30-60 Minutes; | -.83 | 1.681 | .621 | -4.18 | 2.51 |
| Bonferroni | 0-15 Minutes; | 15-30 Minutes; | -.24 | 1.548 | 1.000 | -4.43 | 3.95 |
| 30-60 Minutes; | .10 | 1.508 | 1.000 | -3.98 | 4.18 |
| Over an hour; | .94 | 1.852 | 1.000 | -4.08 | 5.95 |
| 15-30 Minutes; | 0-15 Minutes; | .24 | 1.548 | 1.000 | -3.95 | 4.43 |
| 30-60 Minutes; | .34 | 1.339 | 1.000 | -3.28 | 3.97 |
| Over an hour; | 1.18 | 1.717 | 1.000 | -3.47 | 5.83 |
| 30-60 Minutes; | 0-15 Minutes; | -.10 | 1.508 | 1.000 | -4.18 | 3.98 |
| 15-30 Minutes; | -.34 | 1.339 | 1.000 | -3.97 | 3.28 |
| Over an hour; | .83 | 1.681 | 1.000 | -3.72 | 5.38 |
| Over an hour; | 0-15 Minutes; | -.94 | 1.852 | 1.000 | -5.95 | 4.08 |
| 15-30 Minutes; | -1.18 | 1.717 | 1.000 | -5.83 | 3.47 |
| 30-60 Minutes; | -.83 | 1.681 | 1.000 | -5.38 | 3.72 |
| Based on observed means.  The error term is Mean Square(Error) = 25.883. | | | | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| ***6.11.1* Total Wellbeing Score** | | | |
|  | How much time do you spend on these activities while commuting? | N | Subset |
|  | 1 |
| Tukey HSDa,b,c | Over an hour; | 13 | 15.23 |
| 30-60 Minutes; | 31 | 16.06 |
| 0-15 Minutes; | 18 | 16.17 |
| 15-30 Minutes; | 27 | 16.41 |
| Sig. |  | .886 |
| Scheffea,b,c | Over an hour; | 13 | 15.23 |
| 30-60 Minutes; | 31 | 16.06 |
| 0-15 Minutes; | 18 | 16.17 |
| 15-30 Minutes; | 27 | 16.41 |
| Sig. |  | .912 |
| Means for groups in homogeneous subsets are displayed.  Based on observed means.  The error term is Mean Square(Error) = 25.883. | | | |
| a. Uses Harmonic Mean Sample Size = 19.824. | | | |
| b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed. | | | |
| c. Alpha = .05. | | | |

*6.11.2*